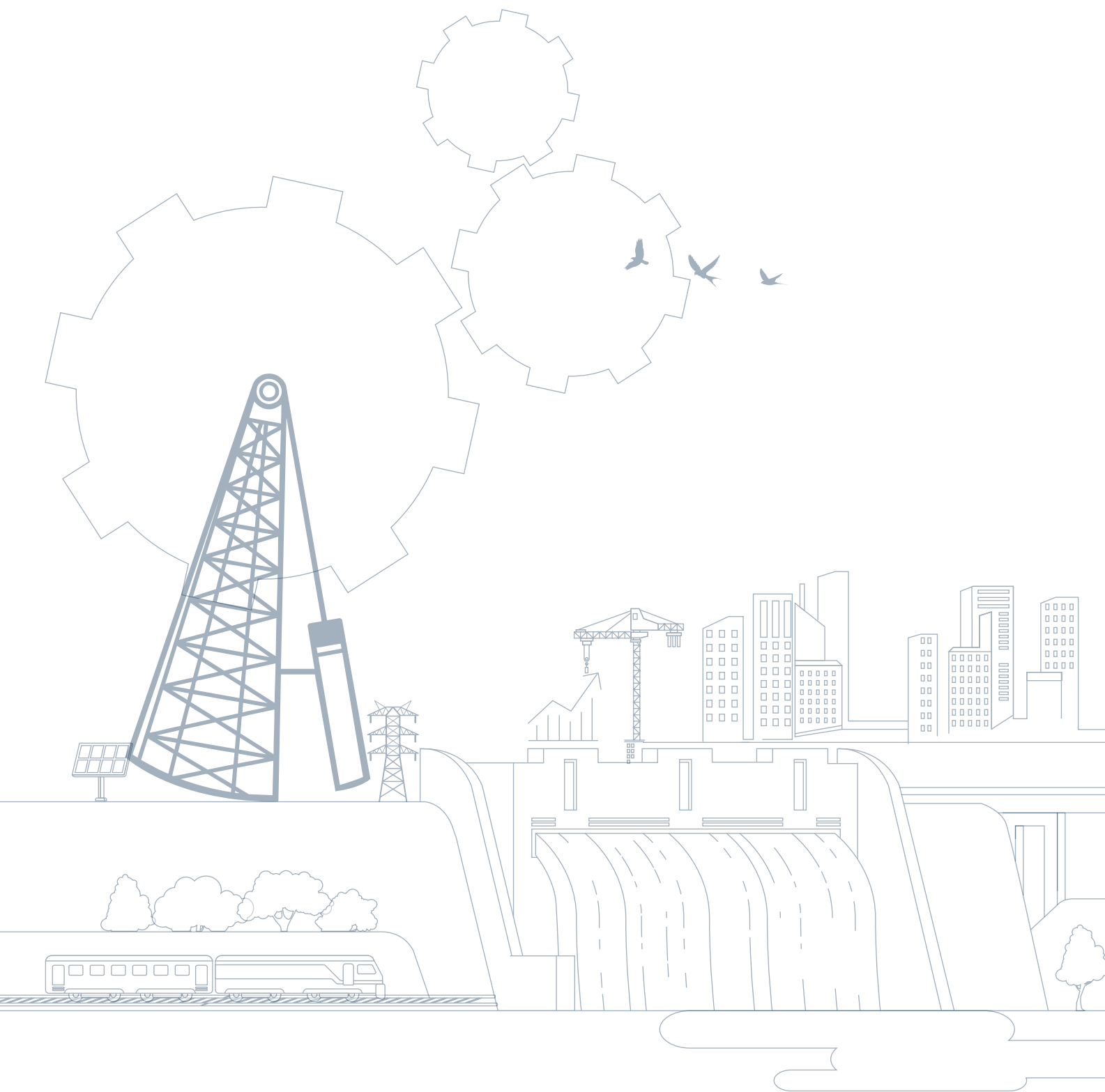


CH. KARNCHANG PUBLIC COMPANY LIMITED

## Annual Report

# 2018





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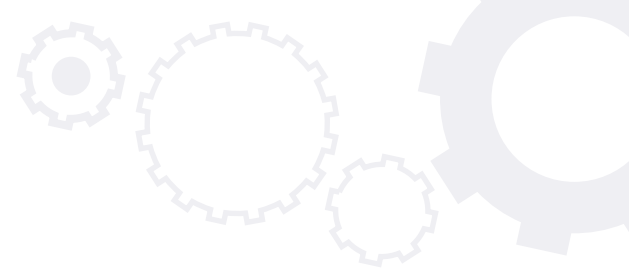
## Message from the Chairman of the Board of Directors



**Mr. Aswin Kongsiri**  
Chairman of the Board of Directors  
CH. Karnchang Public Company Limited







Thailand's economic outlook in 2018, according to the forecast of the Bureau of Macroeconomic Policy, Fiscal Policy Office, continuously expanded by 4.5 percent, an increase from 3.9 percent of the previous year, resulting from the private expenditures in terms of private consumption, tourism and investment which are likely to further expand, including progress of many large-scale investment projects of the government sector.<sup>1</sup> While the construction industry during 2018 - 2020 remains prone to healthy grow. The Office of the National Economics and Social Development Board (NESDB) has anticipated that private and public investment continued to greatly expand, namely, at 6.2 percent for public investment and at 4.7 percent for private investment, due to an increase in investment ceiling under the annual expenditure budget 2019, along with progress of the government sector's major large-scale investment projects in a manner which investment projects under construction are distinctly increasing.<sup>2</sup>

The Company's operational results for 2018 remained good and satisfactory. The Company's net profit in the financial statements was a total of Baht 2,494 Million. As at the end of 2018, the Company's backlog was worth more than Baht 48,261 Million, which all of them progressed according to plan and achieved the set target. Looking forward in 2019, many mega projects of the government sector are expected to be periodically launched for bidding so it marks the year of positive opportunity for CH. Karnchang Public Company Limited as an infrastructure project contractor, investor and developer whereby the Company has been well prepared in all perspectives and has absolute confidence in bidding for all of such solid projects.

For the Company's operations carried out from the beginning until the present time of synergy of ideas from multiple generations, the Board of Directors and the management remain firmly committed to management under the policies which have regard for stakeholders of all sectors in terms of economy, society, environment and sustainable development, as well as adhering to the code of business ethics, in order to ensure that the good governance and best practices of good corporate governance are embedded in the organization. For that reason, in 2018, the Company received an "Excellent" rating

from the results of Corporate Governance Report of Thai Listed Companies (CGR) from the Thai Institute of Directors Association (IOD), signifying that the level of the Company's "Excellence" remained unchanged, for the fourth year in a row. Moreover, the Company also received the Best Investor Relations Awards in SET Awards 2018 Event organized by the Stock Exchange of Thailand and Money & Banking Magazine, and the Thailand Sustainability Investment 2018 Award or THSI from the Stock Exchange of Thailand, etc.

In addition to the policies on good corporate governance-based management and intensive risk management, the Corporate Social and Environmental Responsibility Committee, by approval of the Board of Directors, has also draw up policies which give priority to and support the corporate social and environmental responsibility projects or CRS activities which are beneficial to communities, society, for instance, by employing technical and engineering potential to create activities and financially sponsor in various aspects, as well as environmental protection and care in the course of operations to minimize negative impact from the business operations, including provision of personnel training to improve and develop their thinking process and work process on a regularly basis so as to allow them to develop those ideas to make innovations which can create added value to the business and are beneficial to communities, society and environment. In this regard, those awards or activities mentioned above are only part which indicates that the Company gives priority to stakeholder of all sectors in economic, social and environmental contexts in an earnest manner, and the Company remains determined to provide continued support and promotion.

I, on behalf of the Board of Directors, would like to extend our thanks to all shareholders, executives, staff, public and private alliances, together with stakeholders of all sectors, for your continued support and trust in CH. Karnchang Public Company Limited. Please rest assured that the Company reaffirms its commitment to keeping the strengths in adopting the strategies, policies and vision to develop the organization and operational directions which can create value added in the long run with an attainment of the stable and sustainable organization.

<sup>1</sup> (Source: FPO, October 2018)

<sup>2</sup> (Source: NESDC, Thai Economy Outlook durig 2018-2019, November 2018)



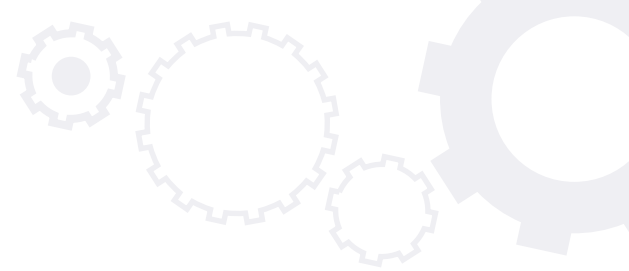
## Message from the Chairman of the Executive Board and the President



**Plew Trivisvavet**  
Chairman of the Executive Board  
CH. Karnchang Public Company Limited



**Supamas Trivisvavet**  
President  
CH. Karnchang Public Company Limited



CH. Karnchang Public Company Limited, throughout the past 46 years from its establishment, has always affirmed the commitment to operating the business with the vision to be the leading construction business and the pre-eminent and comprehensive basic infrastructure investor and developer, at the local and regional levels. With such vision, CH. Karnchang is one of the local and regional leading construction companies with great potential and also is a shareholder in concession-based companies, e.g., representing 30.89 percent in Bangkok Expressway and Public Company Limited (BEM), 27.22 percent in CK Power Public Company Limited, and 19.40 percent in TTW Public Company Limited, all of which are the leading listed companies on the Stock Exchange of Thailand. CH. Karnchang has engaged in activities to achieve the goal to generate good and quality work for customers and selected to implement the projects which are beneficial to the society and the nation based on the principles of corporate governance and the code of business ethics, by emphasizing development of personnel competency, engineering technology, project management and management for competitiveness enhancement of the Company on a continuous basis until the Company has become one leading company with good returns and steady growth.

With respect to CH. Karnchang's operational results for 2018, they were satisfactory according to plan. As at the end of 2018, under the consolidated financial statements, the Company had total revenues in the amount of Baht 31,176 Million, total expenses in the amount of Baht 28,960 Million, total assets in the amount of Baht 83,501 Million, total liabilities in the amount of Baht 57,672 Million, and net profit in the amount of Baht 2,494 Million. All construction projects as operated by the Company substantially progressed according to schedule, among of which were, for instance, the MRT Orange Line (East Section) Project, Contract 1: Underground Civil Works, Thailand Cultural Centre - Ram Khamhaeng 12 Section, with 32.93 percent progress, Contract 2: Underground Civil Works, Ram Khamhaeng 12 - Hua Mak Section, with 21.61 percent progress, and Contract 5: Depot and Park & Ride Facilities, with 27.00 percent progress; the

BangPa-in - Saraburi - Nakhon Ratchasima Intercity Motorway Project, Contract 3, with 41.95 percent progress, and Contract 6, with 82.93 percent progress. The projects expected to be delivered in 2019 include the Construction Project of Double Track Railroad, Chira Junction - Khon Kaen Section, with 90.20 percent progress, which would be completed and ready for service in the second quarter of 2019; the Project Management, Supply, Installation, and Test Run and Commissioning of the M&E Systems for the MRT Blue Line Extension Project, including installation of equipment and construction of supporting facilities necessary for the continued train operation as Through Operation, with 66.88 percent progress, which would be completed in the third quarter of 2019, and Bangkok Expressway and Metro Public Company Limited (BEM) would commence the train operation of the MRT Blue Line Extension Project, Hua Lamphong Station - Lak Song Station Section, to bring benefits to the people by improving the quality of their life, providing convenient travelling with the mass rapid transit system which can minimize pollution; and the Xayaburi Hydroelectric Power Project in the Lao People's Democratic Republic (Lao PDR), with 97.50 percent progress, which is a mega project with highest value and with the longest construction term, let alone tremendous challenges it has encountered, and yet, it is expected to be completed according to plan in the fourth quarter of 2019, and then, the power plant would officially commence the Commercial Operation Date, with its capacity to generate clean and low-priced renewal energy for Thailand, together with the Lao People's Democratic Republic (Lao PDR), etc.<sup>1</sup>

In 2018, the Company has signed new 9 projects, with the total value of Baht 5,982 Million, comprising Management Project for Construction and Improvement of Administration Building at Depot of MRT Huai Khwang Station and Supply, Installation of the M&E Systems (Additional) of the MRT Blue Line Extension Project, with Bangkok Expressway and Metro Public Company Limited, with the value of Baht 558 Million; the Construction Project of Double Track Railroad, Chira Junction - Khon Kaen Section, with the signing of the Additional

<sup>1</sup> Project progress as at December 31, 2018

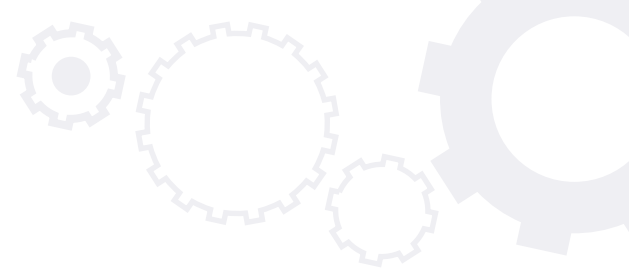
Memorandum of Agreement attached to the Agreement No. 1 with the State Railway of Thailand, with the value of Baht 896 Million; the Project for Development of Ditches along Vibhavadi Rangsit Road (Phase 1) with the Department of Highways, with the value of Baht 297 Million; the Project of Design, Supply, Installation and Testing of the Telecommunications Network within Underground Stations of the MRT Blue Line Extension Project, totaling four stations, namely, Wat Mangkon Station, Sam Yod Station, Sanam Chai Station, and Itsaraphap Station, with Bangkok Expressway and Metro Public Company Limited, with the value of Baht 249 Million; the Project to Accelerate the Opening of Operation Service of the MRT Blue Line Extension Project, divided into 3 sections, i.e., Hua Lamphong Station - Lak Song Station Section, Tao Poon Station - Sirindhorn Station Section, and Sirindhorn Station - Tha Phra Station Section with Bangkok Expressway and Metro Public Company Limited, with the value of Baht 650 Million; the Repair Project of the Structure of the Si Rat Expressway, Period 4, Phase 2, in respect of Sector C (Prachachuen - Chaeng Watthana) and certain part of Sector B (Urupong - Phayathai), with Bangkok Expressway and Metro Public Company Limited, with the value of Baht 32 Million; the Project Management Agreement for Civil Infrastructure and Electrical and Mechanical Systems Maintenance of the MRT Blue Line Project (the MRT Chaloem Ratchamongkhon Line), with the signing of the Memorandum of Agreement for the Amendment Agreement No. 1 with Bangkok Expressway and Metro Public Company Limited to increase the scope of works, with the total value of Baht 2,778 Million; the Project for Gas Distribution System Relocation of Pathum Thani - Phaya Thai Project by the side of Vibhavadi Rangsit Road with PTT Public Company Limited, with the value of Baht 27 Million; and the Construction Contract of Underground Manholes and Duct Banks in conjunction with the MRT Orange Line Project, Thailand Cultural Centre - Min Buri (Suwinthawong) Section: Contract 1 and Contract 2 of Mass Rapid Transit Authority of Thailand, with Metropolitan Electricity Authority, with the total value of Baht 495 Million.

As at the end of 2018, the Company's backlog to be recognized as revenue was worth Baht 48,261 Million, divided into 78.1 percent for rail system projects; 17.2 percent for energy projects; 2.5 percent for road works; 0.1 percent for building works; 0.5 percent for water system works; and 1.6 percent for other works. The gross profit margin as at the end of 2018 accounted for 7.92 percent, which was at the similar rate to that of the previous year for 7.89 percent.

With regard to the construction industry outlook during 2019 - 2020, its growth remains healthy. The Office of the National Economics and Social Development Board (NESDB) has forecasted that both private and public investment continue to greatly expand (by 6.2 percent for the public investment and 4.7 percent for the private investment), as driven by contributing factors from an increase in investment ceiling under the expenditure budget 2019, along with progress of major large-scale investment projects of the government sector, many of which are in the process of bidding and evidently commence construction. As such, construction and disbursement of the government sector are continuously expedited, and likewise, private investment in construction projects has also expanded.<sup>2</sup>

Moreover, Krungsri Research, Bank of Ayudhya Public Company Limited, has anticipated that investment in the construction industry would be likely to grow in an average range of 7-9 percent per year, resulting from the government policy which continues to give high priority to acceleration of investment in large-scale infrastructure projects both in Bangkok and its surrounding provinces, including all over the region. By 2026, there would be approximately 61 projects, in the total investment amount of Baht 3.2 Trillion, consisting of major projects, for example, the hi-speed rail linked 3 airport project (Suvarnabhumi - Don Mueang - U-Tapao), with the value of approximately Baht One Hundred Billion; the MRT Purple Line (South Section) Project, with the construction value of approximately Baht Eighty Billion; the MRT Orange Line Project, with the construction value of approximately Baht Eighty Billion; the Rama 3 - Dao Khanong -

<sup>2</sup> (Source: NESDB, Thai Economic Outlook 2018 - 2019, November 2018)



Western Outer Ring Road Expressway Project, with the value of approximately Thirty-One Billion. The Company expects to acquire at least 25 percent of all these bid projects. Also, there are joint investment projects on a public-private investment basis in operation and maintenance (O&M) of the Bang Pa-in - Nakhon Ratchasima Intercity Motorway Project and the Bang Yai - Kanchanaburi Intercity Motorway Project, etc., not mention to the recovery of construction investment of the private sector, particularly in residences and commerce along the new electric train routes, as a crucial factor in expanding the construction business in high gear. By the way, as for construction work in our neighboring countries, e.g., Cambodia, the Lao PDR and Myanmar, there is a growing tendency, that is, the construction work in such three countries is expected to considerably increase for the next three years according to the economic conditions which are prone to expand (based on the IMF's forecast, the CLM countries' economies during 2018 - 2020 would expand by 6.2-7.6 percent per year), with an expectation that the economic development in the CLM countries still needs to rely on continued investment in basic infrastructure and facilities, especially in urban areas and special economic zones which are highly growing due to the expansion of the business and tourism sectors. That is an opportunity for Thai contractors to enter to enlarge their construction markets as a result of the advantage of having the common border which is conducive to convenient transportation of construction materials and tools as required for construction works. According to the aforementioned construction industry tendency which would enormously grow during 2019 - 2020, both in Thailand and neighboring countries, CH. Karnchang is ready to bid for all good projects, by reason of the Company's strengths in terms of personnel, technology, machinery and financial potential which can accommodate these new projects.

CH. Karnchang has realized that in the pursuit of the business operations with sustainable growth, strong operational results and steady returns to shareholders like it currently does, the organization will have to give high priority to social responsibility

and eco-friendly actions based on the corporate governance and the code of business ethics. In 2018, CH. Karnchang received an "Excellent" rating from the results of Corporate Governance Report of Thai Listed Companies (CGR) from the Thai Institute of Directors Association (IOD) for the fourth consecutive year; the Best Investor Relations Awards in SET Awards 2018 Event organized by the Stock Exchange of Thailand and Money & Banking Magazine; and the Thailand Sustainability Investment 2018 Award (THSI) from the Stock Exchange of Thailand. Besides, CH. Karnchang has also attached significance to organizing the corporate social and environmental projects (CRS activities) on a continuous basis, under the close supervision of the Corporate Social and Environmental Responsibility Committee of the Company. What's more, the next step of CH. Karnchang is to emphasize the significance of creation of innovations and technology development, with an attention focused on employing the internal personnel's engineering and technical potential to jointly develop innovations within the organization, including communities and society, in order to help solve social problems through process of engagement of staff of CH. Karnchang and communities to join hands to make innovations and achieve the potential of the communities in a sustainable manner.

Under the circumstances of technological changes which pose risks of various forms to be overcome by the Company, the management team and all staff of CH. Karnchang will be fully committed to carrying out professional management based on corporate governance and gearing towards development of competency and capabilities in all fields on a continuous basis to generate good returns to shareholders as well as earnestly taking care of stakeholders of all sectors. Finally, the success of CH. Karnchang as the stable and sustainable organization until now would not have been possible without the continued support from our shareholders, the Board of Directors, management and all staff of CH. Karnchang, including our alliances, both government sector and private sector, financial institutions, along with stakeholders of all sectors. Thank you.





## Board of Directors



**01. MR. ASWIN KONGSIRI**

- Chairman of the Board of Directors
- Independent Director



**02. MR. PLEW TRIVISVAVET**

- Director
- Chairman of the Executive Board
- Nomination and Remuneration Committee Member
- Corporate Governance and Risk Management Committee Member



**03. MR. VITOON TEJATUSSANASOONTORN**

- Director
- Chairman of the Audit Committee
- Chairman of the Nomination and Remuneration Committee
- Chairman of the Corporate Governance and Risk Management Committee
- Independent Director



**04. MR. THAWANSAK SUKHAWUN**

- Director
- Audit Committee Member
- Nomination and Remuneration Committee Member
- Corporate Governance and Risk Management Committee Member
- Independent Director

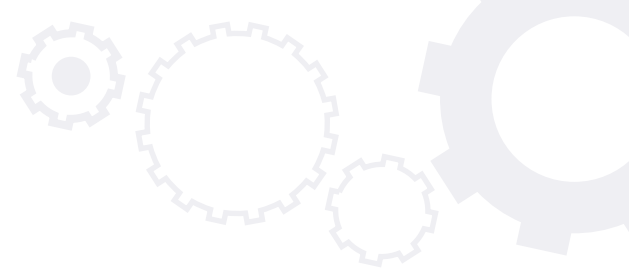


**05. MR. PAVICH TONGROACH**

- Director
- Audit Committee Member
- Chairman of the Corporate Social and Environmental Responsibility Committee
- Independent Director







**06. MISS SUPAMAS TRIVISVAVET**

- Director
- Executive Director
- Corporate Governance and Risk Management Committee Member
- President



**07. MR. NARONG SANGSURIYA**

- Director
- Executive Director
- Nomination and Remuneration Committee Member
- Corporate Governance and Risk Management Committee Member



**08. MR. PRASERT MARITTANAPORN**

- Director
- Executive Director
- Corporate Social and Environmental Responsibility Committee



**09. MR. RATN SANTAANNOP**

- Director
- Executive Director



**10. MR. ANUKOOL TUNTIMAS**

- Director
- Executive Director
- Corporate Social and Environmental Responsibility Committee



## Executive Board



**01. MR. PLEW TRIVISVAVET**

- Chairman of the Executive Board



**02. MISS SUPAMAS TRIVISVAVET**

- Executive Director



**03. MR. NARONG SANGSURIYA**

- Executive Director



**04. MR. PRASERT MARITTANAPORN**

- Executive Director



**05. MR. RATN SANTAANNOP**

- Executive Director



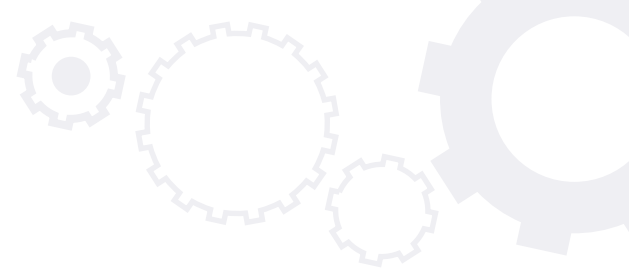
**06. MR. ANUKOOL TUNTIMAS**

- Executive Director





## Senior Management Team



**01. MR. NARONG SANGSURIYA**

- Senior Executive



**02. MR. PRASERT MARITTANAPORN**

- Senior Executive



**03. MR. RATN SANTAANNOP**

- Senior Executive



## Management Team



**01. MISS SUPAMAS TRIVISVAVET**

- President



**02. MR. PHONGSARIT TANTISUVANITCHKUL**

- Senior Executive Vice President :  
Operation Group



**03. MR. SITTIDEJ TRIVISVAVET**

- Senior Executive Vice President :  
Administration Group



**04. MR. ANUKOOL TUNTIMAS**

- Executive Vice President :  
Human Resource and  
General Administration



**05. MR. WATCHARA SANGHATTAWATTANA**

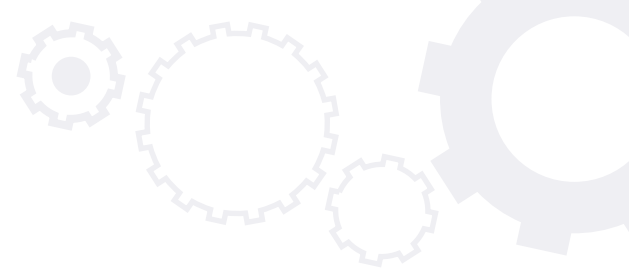
- Executive Vice President :  
Engineering



**06. MR. PORNNARONG SIRIYOTHIN**

- Executive Vice President :  
Construction 1





**07. MR. PRAPON CHANPRADUBFA**

- Executive Vice President :  
Construction 2



**08. MR. PAIRAT PROM-IN**

- Executive Vice President :  
Construction 3



**09. MR. THAMMANOON SURARAT**

- Executive Vice President :  
Construction 4



**10. MR. PICHAI  
CHEYBUMROONG**

- Executive Vice President :  
Purchasing



**11. MRS. RINRADA  
TANGTRONGKID**

- Executive Vice President :  
Accounting and Finance



**12. MR. WIBOON  
UNGAPIATHANACHAI**

- Executive Vice President :  
Internal Audit office



**13 MR. Keerati  
Luangchookiat**

- Executive Vice President:  
Business Development



## Advisors Committee For Board Of Director and The Executive Board



**01. POL. GENERAL NARONG  
MAHANONDA**

- Chairman of the Advisory Committee



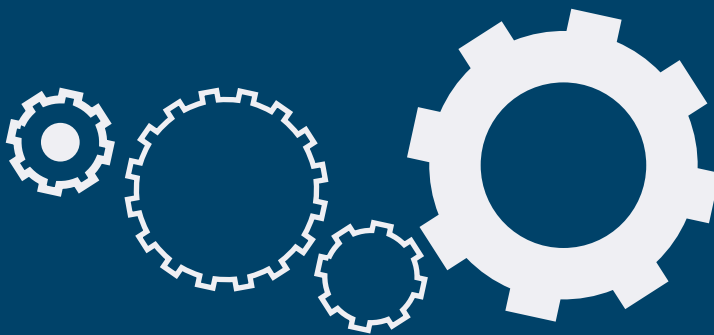
**02. POL. MAJOR GENERAL  
SAWAT VIJARANAKORN**

- Senior Executive Advisor



**03. MR. PRASERT TRIVISVAVET**

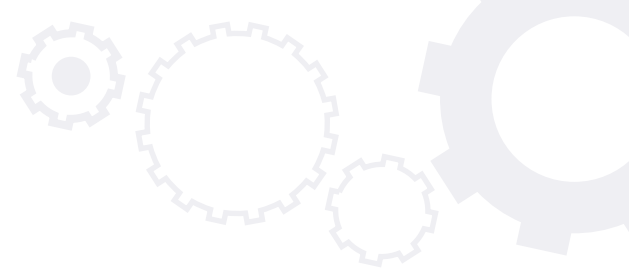
- Advisory Committee for Executive Board



**Company Secretary**







**04. MR. THEP TRIVISVAVET**

- Advisory Committee for Executive Board



**05. MR. YIM TRIVISVAVET**

- Advisory Committee for Executive Board



**06. MR. CHARN CHONGCHIT**

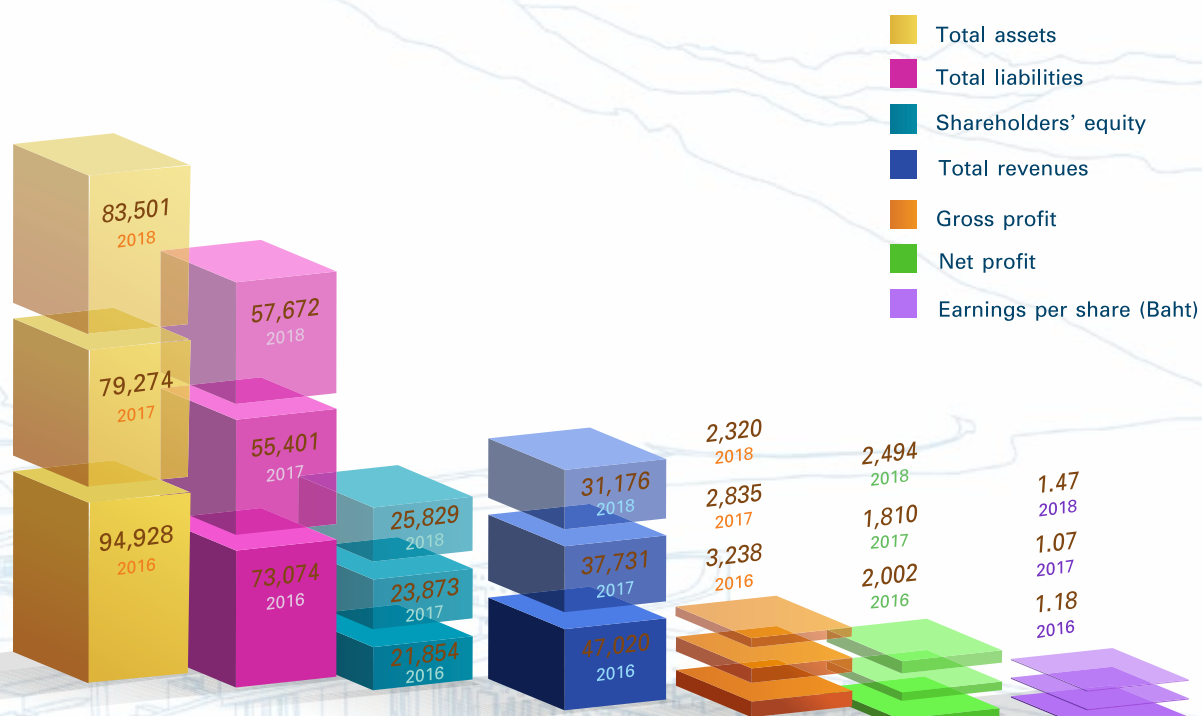
- Legal Advisor



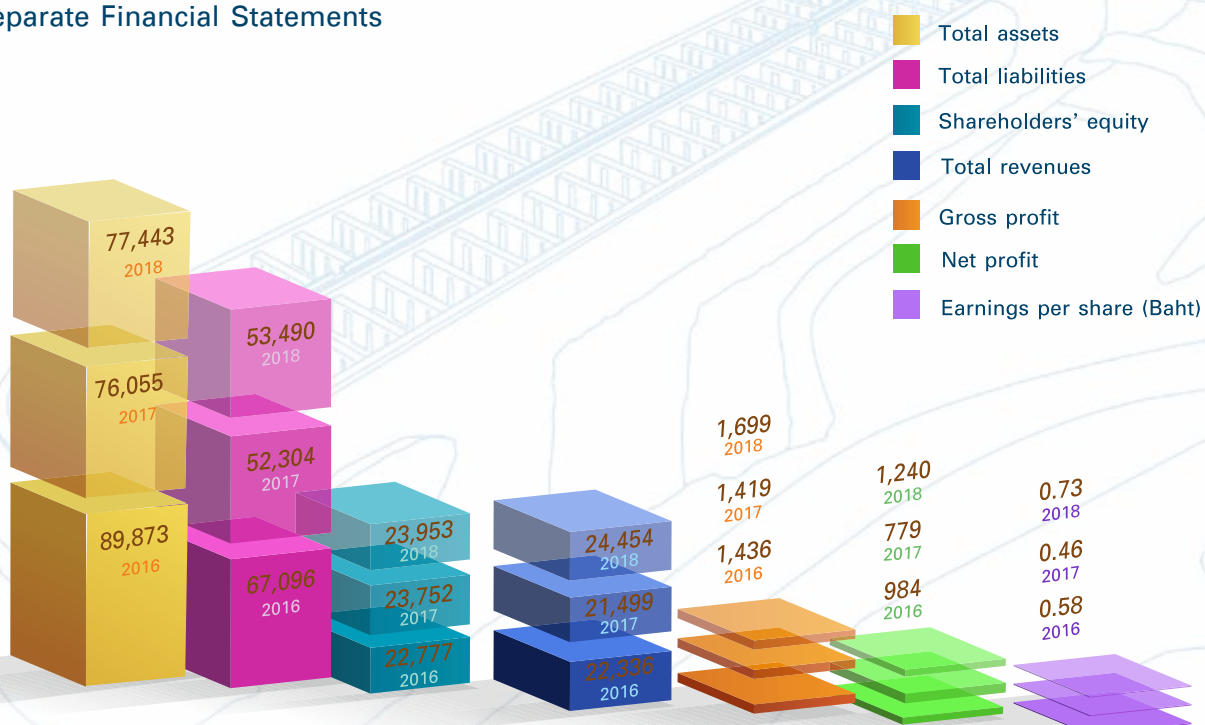
**MR. NATTAVUT TRIVISVAVET**

Company Secretary

## Summary of Financial Information under the Consolidated Financial Statements



## Summary of Financial Information under the Separate Financial Statements



Part



## Business Operations

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Business Policy and Overview

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General Information and  
Other Significant Information







# 1. Business Policy and Overview

CH. Karnchang Public Company Limited was incorporated on November 27, 1972 to operate the business as construction contractor given the opportunity for the construction business expansion while Thailand was focusing on national development, by initiating a number of various construction projects. It is the Company's policy from the outset to focus on construction works which are beneficial for the society and the country and to carry on its operations under the business philosophy based on integrity, justice and utmost interest of all stakeholders as well as to always give priority to the social and environmental responsibility. Initially, the Company's scope of work covered construction of buildings and general civil works, mostly for the Royal Thai Army and the government sector.

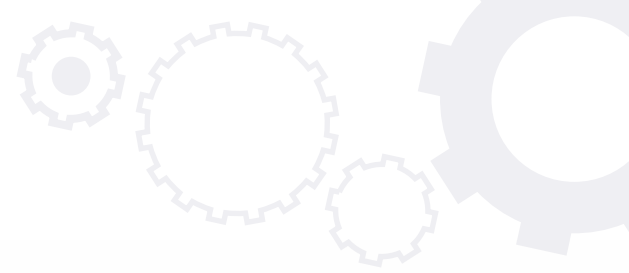
Subsequently in 1981, the Company entered into a joint venture with Tokyu Construction Co., Ltd., one of Japan's top ten construction contractors, to jointly establish CH. Karnchang-Tokyu Construction Co., Ltd. for the purpose of expansion of the scope of business operations and learning and acceptance of construction technology transfer, as well as formation of a business alliance.

Thereafter, the Company was converted into a public limited company on October 10, 1994 and the Company's ordinary shares were listed and began trading on the Stock Exchange of Thailand on August 3, 1995, at which time, the Company was rapidly growing and improving its capabilities and potential in all aspects, including work management and

development of human resources, as well as construction technology development through its joint ventures with foreign companies which possess expertise to enhance its potential for more efficient operations. This has enabled the Company to expand its scope of engagements to various fields to the point at which the Company has become one of the construction contractors which are sufficiently capable of carrying out sophisticated construction requiring advanced construction technology, such as, construction of large scale infrastructure projects, namely, construction of expressways, subways or dams, etc. With the Company's continued development of its capabilities in terms of both engineering and management, the Company is thus able to handle projects on a design and construction or turnkey basis.

Moreover, based on the vision and policy of the management team which realizes the need to enlarge the scope of business operations; create a prominent role and a sustainable and stable growth for the Company, the Company has changed its role to become an investor in regional, comprehensive infrastructure project development. Currently, the Company has invested in small, medium and large concession projects which cover all systems, namely, transportation, mass rapid transit, infrastructure, and hydropower systems. Among these projects include, for instance, investment in Bangkok Expressway Public Company Limited, which constructs and operates the Si Rat Expressway (the Second Stage Expressway), and various extension projects; investment in the MRT Chaloem





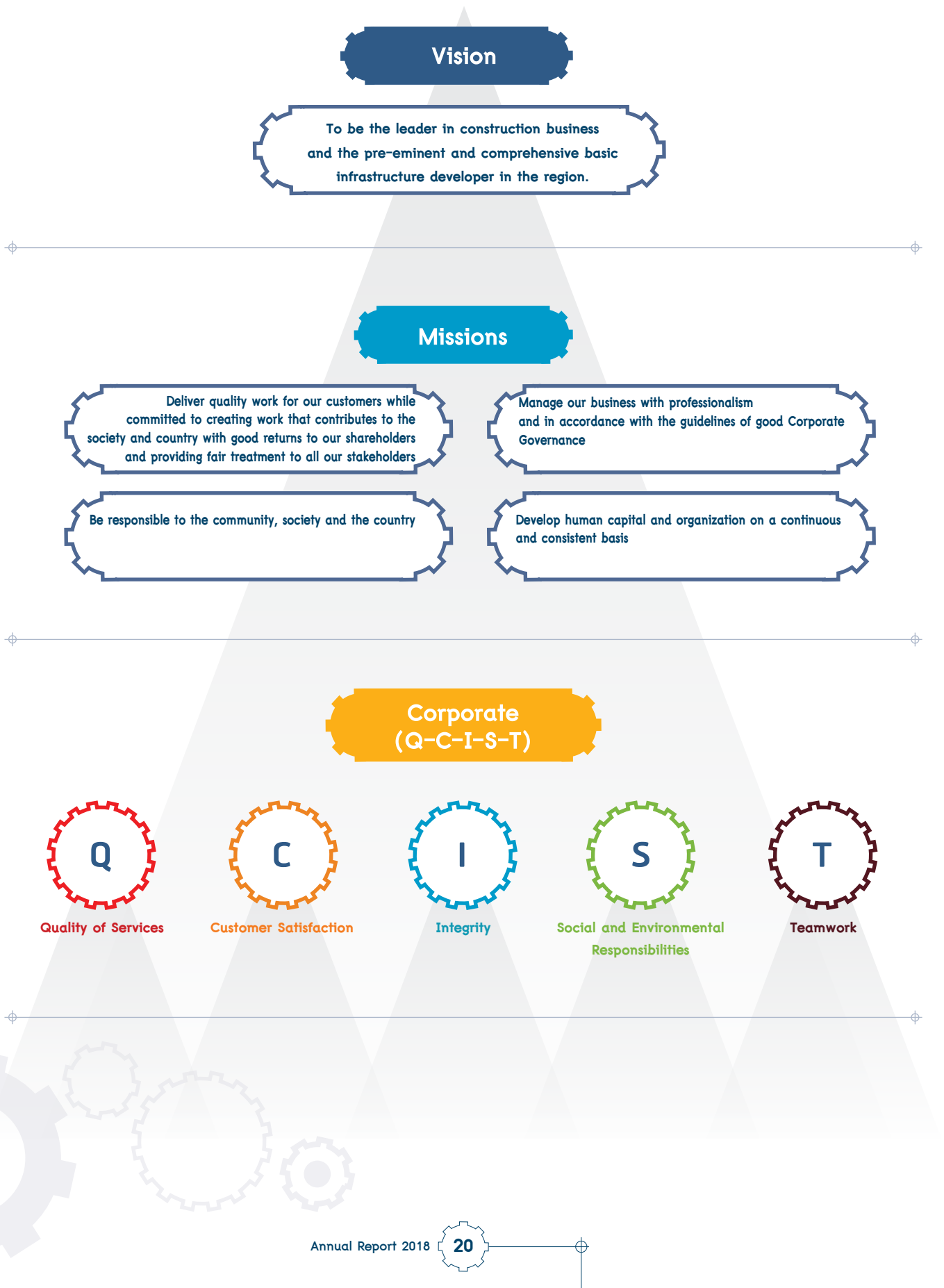
Ratchamongkhon Line Project of Bangkok Metro Public Company Limited (on December 30, 2015, Bangkok Expressway Public Company Limited amalgamated with Bangkok Metro Public Company Limited into Bangkok Expressway and Metro Public Company Limited, which operates the expressway and rail mass rapid transit services, including commercial development in connection with the expressway and metro systems; and subsequently, Bangkok Expressway and Metro Public Company Limited has been granted a concession to conduct construction and management of the Si Rat - Outer Ring Road Expressway, including provision of the operation service of the MRT Blue Line Extension Project and the MRT Chalong Ratchadham Line Project or the MRT Purple Line Project, Bang Yai - Rat Burana, Bang Yai - Bang Sue Section); investment in the Tap Water Production Project of TTW Public Company Limited for sale of tap water to the Provincial Waterworks Authority in the vicinities of Nakhon Pathom Province and Samut Sakhon Province; and investment in CK Power Public Company Limited which operates the core business as holding company in the electricity production and distribution business from energy resources of various types, namely, investment in the Hydroelectric Power Project (Nam Ngum 2) for electricity generation and distribution to the Electricity Generating Authority of Thailand, investment in the Small Power Producers (SPP), two Cogeneration Power Projects, with their respective production capacity of 117.5 MW and 120 MW, by the cogeneration system for electricity generation and distribution to the Electricity Generating Authority of Thailand and industrial operators in Bang Pa-in Industrial Estate, investment in the solar power projects for electricity generation and distribution to the Provincial Electricity Authority,

and projects in progress, such as, investment in the Xayaburi Hydroelectric Power Project for electricity generation and distribution to the Electricity Generating Authority of Thailand and the Government of the Lao People's Democratic Republic, etc. The Company's business operations in this manner demonstrate the results when the group companies whose shares are held by the Company have successfully achieved good operational results, and the Company has received returns on investment in those companies in the form of dividend, including gains on sales of investments, which generate regular income and profit for the Company.

Based on the policies and far-sighted vision in business operations, the Company is able to become a construction contractor, investor and concessionaire, which has distinguished the Company from other leading construction companies in Thailand, and generates revenues for the Company from construction services for both the government sector and the private sector, including income from investment in basic infrastructure project development business. Moreover, the Company is able to more efficiently manage risks in the construction business due to the Company's chance to initiate its own works from its roles as full-scale developer, investor, and manager of concessions. These policies and strategies in management can result in good business returns and stable growth for the Company and its group companies, which make the Company strong and distinctive, and afford an opportunity and have the potential beyond being a construction company alone. This is a prominent factor which empowers the Company to become successful in its business operations for over 45 years.

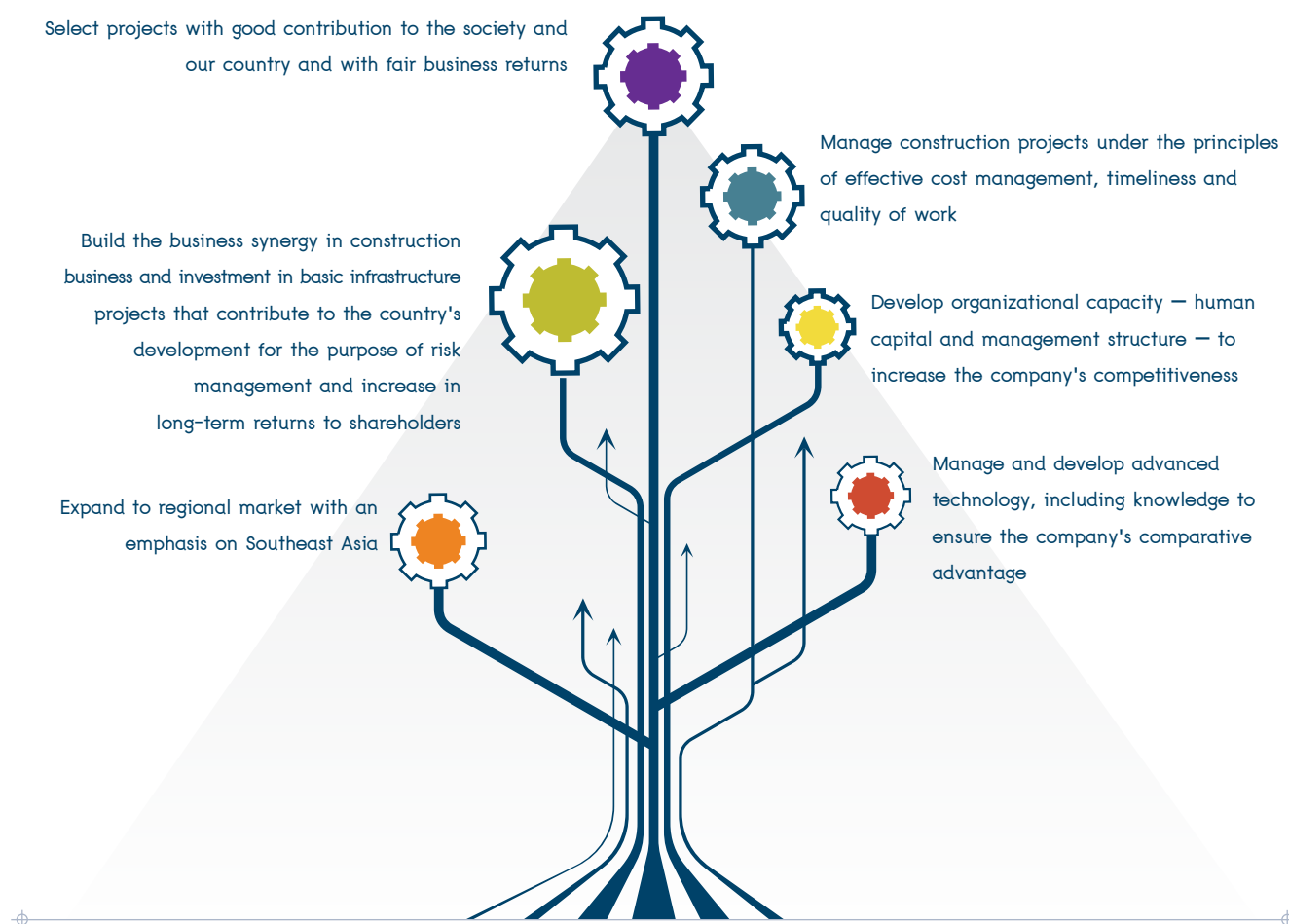
## 1.1 The Company's Overall Operational Policy

To ensure the accomplishment of the Company's operations for the utmost benefits of all stakeholders, the Company has thus adopted the operational policies subject to the principles as follows:





## Strategies: Sustainable Growth



To ensure the Company's business operations in compliance with the policies, the Company has complied with the strategies and action plans in 2018 as follows:

1. The Company carried out construction and performed various related works, with progress according to schedule;
2. The Company followed the procedures under every project agreement;
3. The Company conducted feasibility studies and made preparations for investments in various projects;
4. The Company maintained its liquidity and efficiently managed short-term and long-term investments to generate more revenues, as well as used various financial instruments for risk management, including reduction of finance cost;
5. The Company built a relationship with stakeholders through the social responsibility process and communicates to both internal and external persons for acknowledgement;
6. The Company maintained an efficient, transparent, and auditable management system subject to the good corporate governance principles, including the Quality Management System (ISO 9001), and developed the information system with updated technology to enhance performance.

## 1.2 Significant Changes and Development

According to the aforesaid business policy and overview of the Company, details of the Company's significant changes and development can be summarized as follows:

### 1972:

The Company was incorporated as a limited company with the initial registered capital of Baht 1.40 Million to engage in general construction business. Initially, the Company's scope of work covered construction of buildings and general civil works and its major clients were government agencies, such as, the Royal Thai Army and the Royal Thai Air Force. The achievements bringing reputation to the Company included, for example, the Chulachomklao Royal Military Academy, various buildings, hospitals and public utilities for the Royal Thai Army and the television station building for the Mass Communication Organization of Thailand (MCOT), etc.

### 1981:

The Company realized the need to enlarge the scope of its business operations for long-term prosperity. In this respect, the Company entered into a joint venture with Tokyu Construction Co., Ltd., one of Japan's top ten construction contractors, for the purpose of construction business and management, as well as potential business alliance.

### 1994:

The Company expanded its scope of business operations and increased the registered capital to accommodate the continued business expansion. On October 10, 1994, the Company was converted into a public limited company, resulting in an increase in its registered capital to Baht 700 Million, and then became a listed company on the Stock Exchange of Thailand on August 3, 1995.

### 1996:

The Company increased its registered capital from Baht 700 Million to Baht 1,050 Million, at which time, the Company was rapidly growing and improving its capabilities by both work management and development of human resources, as well as construction technology development through its joint ventures with foreign companies which possess expertise, e.g., Bilfinger AG from Germany, Thames Water International Limited from England. This enabled the Company to expand its scope of engagements to the point at which the Company became one of a few construction contractors which were sufficiently

well-prepared to carry out sophisticated construction requiring advanced construction technology, such as, construction of large scale infrastructure projects. The Company also developed its capabilities in terms of both engineering and management, allowing the Company to operate projects on a design and construction basis or the so-called turnkey, concession projects on a build-transfer-operate (BTO), build-operate-transfer (BOT), build-own-operate (BOO) and acquire-operate-transfer (AOT) basis, as well as other small, medium and large scale projects.

### 2004:

The Company established SouthEast Asia Energy Limited to serve as the developer of the Nam Ngum 2 Hydroelectric Power Project in the Lao People's Democratic Republic (Lao PDR).

### 2006:

The Company commenced the construction of the Nam Ngum 2 Hydroelectric Power Project, with a project value of more than Baht 22,000 Million, with a production capacity of 615 MW, for production and distribution of electricity to the Electricity Generating Authority of Thailand. This project is regarded as a source of clean and renewable energy, which is low-priced and stable; and as an international investment which helps create jobs and revenue to the Lao PDR, together with improvement of the quality of life of local people in the long run, strengthen friendship and create partnership and good investment opportunity on a national level.

### 2009:

In addition to the hydropower investment, the Company expanded its investments to other energy businesses, such as, investments in natural gas power project, thermal power technology (cogeneration), and solar power projects, etc. The Company then established Bangpa-in Cogeneration Limited for operation of the Small Power Producer (SPP) construction and management, with a production capacity of 120 MW, by the cogeneration system within Bang Pa-in Industrial Estate to generate and distribute electricity to the Electricity Generating Authority of Thailand and industrial operators in Bang Pa-in Industrial Estate.



#### 2010:

The Company established Xayaburi Power Company Limited to operate the electricity generation concession granted by the Lao PDR.

#### 2011:

The Company established Nakhon Ratchasima Solar Limited, Chiangrai Solar Limited, and Bangkhengchai Company Limited to carry out construction and operation of solar power projects to generate and distribute electricity to the Provincial Electricity Authority. Moreover, the Company established CK Power Limited as a holding company with its core business in SouthEast Asia Energy Limited, the major shareholder of the Nam Ngum 2 Hydroelectric Power Project, with the objectives for investment and shareholding in energy business, starting from its shareholding in energy business under development by the Company group. It has a vision to invest in good energy business, including alternative and clean energy, either projects initiated by the Company group or by other groups of business partners, in order to boost the business prospects in this field.

#### 2012:

The Company commenced construction of the Xayaburi Run-of-River Project, a 1,285 MW hydropower plant, with a construction project value of more than Baht 76,000 Million, for production and distribution of electricity to the Electricity Generating Authority of Thailand and the Electricit du Laos, which is expected to complete in 2019.

#### 2013:

CK Power Limited converted into a public limited company on February 6, 2013 and has been listed on the Stock Exchange of Thailand since July 18, 2013.

#### 2014:

The Company acquired 700,000 capital increase ordinary shares in Construction Material Supply Co., Ltd. (its subsidiary) according to its shareholding percentage, at the price of Baht 100 per share, totaling Baht 70 Million, to maintain its shareholding percentage in Construction Material Supply Co., Ltd. at 99.99 percent of its registered capital. Exercising of the right to subscribe for such shares caused the Company to hold 999,992 shares in Construction Material Supply Co., Ltd. or representing 99.99 percent of the total of 1,000,000 shares.

#### 2015:

The Company supported the amalgamation between Bangkok Expressway Public Company Limited (“BECL”) and

Bangkok Metro Public Company Limited (“BMCL”) since the amalgamation was considered a strategy to integrate the strengths of both companies in order to diversify services; strengthen business competitiveness and create investment opportunities in the future; and promote image of securities of the new company from the amalgamation. The Joint Shareholders’ Meeting between shareholders of Bangkok Metro Public Company Limited and shareholders of Bangkok Expressway Public Company Limited resolved to approve various matters of the new company from the amalgamation as stipulated by the Public Limited Companies Act B.E. 2535 (1992) and its amendments. In this regard, the public limited company registrar, Department of Business Development, Ministry of Commerce, accepted the registration of the amalgamation on December 30, 2015, and as a result, Bangkok Metro Public Company Limited and Bangkok Expressway Public Company Limited became defunct and amalgamated into Bangkok Expressway and Metro Public Company Limited or BEM, with its registered and paid-up capital equal to Baht 15,285,000,000, divided into a total of 15,285,000,000 ordinary shares, at the par value of Baht One per share. Therefore, such new company has assumed all assets, debts, rights, duties and responsibilities of Bangkok Metro Public Company Limited and Bangkok Expressway Public Company Limited by operation of law from the date of the public limited company registrar’s acceptance of registration of the amalgamation onwards.

#### 2017:

CH. Karnchang Real Estate Co., Ltd., as the Company’s subsidiary, jointly invested with other persons and/or legal entities which had no connection with the Company, by signing the shareholders’ agreement to become a shareholder in Kamala Senior Living Co., Ltd., a newly registered company (by having its shareholding proportion representing 20 percent of the paid-up capital of the joint investment company), with a purpose for development and management of the elderly luxury residential project located at Tambon Kamala, Amphoe Kathu, Phuket Province, which is the elderly residential project fully equipped with various facilities and services for the elderly. The initial registered capital of such company is Baht 1,000,000 (One Million Baht), divided into 100,000 ordinary shares (one hundred thousand shares), at the par value of Baht 10 (Ten Baht) per share, and its registered capital will be increased as it deems necessary and in line with its business operation plan.

## Significant Changes in 2018

### 1. On February 9, 2018,

the Company signed the agreement for management of construction and improvement of administrative building in the area of Depot in Huai Khwang and supply, installation of the M&E Systems (Additional) of the MRT Blue Line Extension Project with Bangkok Expressway and Metro Public Company Limited. This was deemed to be a part (additional work) of the Agreement for the Project Management, Supply and Installation of the M&E Systems for the MRT Blue Line Extension Project (Phase 1) (VARIATION ORDER NO.1 Variation Works under the M&E Equipment Procurement, Construction and Management Contract), for the operation period of approximately 810 days and with the estimated contract value of Baht 558,472,600, exclusive value added tax.

### 2. On July 3, 2018,

CKCH Joint Venture, composing of CH. Karnchang Public Company Limited and Ch.Thavee Construction Co., Ltd., signed the Supplementary Agreement No.1 for Double Track Railroad Construction Project, Chira Junction - Khon Kaen Section, with the State Railway of Thailand for the construction of altered railway work under the design in the area of Ban Phai railway station from high embankment under the existing design by the agreement to elevated structures, for the operation period of approximately 12 months and with the total additional contract value of Baht 896,000,000, including value added tax.

### 3. On July 12, 2018,

the Company signed the agreement for construction of the project for development of ditches along Vibhavadi Rangsit Road (Phase 1), Highway No. 31, connecting to Phaholyothin Road, Highway No. 1, between km.4+990 - km.28+700, with Office of Highways 13 (Bangkok), the Department of Highways, for the operation period of approximately eight months and with the estimated contract value of Baht 296,700,000, including value added tax.

### 4. On July 12, 2018,

the Company signed as the contractor in the Variation Order No. 2 to Design, Supply, Install and Test the Telecommunications Network System (Integrated Radio Distribution Network System to support all Mobile Phone Operators in Thailand to provide both voice and data services, as well as accommodating frequencies, technology or new mobile phone operators in the future) in undergrounded areas of four MRT stations for the MRT Blue Line Extension Project, namely, Wat Mangkon Station, Sam Yod Station, Sanam Chai Station, and Itsaraphap Station, (Variation Order No.2 Provision of Integrated Radio Distribution Network (IRDN)) with Bangkok Expressway and Metro Public Company Limited as the Employer. This was deemed to be a part (additional work) of the Agreement for the Project Management, Supply and Installation of the M&E Systems for the MRT Blue Line Extension Project, for the operation period of approximately 12 months and with the estimated contract value of Baht 248,565,440.18, excluding value added tax.

### 5. On July 12, 2018,

the Company signed the agreement for acceleration of the opening of operation service of the MRT Blue Line Extension Project, divided into 3 sections, i.e., Hua Lamphong Station - Lak Song Station Section, Tao Poon Station - Sirindhorn Station Section, and Sirindhorn Station - Tha Phra Station Section (Variation Order No.3 Acceleration of the Works) with Bangkok Expressway and Metro Public Company Limited. This was deemed to be a part (additional work) of the Agreement for the Project Management, Supply and Installation of the M&E Systems for the MRT Blue Line Extension Project, for the operation periods/completion on August 14, 2019 for Hua Lamphong Station - Lak Song Station Section; on December 25, 2019 for Tao Poon Station - Sirindhorn Station Section; and on March 2, 2020 for Sirindhorn Station - Tha Phra Station Section, with the estimated contract value of Baht 650,000,000, excluding value added tax.

#### **6. On August 17, 2018,**

the Company signed the agreement for the repair of the structure of the Si Rat Expressway, Period 4, Phase 2, in respect of Sector C (Prachachuen - Chaeng Watthana) and certain part of Sector B (Urupong - Phayathai), with Bangkok Expressway and Metro Public Company Limited, for the operation period of approximately 12 months and with the estimated contract value of Baht 31,920,642, excluding value added tax.

#### **7. On August 29, 2018,**

the Company signed the Memorandum of Amendment Agreement (No. 1) for the Project Management Agreement for Civil Infrastructure and Electrical and Mechanical Systems Maintenance of the MRT Blue Line Project (the MRT Chaloem Ratchamongkhon Line) with Bangkok Expressway and Metro Public Company Limited, to increase the scope of works, as follows:

- (1) Maintenance Services on Civil Infrastructure and Electrical and Mechanical Systems of the MRT Blue Line Extension Project in addition to the Project Management Agreement for Civil Infrastructure and Electrical and Mechanical Systems Maintenance of the MRT Blue Line Project (the MRT Chaloem Ratchamongkhon Line), with the value of approximately Baht 1,446,700,000, excluding value added tax.
- (2) Time extension for the maintenance services on Civil Infrastructure and Electrical and Mechanical Systems of the MRT Blue Line Extension Project (the MRT Chaloem Ratchamongkhon Line) under the scope of responsibilities in accordance with the Project Management Agreement, to simultaneously complete with the Project Management Agreement for Civil Infrastructure and Electrical and Mechanical Systems Maintenance of the MRT Blue Line Extension Project, with the value of approximately Baht 740,000,000, excluding value added tax.

- (3) Improvement and replacement of the E&M Systems of the existing MRT Blue Line Project (the MRT Chaloem Ratchamongkhon Line) which have expired under the design, with the value of approximately Baht 591,000,000, excluding value added tax.

The completion periods were scheduled for in and around March 2027 for works per (1) and (2); and in and around December 2024 for works per (3), with the total contract value of approximately Baht 2,777,700,000, excluding value added tax.

#### **8. On September 4, 2018,**

the Company signed the agreement for gas distribution system relocation of Pathum Thani - Phaya Thai Project by the side of Vibhavadi Rangsit Road with PTT Public Company Limited, for the operation period of approximately 90 days and with the estimated contract value of Baht 26,540,000, excluding value added tax.

#### **9. On October 9, 2018,**

CKST Joint Venture (CH. Karnchang Public Company Limited and Sino-Thai Engineering and Construction Public Company Limited) signed the Construction Contract of Underground Manholes and Duct Banks in conjunction with the MRT Orange Line Project, Thailand Cultural Centre - Min Buri (Suwinthawong) Section: Contract 1 of Mass Rapid Transit Authority of Thailand, and the Construction Contract of Underground Manholes and Duct Banks in conjunction with the MRT Orange Line Project, Thailand Cultural Centre - Min Buri (Suwinthawong) Section: Contract 2 of Mass Rapid Transit Authority of Thailand with Metropolitan Electricity Authority, for the operation period of approximately 1,420 days, and with the work value under the Contract 1 of approximately Baht 64,765,633.41, excluding value added tax, and the work value under the Contract 2 of approximately Baht 398,373,306.42, excluding value added tax.

## 1.3 Shareholding Structure of Company Group

### 1.3.1 Policy on Business Grouping among Companies in the Group

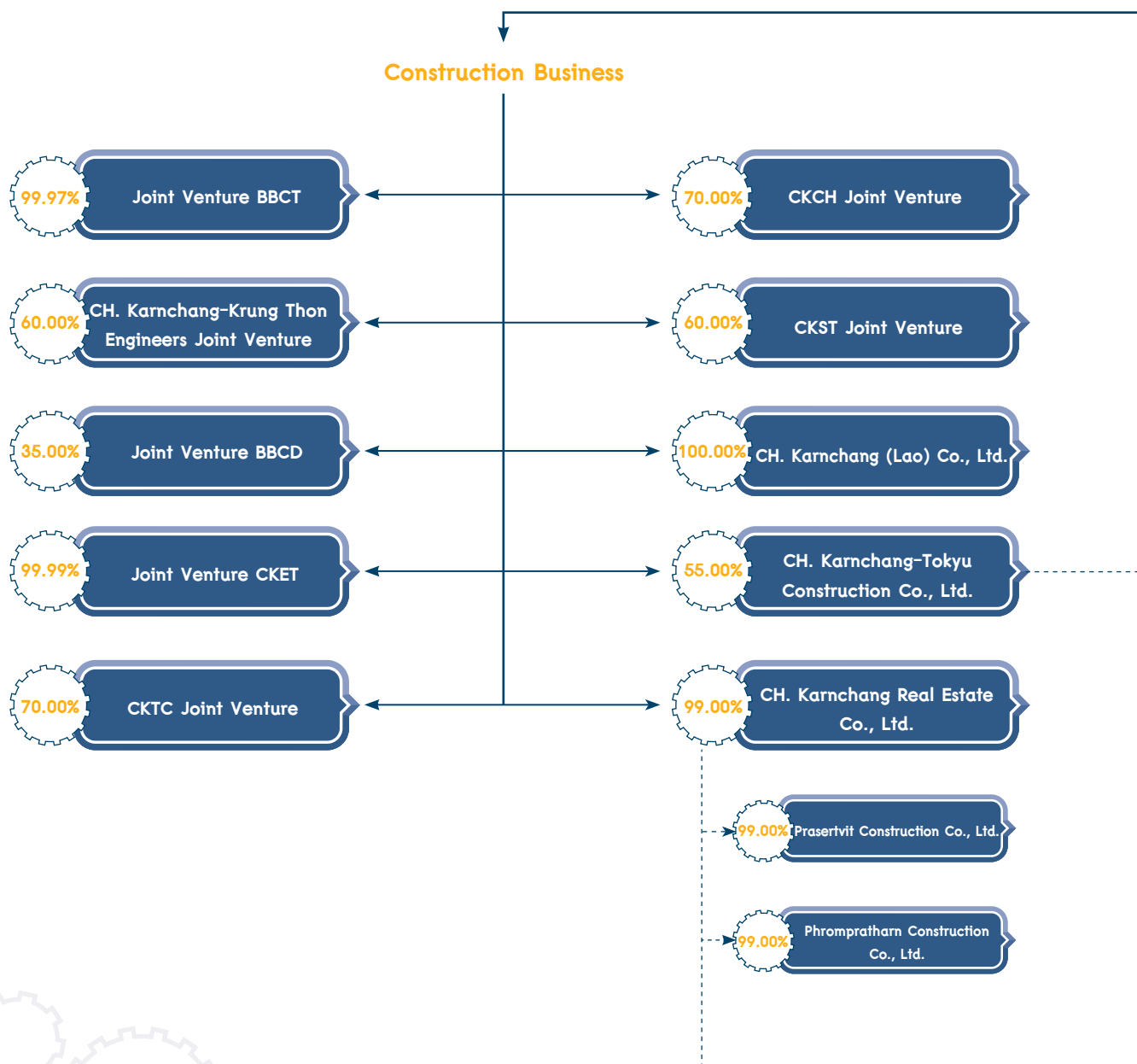
The business operations of group companies are divided into two categories as follows:

- 1) Construction Business; and 2) Infrastructure Investment;

### 1.3.2 Information on Shareholding Structure of Company Group

Business Operations of the Company, Subsidiaries, Associated Companies and Related Companies, divided into

Organization Chart of CH. Karnchang Public Company Limited  
(As at December 31, 2018)







## Details of Business Operations of the Company, Subsidiaries, Associated Companies, Related Companies and Joint Ventures

### Construction Business

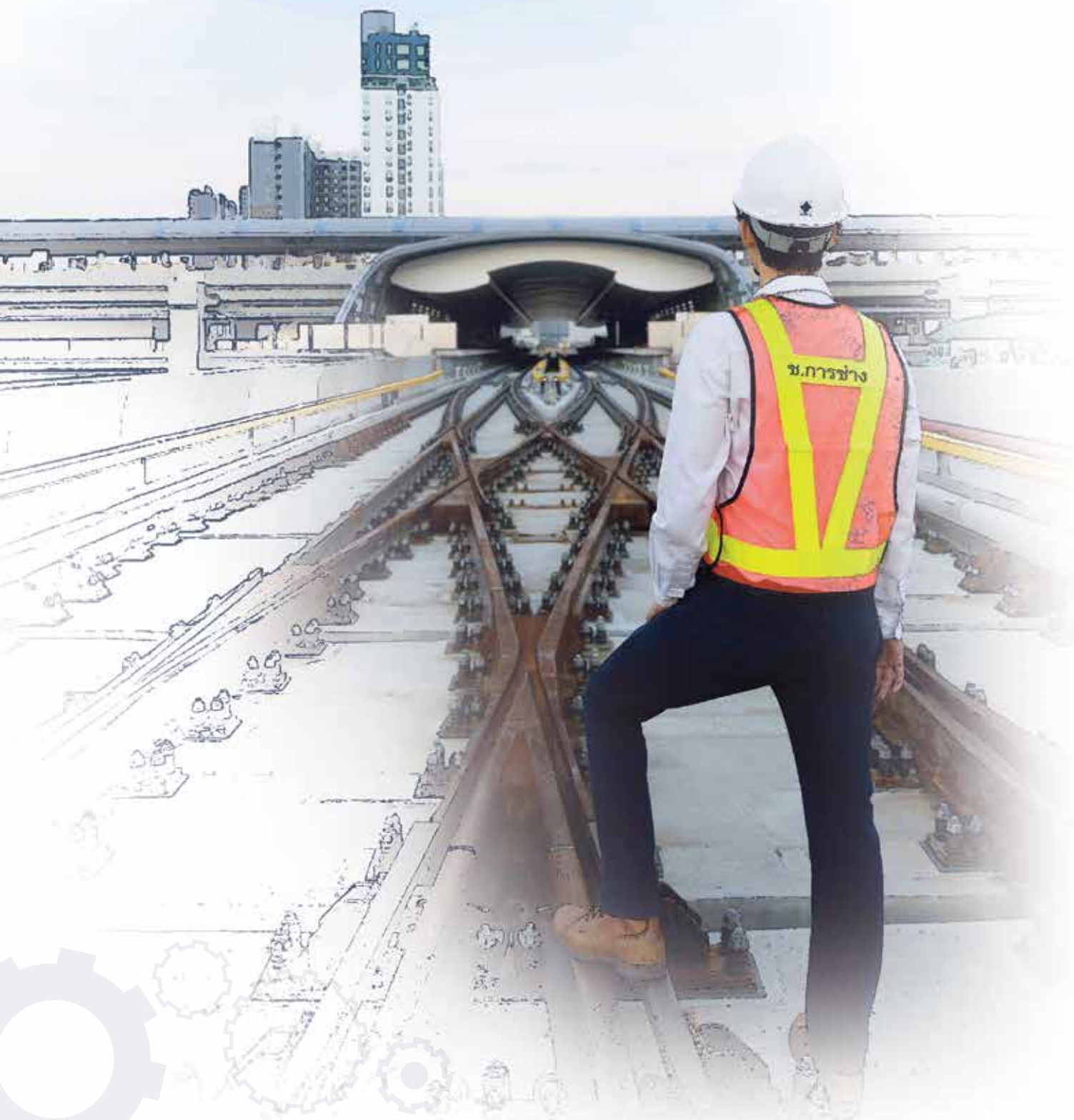
| Joint Venture/Company Name  | Shareholding Ratio  | Nature of Work  |
|---|---|---|
| 1. CH. Karnchang (Lao) Co., Ltd.  | 100.00%   | Construction of the Nam Ngum 2 Hydroelectric Power Project and the Xayaburi Hydroelectric Power Project   |
| 2. CH. Karnchang Real Estate Co., Ltd.  | 99.00%  | Trading of Land, Allocation of Land and Residential Buildings   |
| 3. Phrompratharn Construction Co., Ltd.   | 99.00% of shares held by CH. Karnchang Real Estate Co., Ltd.        | Construction  |
| 4. Prasertvit Construction Co., Ltd.  | 99.00% of shares held by CH. Karnchang Real Estate Co., Ltd.        | Construction  |
| 5. Kamala Senior Living Co., Ltd.   | 20.00% of shares held by CH. Karnchang Real Estate Co., Ltd.        | Development and management of the elderly residential project located at Tambon Kamala, Amphoe Kathu, Phuket Province   |
| 6. CH. Karnchang-Tokyu Construction Co., Ltd.   | 55.00%  | Construction of All Kinds   |
| 7. JR Kyushu Capital Management (Thailand) Co., Ltd.  | 17.00% of shares held by CH. Karnchang-Tokyu Construction Co., Ltd. | Holding Company by holding shares in other companies engaging in businesses of hotels and serviced apartments for rent  |
| 8. Joint Venture BBCT<br>comprising CH. Karnchang Public Company Limited, Bilfinger + Berger Bauaktiengesellschaft, Tokyu Construction Co., Ltd. and CH. Karnchang-Tokyu Construction Co., Ltd. | 99.97%  | (Sectors D and C1A)<br>Construction of the Second Stage Expressway, Sector C+, Chaeng Watthana - Bang Phun - Bang Sai, Sector D, Asoke - Srinagarindra, and Sector C1A, Ngam Wong Wan - Chaeng Watthana   |
| 9. Joint Venture CKET<br>comprising CH. Karnchang Public Company Limited and Expert Transport Co., Ltd.   | 99.99%  | Project Operation and Management under the Agreement for Concession for Design, Manufacture, Delivery, Installation, Testing and Commissioning of M&E Equipment and for Operation and Maintenance of the MRTA Initial System, Chaloem Ratchamongkhon Line         |
| 10. CKTC Joint Venture<br>comprising CH. Karnchang Public Company Limited and Tokyu Construction Co., Ltd.  | 70.00%  | Operations for Construction Project of the MRT Purple Line, Bang Yai - Rat Burana, Bang Yai - Bang Sue Section; Contract 1: Elevated Structures (East)  |
| 11. CH. Karnchang-Krung Thon Engineers Joint Venture<br>comprising CH. Karnchang Public Company Limited and Krung Thon Engineers Company Limited  | 60.00%  | Operations for Construction of Phra Ong Chao Chaiyanuchit Canal Conduit System - Bang Phra Reservoir and Appurtenant Structures Contract 1 Project, Project for Diversion of Water from Eastern Chao Phraya River Basin - Bang Phra Reservoir, Chon Buri Province |
| 12. Joint Venture BBCD<br>comprising Bilfinger + Berger AG, CH. Karnchang Public Company Limited and Walter Bau AG  | 35.00%  | Construction of the (Bang Na - Bang Pli - Bang Pakong) Expressway   |
| 13. CKCH Joint Venture<br>comprising CH. Karnchang Public Company Limited and Ch. Thavee Construction Co., Ltd.   | 70.00%  | Construction of Double Track Railroad, Chira Junction - Khon Kaen Section   |
| 14. CKST Joint Venture<br>comprising CH. Karnchang Public Company Limited and Sino-Thai Engineering & Construction Public Company Limited   | 60.00%  | Construction of the MRT Orange Line Project (East Section), Thailand Cultural Centre - Min Buri Section, Contracts 1, 2 and 5   |

## Infrastructure Investment

| Joint Venture/Company Name                             | Shareholding Ratio  | Nature of Work  |
|--|---|---|
| 1. Bangkok Expressway and Metro Public Company Limited | 30.89%  | Expressway and Metro Services, including Commercial Development in connection with the Metro and Expressway Systems   |
| 2. Northern Bangkok Expressway Company Limited         | 99.99% of shares held by Bangkok Expressway and Metro Public Company Limited                                  | Construction and Management of the Udon Rattaya Expressway  |
| 3. Bangkok Metro Networks Limited                      | 69.67% of shares held by Bangkok Expressway and Metro Public Company Limited                                  | Commercial Development Business   |
| 4. TTW Public Company Limited                          | 19.40%  | Tap Water Production and Distribution for the Provincial Waterworks Authority in Nakhon Pathom Province and Samut Sakhon Province   |
| 5. Pathum Thani Water Co., Ltd.                        | 98.00% of shares held by TTW Public Company Limited   | Tap Water Production and Distribution in Pathum Thani and Rangsit   |
| 6. Thai Water Operations Co., Ltd.                     | 68.50% of shares held by TTW Public Company Limited and 31.50% of shares held by Pathum Thani Water Co., Ltd. | Administration and Management of Tap Water Production and Distribution Systems and Wastewater Treatment System  |
| 7. CK Power Public Company Limited                     | 27.22%  | Holding Company by holding shares in other companies engaging in electricity production and distribution businesses   |
| 8. Bangpa-in Cogeneration Limited                      | 65.00% of shares held by CK Power Public Company Limited  | Construction and Management of Two Cogeneration Power Projects for Production of Electricity and Steam, namely, BIC 1 with the production capacity of 117.5 MW for electricity and that of 20 tons per hour for steam; and BIC 2 with the production capacity of 120 MW within Bang Pa-in Industrial Estate to generate and distribute electricity to EGAT and industrial operators in Bang Pa-in Industrial Estate |
| 9. Xayaburi Power Company Limited                      | 37.50% of shares held by CK Power Public Company Limited  | Construction and Operation of the Xayaburi Hydroelectric Power Project  |
| 10. Nakhon Ratchasima Solar Limited                    | 30.00% of shares held by CK Power Public Company Limited  | Construction and Operation of the Project for Electricity Generation by Solar Energy, with a production capacity of 6 MW, to generate and distribute electricity to the Provincial Electricity Authority (PEA)  |
| 11. Chiangrai Solar Limited                            | 30.00% of shares held by CK Power Public Company Limited  | Construction and Operation of the Project for Electricity Generation by Solar Energy, with a production capacity of 8 MW, to generate and distribute electricity to PEA   |
| 12. Bangkhenchai Company Limited                       | 99.99% of shares held by CK Power Public Company Limited  | Construction and Operation of the Project for Electricity Generation by Solar Energy, with a production capacity of 8 MW, to generate and distribute electricity to PEA   |
| 13. SouthEast Asia Energy Limited                      | 56.00% of shares held by CK Power Public Company Limited  | Investment and Development of Power Production Business in the Lao People's Democratic Republic (Lao PDR)   |
| 14. Nam Ngum 2 Power Company Limited                   | 75.00% of shares held by SouthEast Asia Energy Limited  | Production and Distribution of Electricity from the Hydroelectric Power Project, as the concessionaire from the government of the Lao PDR under the concession for the Nam Ngum 2 Hydroelectric Power Project, with a production capacity of 615 MW   |

## 1.4 Relationship with Business Group of Major Shareholders

The Company's core business operations have no material relationship or connection with other business operations of the major shareholders.





## 2. Nature of Business Operations



CH. Karnchang Public Company Limited is operating the primary business of construction by accepting engagements from government agencies, state enterprises and private entities, in the form of main contractor or sub-contractor, and in collaboration with foreign contractor companies in the form of joint ventures for construction projects which cannot be separated into work portions or volumes for the respective joint venture members. Each joint venture member is responsible for profit or loss in accordance with the ratio as agreed upon in respect of every work portion. The joint investment may also be in the form of consortium, in case such construction project can be separated into work portions and volumes for the respective members who shall be independently responsible for profit or

loss. The works of this nature are mostly various projects of the government.

Based on the vision and policy, the Company focuses on personnel development for enhancement of management potential and for business expansion to ensure the Company's sustainable growth, opportunities and superior capabilities beyond being a construction company alone. The Company has thus invested in regional, comprehensive infrastructure project development business, currently, including transportation system, mass rapid transit system, water infrastructure system, energy system, etc. Details of both business operations are as follows:



### 1) Construction Business

The construction business operations of the Company, its subsidiaries and joint ventures can be divided into two natures, namely:

#### (A) Main Contractor:

The Company directly submits proposals in its own name, as contractor through bidding process or negotiation, to project owners. In case of a large-scale project, which requires specialized foreign companies for joint operation, the Company submits proposals in cooperation with specialized foreign companies in accordance with the requirements of the project owners. In the acceptance of projects in this manner, the Company does not solely carry out the entire construction work, but subcontracts parts of such work. In the nomination of sub-contractor(s), the Company takes into account the creditability and previous achievements of the sub-contractors, without reliance upon or adherence to any particular sub-contractor.

#### (B) Sub-contractor:

The Company accepts work from other contractors that were awarded the work directly from project owners. The work of this nature would mostly be related to the production process utilizing large sized and sophisticated machinery, usually operated by foreign companies, and requiring construction contractors with various capabilities and fields of experience. A single main contractor does not have adequate experience and skills to proceed with all steps of the work. In this respect, the Company would consider accepting engagement as sub-contractor from main contractors with reputation and good financial standing only, and would accept parts of such subcontract work by taking into account the Company's sufficient capabilities. Such work of this nature allows the Company to have the opportunity to accept transfer of technology in respect of engineering, production process and management, as well as business alliance with sufficient capability and readiness to carry out large-scale projects which require more advanced technology in the future.



## 2) Infrastructure Investment

In addition to the construction business, the Company also has invested in regional, comprehensive infrastructure project development business, currently, including transportation system, mass rapid transit system, water infrastructure system, and energy system. These projects are differently carried out in the form of build-operate-transfer (BOT) or build-transfer-operate (BTO) or build-own-operate (BOO) or acquire-operate-transfer (AOT), etc. For such projects, with a long concession period and high valued investments, the Company establishes associated companies and related companies to carry out various

arrangements, e.g., Bangkok Expressway and Metro Public Company Limited (incorporated by the amalgamation between Bangkok Metro Public Company Limited, the concessionaire for the MRTA Initial System Project, Chaloem Ratchamongkhon Line and Bangkok Expressway Public Company Limited, the concessionaire for the Second Stage Expressway and extension projects), etc.

Based on the said manner of the infrastructure investment, the definition of each respective form can be described below.

**Build-Operate-Transfer (BOT):** *Private entity shall be granted the right under a concession agreement from the government for investment in construction and implementation to derive returns within a specified period and during the implementation, the ownership of the property shall remain vested in the private entity. After the end of the concession period, the ownership of the invested property shall be transferred to the government in consideration of the grant of the concession. Examples for projects of this nature are Pathum Thani Water Co., Ltd., which has a concession period of 25 years, SouthEast Asia Energy Limited, which has a concession period of 25 years, and Xayaburi Power Company Limited, which has a concession period of 31 years.*

**Build-Own-Operate (BOO):** *Private entity shall carry out construction and management by its own investment. The ownership of the invested property is vested in the private entity. However, the private entity shall have an agreement with the government to guarantee revenue on a long term basis, whereby the government agency shall purchase goods during the term of the agreement and upon expiration of the concession period, such property shall remain vested in the investing company. An example for a project of this nature is TTW Public Company Limited, which has a concession period of 30 years.*

**Build-Transfer-Operate (BTO):** *Private entity shall carry out the design, investment and construction of property, the ownership of which shall be transferred to the government immediately after the construction completion. The private entity shall be granted the right to utilize such invested property under the concession agreement to derive returns within a specified period. During the period the Company is still entitled to utilize such property under the concession period, the Company records such property in the form of the right to utilize, which is amortized throughout the concession period. An example for a project of this nature is Bangkok Expressway and Metro Public Company Limited, which has a concession period of 30 years.*

**Acquire-Operate-Transfer (AOT):** *In the concession of this nature, private entity shall be granted the concession right from the government and the private entity shall acquire property as its own assets. The private entity shall then be entitled to operate the project to derive returns within a specified period as agreed upon with the government. After the end of the concession agreement, the ownership of the property invested by the private entity shall be transferred to the government. An example for a project of this nature is the MRTA Initial System Project, Chaloem Ratchamongkhon Line, of Bangkok Expressway and Metro Public Company Limited, which has a concession period of 25 years.*



## Engagement Ratio of CH. Karnchang Public Company Limited and its Subsidiaries Based on Engagement

Unit: Million Baht

| Value of Work  | 2015             |               | 2016             |               | 2017             |               | 2018             |               |
|--|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
|  | Million Baht     | %             | Million Baht     | %             | Million Baht     | %             | Million Baht     | %             |
| (Main Contractor)  | 34,814.59        | 91.55         | 45,705.06        | 97.20         | 35,899.69        | 95.15         | 29,292.30        | 93.96         |
| (Sub-contractor)   | 0.00             | 0.00          | 0.00             | 0.00          | 0.00             | 0.00          | 0.00             | 0.00          |
| Other Income (project management income, dividend, etc.) | 3,213.16         | 8.45          | 1,314.48         | 2.80          | 1,830.99         | 4.85          | 1,883.27         | 6.04          |
| <b>Total</b>   | <b>38,027.75</b> | <b>100.00</b> | <b>47,019.54</b> | <b>100.00</b> | <b>37,730.68</b> | <b>100.00</b> | <b>31,175.57</b> | <b>100.00</b> |

## Revenue Structure (Consolidated Financial Statements)

Unit: Million Baht

| Products  | Operated by                                      | % Share holding of the Company | 2015             |               | 2016             |               | 2017             |               | 2018             |               |
|---|--|--------------------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
|   |  |                                | Revenues         | %             | Revenues         | %             | Revenues         | %             | Revenues         | %             |
| <b>Revenues from Construction Services</b>                        | CH. Karnchang Public Company Limited             | -                              | 23,544.90        | 61.92         | 17,179.81        | 36.54         | 12,718.49        | 33.71         | 10,916.31        | 35.02         |
|   | CH. Karnchang (Lao) Co., Ltd.                    | 100.00                         | 8,834.06         | 23.23         | 24,181.04        | 51.42         | 14,252.18        | 37.77         | 6,281.59         | 20.15         |
|   | CH. Karnchang-Tokyu Construction Co., Ltd.       | 55.00                          | 2,400.98         | 6.31          | 1,948.82         | 4.14          | 2,807.85         | 7.44          | 1,216.34         | 3.90          |
|   | CKTC Joint Venture                               | 70.00                          | 5.49             | 0.01          | 79.13            | 0.17          | 16.89            | 0.05          | 9.26             | 0.03          |
|   | CKCH Joint Venture                               | 70.00                          | -                | -             | 2,313.73         | 4.92          | 5,205.42         | 13.80         | 6,456.78         | 20.71         |
|   | CH. Karnchang-Krung Thon Engineers Joint Venture | 60.00                          | 29.16            | 0.08          | 2.54             | 0.01          | -                | -             | -                | -             |
|   | CKST Joint Venture                               | 60.00                          | -                | -             | -                | -             | 898.86           | 2.38          | 4,412.02         | 14.15         |
| <b>Total Revenues from Construction Services</b>                  |  |                                | <b>34,814.59</b> | <b>91.55</b>  | <b>45,705.06</b> | <b>97.20</b>  | <b>35,899.69</b> | <b>95.15</b>  | <b>29,292.30</b> | <b>93.96</b>  |
| <b>Construction Revenue from Public Sector</b>                    |  |                                | <b>6,360.09</b>  | <b>18.27</b>  | <b>6,525.10</b>  | <b>14.28</b>  | <b>10,793.59</b> | <b>30.07</b>  | <b>13,926.98</b> | <b>47.54</b>  |
| <b>Construction Revenue from Private Sector</b>                   |  |                                | <b>28,454.50</b> | <b>81.73</b>  | <b>39,179.96</b> | <b>85.72</b>  | <b>25,106.10</b> | <b>69.93</b>  | <b>15,365.32</b> | <b>52.46</b>  |
| <b>Revenue from Sales of Construction Materials</b>               | Construction Material Supply Co., Ltd.           | 99.99                          | 32.35            | 0.09          | 62.75            | 0.13          | 22.00            | 0.06          | -                | -             |
|   | CKCH Joint Venture                               | 70.00                          | -                | -             | -                | -             | 1.00             | 0.00          | 3.50             | 0.01          |
|   | CKST Joint Venture                               | 60.00                          | -                | -             | -                | -             | 0.12             | 0.00          | 0.14             | 0.00          |
|   | CH. Karnchang (Lao) Co., Ltd.                    | 100.00                         | -                | -             | -                | -             | -                | -             | -                | -             |
|   | CKTC Joint Venture                               | 70.00                          | -                | -             | 0.47             | 0.00          | -                | -             | -                | -             |
| <b>Total Revenue from Sales of Construction Materials</b>         |  |                                | <b>32.35</b>     | <b>0.09</b>   | <b>63.22</b>     | <b>0.13</b>   | <b>23.12</b>     | <b>0.06</b>   | <b>3.64</b>      | <b>0.01</b>   |
| Interest Income   |  |                                | 56.59            | 0.15          | 355.42           | 0.76          | 738.05           | 1.96          | 816.48           | 2.62          |
| Dividend Income and Prot Sharing from Jointly Controlled Entities |  |                                | 900.90           | 2.37          | 464.63           | 0.99          | 464.64           | 1.23          | 464.71           | 1.49          |
| Other Income <sup>(1)</sup>                                       |  |                                | 2,223.32         | 5.84          | 431.21           | 0.92          | 605.18           | 1.60          | 598.44           | 1.92          |
| <b>TOTAL <sup>(2)</sup></b>                                       |  |                                | <b>38,027.75</b> | <b>100.00</b> | <b>47,019.54</b> | <b>100.00</b> | <b>37,730.68</b> | <b>100.00</b> | <b>31,175.57</b> | <b>100.00</b> |

Remarks <sup>(1)</sup> Other income comprises profit sharing from jointly controlled entities and dividend income, gain on sales of investments in subsidiaries and associated companies, reversal of provision for loss on investments in joint ventures, revenue from waiver of accrued interest payable, reversal of provision for doubtful debts, gain on exchange, miscellaneous income, etc.


<sup>(2)</sup> The figures of revenue from the respective companies as indicated in the foregoing table have been net of connected transactions.

## 2.1 Description of Products and Services

### 2.1.1 Construction Business

The Company has experience and expertise in engineering and construction of all categories, such as, infrastructure construction work, e.g., roads, bridges, elevated roads, expressways, building and industrial factory construction work, or mechanical and electrical equipment work, namely, installation of equipment and machinery for various factories, etc. Considering the previous revenue structure and present projects, the construction may be divided into four primary categories as follows:

1. Building construction work can be divided into two major categories, namely, medium and high level buildings, with a height of 15 or more stories. The building construction work comprises three major systems, i.e., structure, interior and exterior designs, and system work, including electricity, water supply, air-conditioning, elevator, drainage and fire extinguishing systems. Furthermore, the Company also improves the efficiency and expands the capabilities of the Company in turnkey construction projects. In this regard, the Company shall be responsible for the design and construction of the structural system, decoration as well as the entire system work for the project owner or employer in accordance with the design and period as agreed upon in the contract. The policy to enhance the capabilities for such turnkey projects allows the Company's customers to obtain full scale services.
2. Road, national highway and other roadwork construction comprise the country's basic infrastructure work owned by the government to accommodate the expansion of the national economy in the future. In the past, various government infrastructure services have not yet grown in line with the private sector requirements, thereby resulting in the increased expansion of the national highway system, as evidenced by a number of new projects, such as, traffic lane expansion projects, interchange construction projects, etc. In this regard, the Company also foresees a good trend for construction work of such nature, therefore, the Company has developed its capabilities and competition strategies to the extent that the Company has presently become one of the leading company groups in the construction of such special highways as construction of expressway projects and elevated roads, etc.
3. Infrastructure construction work involves the development of the national infrastructure system, which was included in the National Economic Development Plan No. 7 (1992-1996) and continued in the National Economic Development Plans No. 8 (1997-2001), No. 9 (2002-2006), No. 10 (2007-2011), No. 11 (2012-2016), and No. 12 (2017-2021). In addition, the Office of the National Economic and Social Development Council (NESDC) formulated the 20-Year National Strategy Framework (2017- 2036), as the master plan of the national development with the Sustainable Development Goals (SDGs), as well as the national reforms in line with the Thailand 4.0 Policy, divided into 6 primary strategies, comprising:
  - (1) Strategy for national security;
  - (2) Strategy for underpinning competitiveness;
  - (3) Strategy for competency development and enhancement of teachers;
  - (4) Strategy for creating equitable and fair society;
  - (5) Strategy for environmentally-friendly growth;
  - (6) Strategy for balancing and development of public administration system.



Investment in development of infrastructure and logistics referring to development of infrastructure in the fields of transportation, support of development of transportation system, development of logistics, development of energy, development of digital economy-information technology system, and research and development of tap water system, are part of the strategy for underpinning competitiveness. In this connection, the Company always plays a role in collaboration with the public sector for investment in the expansion of infrastructure system, which serves as a fundamental requirement to the national development. The development of various infrastructure systems may be divided into such categories as transportation, energy, communications, water system and other infrastructure systems. With the long experience and work achievements of the Company, the Company always has advantages and opportunities to accept a variety of infrastructure construction projects.

4. Such construction which could not be categorized comprises other construction work outside of the foregoing categories, namely, medium to small-sized construction projects, which, due to the Company's experience and previous quality performance, were awarded to the Company, e.g., project for land improvement phase 1 in Suvarnabhumi Airport, the Ground Improvement for the 1<sup>st</sup> Midfield Satellite Aprons and the 3<sup>rd</sup> Runway Project of New Bangkok International Airport Company Limited, the Construction of Drainage Canal and Road with Facilities Phase 1 Project, Drainage System Project in Suvarnabhumi Airport, Samut Prakan Province, and the Construction of Phra Ong Chao Chaiyanuchit Canal Conduit System - Bang Phra Reservoir and Appurtenant Structures Contract 1 Project, etc.

In the participation in the bidding for government construction works, bidders are generally required to complete the registration as permitted contractors prior to participating in any bidding for projects of such government agencies as the Department of Highways, the Department of Royal Irrigation, etc. The registration of contractors also involves the rating of the capabilities of the respective contractors to identify the size of projects in which these contractors would be qualified to participate. At present, the Company has already registered as contractor with various agencies and is rated as type 1 contractor. As for the initial qualifications for such registration, the government agencies shall take into account three primary requirements, namely, experience and achievements; financial position; including the number and qualifications of personnel. The government agencies generally categorize the preliminary qualifications into five levels, and each level shall be eligible to submit bids for construction at different project values. However, when the Company is rated as type 1 contractor, the Company is then eligible to bid for all types of projects. In the past, the Company has not been restricted to participate in bidding for various construction projects since the Company is fully qualified under the requirements in all respects.

### 2.1.2 Infrastructure Investment

The Company has invested in infrastructure project development business by participating in bidding for various concession projects of the government, which involve the infrastructure systems, and has also established various companies for investment in and management of such projects, as follows:

1. Bangkok Expressway and Metro Public Company Limited (BEM) which was incorporated by the amalgamation under the Public Limited Companies Act B.E. 2535 (1992) between Bangkok Expressway Public Company Limited ("BECL") and Bangkok Metro Public Company Limited ("BMCL") on December 30, 2015, and assumed all assets, rights, obligations, and responsibilities of both companies by virtue of the law. As at December 31, 2018, the registered and paid-up capital amounted to Baht 15,285,000,000, divided into a total of 15,285,000,000 ordinary shares, at the par value of Baht 1 each. The main businesses are to provide the expressway and rail mass rapid transit services, as well as commercial development in connection with the expressway and metro systems,

which will serve as the foundation in business expansion through extension of routes and service network in both expressway and metro systems in the future, and can also expand to other businesses with good growth and yield rates, such as, other infrastructure projects, commercial development, or real estate development, both in the country and overseas, etc. In this regard, BEM and one of its subsidiaries, i.e., Northern Bangkok Expressway Company Limited (NECL), were granted concession for construction and operation of the expressways, comprising the Si Rat Expressway (Sectors B and C), the Si Rat Expressway (Sector D), the Si Rat - Outer Ring Road Expressway, and the Udon Rattaya Expressway. BEM was also granted concession for provision of the rail mass rapid transit service for two projects, namely, the MRT Blue Line Project, comprising 1) the M.R.T. Chaloem Ratchamongkhon Line Project (Hua Lamphong Station - Bang Sue Station) and the MRT Blue Line Extension Project (Hua Lamphong Station - Lak Song Station Section); and 2) the M.R.T. Chalong Ratchadham Line Project (Khlom Bang Phai Station - Tao Poon Station). BEM holds shares in its subsidiaries, as follows:

1.1 Northern Bangkok Expressway Company Limited (NECL)

NECL's registered capital amounted to Baht 6,000 Million, divided into 294 million ordinary shares and 306 million preferred shares, at the par value of Baht 10 each, Baht 5,250 Million of which were paid-up. As at December 31, 2018, BEM held shares representing 99.99 percent of its registered capital. NECL executed an agreement with the Expressway Authority of Thailand for construction and operation of the Udon Rattaya Expressway for a period of 30 years from September 27, 1996. The Udon Rattaya Expressway's route is northbound, connecting with the Si Rat Expressway at Chaeng Watthana Road, passing Bang Phun, Chiang Rak, and ending at Bang Sai.

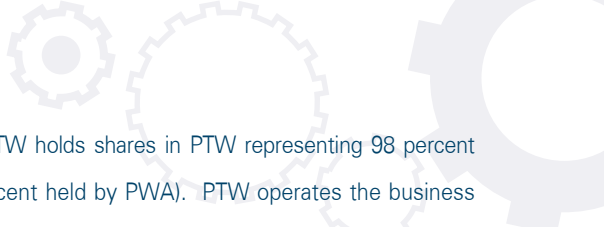
1.2 Bangkok Metro Networks Limited (BMN)

BMN's registered capital amounted to Baht 254 Million, divided into 25.4 million ordinary shares, at the par value of Baht 10 each, Baht 254 Million of which were paid-up. As at December 31, 2018, BEM held shares in BMN representing 69.67 percent of its registered capital.

At present, BMN is a sole representative of BEM in management of commercial development in the MRT Blue Line Project currently operated by BEM which has granted the right to BMN to serve as its representative in management of commercial development, namely, supply and procurement of advertising media in various forms in the areas of the metro stations and inside the trains, lease of retail shops in the metro stations of the M.R.T. Chaloem Ratchamongkhon Line Project, and the basement level of the park and ride facility at Lat Phrao Station, as well as provision of service and maintenance of telecommunication system equipment inside the metro stations and tunnels.

2. TTW Public Company Limited (TTW) operates the business of generation and distribution of water to the Provincial Waterworks Authority (PWA) in the vicinity of West Bangkok, covering the areas of two provinces, namely, Nakhon Pathom Province in three districts, i.e., Amphoe Nakhon Chai Si, Amphoe Sam Phran, Amphoe Phutthamonthon, and Samut Sakhon Province in two districts, i.e., Amphoe Krathum Baen and Amphoe Mueang Samut Sakhon. In addition, TTW was granted concession for the tap water business operation by the Ministry of Natural Resources and Environment for a period 25 years, and entered into the Water Purchase Agreement with the PWA for a period 30 years on a BOO basis. TTW has distributed water to the PWA since January 5, 2004. In this regard, TTW has the water treatment plant at Amphoe Bang Len, Nakhon Pathom Province, with the production capacity of 440,000 cubic meters per day.

In 2017, TTW carried out construction of the water treatment plant No. 2 at Tambon Khlong Maduea, Amphoe Krathum Baen, in Samut Sakhon Province, with the initial production capacity of 100,000 cubic meters per day, which can be expanded up to 440,000 cubic meters per day. Currently, TTW's total maximum production capacity for the two plants accounted for 540,000 cubic meters per day. TTW holds shares in its subsidiaries, as follows:

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- 2.1 Pathum Thani Water Co., Ltd. (PTW) is TTW's subsidiary. TTW holds shares in PTW representing 98 percent of its registered capital of Baht 1,200 Million (another 2 percent held by PWA). PTW operates the business of production and distribution of water to the Provincial Waterworks Authority (PWA) in the vicinity of Pathum Thani - Rangsit since 1998 on a BOT basis, with a term of 25 years, and was also granted concession for tap water production for 25 years from the Ministry of Natural Resources and Environment. Currently, the minimum volume of water to be purchased by the Provincial Waterworks Authority is 330,000 cubic meters per day, and the maximum production capacity is 488,000 cubic meters per day.
  - 2.2 Thai Water Operations Co., Ltd. (TWO) is TTW's subsidiary, whose shares accounting for 68 percent are held by TTW and accounting for 32 percent are held by PTW, and engages in the business of administration and management of tap water production and distribution systems and wastewater treatment system for TTW and PTW in the Bang Pa-in Industrial Estate, the Amata City Chonburi Industrial Estate, and the Amata City Rayong Industrial Estate. TWO has attained the ISO 9001:2015 quality certification from SGS Yarsley in the fields of services of maintenance system and management of tap water production project in the vicinity of Pathum Thani Province, Thammasat and Rangsit; and in 2018, it expanded the ISO 9001:2015 quality certification in the vicinity of the Amata City Chonburi Industrial Estate and the Amata City Rayong Industrial Estate.
  3. CK Power Public Company Limited ("CKP") operates its main business as holding company by holding shares in other companies operating the business of production and distribution of electricity from various kinds of energy, both in the country and overseas. CKP's core revenue under the consolidated financial statements is derived from revenue from sales of electricity and steam, and project management income. As at December 31, 2018, CKP invested by holding shares in other companies operating the business of production and distribution of electricity from various kinds of energy, e.g., hydroelectric power plants, cogeneration power plants, and solar power plants, with the total installed production capacity of 2,167 MW, comprising the installed production capacity of 875 MW from the power projects with commercial operation, and the installed production capacity of 1,292 MW from the power projects under construction. The details of investments in each project are as follows:
    - 3.1 SouthEast Asia Energy Limited ("SEAN"): CKP holds shares in SEAN representing 56 percent of its registered and paid-up capital. SEAN invests in the development of power production business in the Lao PDR and provides consulting, including other services relating to the power production project. Currently, SEAN holds shares in Nam Ngum 2 Power Company Limited ("NN2") representing 75 percent of its registered and paid-up capital. Therefore, SEAN's core revenue under the consolidated financial statements is derived from the dividend from revenue from sales of electricity of NN2.

NN2 is a generator and distributor of electricity from the Nam Ngum 2 Hydroelectric Power Plant, whereby NN2 was granted concession by the Lao PDR. The Concession Agreement is being operated on a BOOT (Build-Own-Operate-Transfer) basis, that is, NN2 will design, develop, construct and operate the hydroelectric power project from the Nam Ngum 2 Hydroelectric Power Project, with the installed production capacity of 615 MW, and with a concession period of 25 years from the Commercial Operation Date ("COD"). Upon expiration of the concession period, NN2 shall deliver such Nam Ngum 2 Hydroelectric Power Project to the Lao PDR. In this regard, NN2 has the right under the agreement to request an extension of time for the Concession Agreement, subject to the terms and conditions to be agreed upon. Under the Concession Agreement, NN2 is obliged to pay the consideration for the concession and taxes to the Government of the Lao PDR according to the schedule and at the rate as specified in the Concession Agreement.

NN2 produces and distributes electricity from the Nam Ngum 2 Hydroelectric Power Plant to the Electricity Generating Authority of Thailand (“EGAT”) under the Power Purchase Agreement, with the supply targets to be purchased by EGAT from NN2 of 2,310 GWh (million units) per year at the fixed tariff, and with a concession period of 25 years from the COD. The electricity will be delivered for distribution in Thailand through EGAT’s transmission system. NN2 initially commenced the electricity production and distribution (Initial Operation Date or “IOD”) to EGAT on March 26, 2011 and the COD was January 1, 2013.

- 3.2 Xayaburi Power Company Limited (“XPCL”): CKP holds shares in XPCL representing 37.5 percent of its registered and paid-up capital. XPCL is a company registered in the Lao PDR and is awarded the concession by the Government of the Lao PDR for the design, development, construction and operation of the Xayaburi Hydroelectric Power Project for a period of 31 years from the Commercial Operation Date (“COD”).

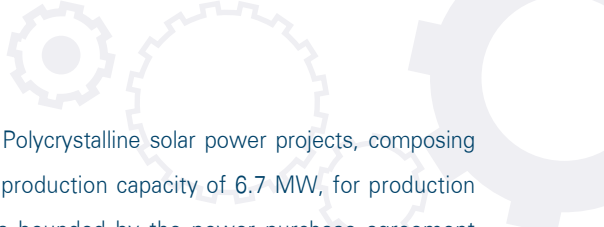
The Xayaburi Hydroelectric Power Project is a large run-of-river hydropower project on the Mekong River downstream, within the boundary of the Lao PDR, approximately 80 kilometers south of Luang Prabang Province, and approximately 160 kilometers from Amphoe Chiang Khan, Loei Province. Its installed capacity is 1,285 MW, with its production capacity to sell 1,225 MW of electricity to EGAT under the Power Purchase Agreement for 29 years from the COD, and 60 MW of electricity to Electricit du Laos (“EdL”) under the Power Purchase Agreement between EdL and XPCL, for the period under the Concession Agreement.

The construction of the Xayaburi Hydroelectric Power Project will take approximately eight years. As at December 31, 2018, the construction was 97 percent completed according to the construction plan, with the Commercial Operation Date scheduled to be achieved in late 2019.

- 3.3 Bangpa-in Cogeneration Limited (“BIC”): CKP holds shares in BIC representing 65 percent of its registered and paid-up capital. BIC is a generator and distributor of electricity and steam from the cogeneration power system by using natural gas as fuel, comprising two projects, namely, the Bangpa-in Cogeneration Power Plant Project No. 1 (“BIC1”) and the Bangpa-in Cogeneration Power Plant Project No. 2 (“BIC2”), both located in the Bang Pa-in Industrial Estate, Amphoe Bang Pa-in, Phra Nakhon Si Ayutthaya Province. BIC1 has the installed production capacity of 117.5 MW for electricity and 20 tons per hour for steam, executing the Power Purchase Agreement with EGAT for 90 MW for a period of 25 years from the Commercial Operation Date. The remaining electricity and steam will be sold to the industrial operators in the Bang Pa-in Industrial Estate. The Commercial Operation Date of BIC1 was on June 28, 2013. BIC2 has the installed production capacity of 120 MW for electricity, executing the Power Purchase Agreement with EGAT for 90 MW for a period of 25 years from the Commercial Operation Date. The remaining electricity will also be sold to the industrial operators in the Bang Pa-in Industrial Estate. The Commercial Operation Date of BIC2 was on June 29, 2017.

- 3.4 Bangkhengchai Company Limited (“BKC”): CKP holds shares in BKC representing 100 percent of its registered and paid-up capital. BKC has invested in the Bangkhengchai Solar Power Project, located in Amphoe Pak Thong Chai, Nakhon Ratchasima Province, employing the thin film photovoltaic module technology, with the installed production capacity of 8 MW. BKC executed the Power Purchase Agreement for the Very Small Power Producer (“VSPP”) with the Provincial Electricity Authority (“PEA”) on July 28, 2009, for a period of five years from the Commercial Operation Date which is automatically renewable for another five years each, and which remains enforceable until the Agreement is terminated. According to such Power Purchase Agreement, PEA agrees to purchase power at the maximum volume of 8 MW, and the Bangkhengchai Solar Power Project will receive the adder at the rate of Baht 8 per kilowatt-hour (unit) for a period of 10 years from the Commercial Operation Date. BKC commenced the production and distribution of electricity to PEA on August 10, 2012.





Moreover, BKC is in the process of investment in construction of the Polycrystalline solar power projects, composing of five solar rooftop projects and one solar farm project, with the total installed production capacity of 6.7 MW, for production and distribution of electricity to the private operators. Each of such projects is bounded by the power purchase agreement for a period of 25 years from the Commercial Development Date. The following are such mentioned projects:

- Solar rooftop project in Amphoe Phachi, Phra Nakhon Si Ayutthaya Province (“Phachi Project”), with the installed capacity of 0.9 MW;
  - Solar rooftop project in Amphoe Banglen, Nakhon Pathom Province (“Banglen Project”), with the installed capacity of 1.0 MW;
  - Solar rooftop project in Amphoe Sam Phran, Nakhon Pathom Province (“Phutthamonthon Sai 5 Project”), with the installed capacity of 1.0 MW;
  - Solar rooftop project in Amphoe Mueang Samut Sakhon, Samut Sakhon Province (“Mahachai Project”), with the installed capacity of 0.7 MW;
  - Solar rooftop project in Amphoe Krathum Baen, Samut Sakhon Province (“Krathum Baen Project”), with the installed capacity of 0.5 MW; and
  - Solar farm project in Amphoe Khlong Preng, Chachoengsao Province (“Khlong Preng Project”), with the installed capacity of 2.7 MW.
- 3.5 Nakhon Ratchasima Solar Limited (“NRS”): CKP holds shares in NRS representing 30 percent of its registered and paid-up capital. NRS has invested in the Nakhon Ratchasima solar power project, located in Amphoe Dan Khun Thot, Nakhon Ratchasima Province, employing the thin film photovoltaic module technology, with the installed production capacity of 6 MW, and also executed the Power Purchase Agreement for the Very Small Power Producer (“VSPP”) with PEA for a period of five years from the Commercial Operation Date which is automatically renewable for another five years each, and which remains enforceable until the Agreement is terminated. According to such Power Purchase Agreement, PEA agrees to purchase power at the maximum volume of 6 MW, and the Nakhon Ratchasima solar power project will receive the adder at the rate of Baht 8 per unit for a period of 10 years from the Commercial Operation Date, and commenced the production and distribution of electricity to PEA on March 8, 2012.
- 3.6 Chiangrai Solar Limited (“CRS”): CKP holds shares in CRS representing 30 percent of its registered and paid-up capital. CRS has invested in the Chiangrai solar power project, located in Amphoe Mae Chan, Chiang Rai Province, employing the Polycrystalline cells technology, with the installed production capacity of 8 MW and also executed the Power Purchase Agreement for the Very Small Power Producer with PEA for a period of five years from the Commercial Operation Date which is automatically renewable for another five years each, and which remains enforceable until the Agreement is terminated. According to such Power Purchase Agreement, PEA agrees to purchase power at the maximum volume of 8 MW, and the Chiangrai solar power project will receive the adder at the rate of Baht 8 per unit for a period of 10 years from the Commercial Operation Date, and commenced the production and distribution of electricity to PEA on January 17, 2013.

## 2.2 Marketing and Competition

- (a) Overall in 2018, the Company continued to mainly emphasize the large-scale projects of the public sector, despite the fact that the large-scale projects of the public sector, especially in terms of communication and transportation, in 2018, were not pushed forward for successful bidding under the public sector plan, as a result of the promulgation of the Government Procurement and Supplies Administration Act B.E. 2560 (2017) which caused many agencies to have adapted their practical guidelines for bidding which shall be subject to prior consideration and approval of the Comptroller General’s Department to enable them to apply the provisions in such Act properly in accordance with the applicable rules and regulations and to prevent any problems during the bidding process.

In 2018, the Company executed the engagement agreements for a total of nine projects, with the total value of Baht 5,435 Million Baht (Five Thousand Four Hundred and Thirty-Five Million Baht only).

- (b) Although the public sector was not able to actively drive the projects under the budget for bidding, the government has pushed forward the projects in the Eastern Economic Corridor (EEC) with the infrastructure investment of approximately Baht 988,948 Million. The infrastructure can be divided into six types as follows:

| No.          | Infrastructure Type              | Project Amount | Investment Amount<br>(Million Baht) |
|--------------|----------------------------------|----------------|-------------------------------------|
| 1            | Road network                     | 90             | 214,636.83                          |
| 2            | Railway network                  | 9              | 398,592.00                          |
| 3            | Marine network                   | 19             | 160,609.17                          |
| 4            | Air freight and logistics        | 20             | 173,844.00                          |
| 5            | Electric system development plan | 12             | 40,459.73                           |
| 6            | Tap water development plan       | 18             | 806.36                              |
| <b>Total</b> |                                  | <b>168</b>     | <b>988,948.09</b>                   |

The investment in the projects in the EEC was mostly in a form of public and private partnerships (PPP). The Company joined with its alliances to bid for the hi-speed rail linked 3 airport project in the investment amount of Baht 117,425,750 Million Baht from the public and private sectors. The alliance group of the Company has been selected to submit the best proposal. Other than the hi-speed rail linked 3 airport project, the Company has also closely followed up the feasibility and appropriateness of other projects in the EEC.

- (c) The Company not only has an interest in local projects, but also in overseas projects on a PPP basis by joining with its affiliated companies and local alliances for two projects, namely:

- The Rangoon expressway construction project in the Republic of the Union of Myanmar; and
- The Tap water development system in the Democratic Socialist Republic of Sri Lanka.

For both projects, the Company has initially passed consideration of the required qualifications. It was expected that the bid would be completed by the end of the second quarter of 2019.

With respect to the industry outlook 2019, it is anticipated that there would be bids for various projects which were not driven by the government for bidding in 2018 as those projects have passed the required procedures and are ready for bidding by the second - third quarter of 2019, including the PPP-based projects, with the total value of approximately Baht 1.77 Trillion. The Company has sufficient potential to participate in competitions for all projects by its own or may join with its alliances which are experienced in specific fields required for each project.

## 2.2.1 Significant Policies and Marketing for Products or Services

### A. Competition Strategies

- Use of Advanced and Highly Efficient Construction Technology: At present, the construction techniques have remarkably developed, introducing choices for use of appropriate technology to save time, minimize production costs and control the work efficiency and quality. In this respect, the Company continues to select and use appropriate, modern and safe technology, as well as the Company's work experience which is an essential factor minimize the production costs and increase profits. For example, in the expressway and elevated road construction projects, the Company utilized the technology of pre-casting system of concrete segments from such countries as Germany and the United States of America.

- **Appropriate Revenue Structure Management:** The Company has policies to manage its revenue structure and affiliated companies to be in line with the fluctuations of the economy as the construction work of the public and private sectors would usually expand at a fluctuating rate. In other words, during a highly growing economy with high demand for private sector construction, the government would minimize the inflation rate by way of restrictions on the expenditure budgets of the government agencies. During the economic downturn, the government would increase expenditure budgets to stimulate the economic expansion. In this regard, the Company sets policies to focus on various types of construction projects in line with the economic circumstances. In the construction business, the Company would focus on large-scale projects of the government and private entities, while the affiliated companies would focus on small to medium-scale projects of the government and private entities. The joint ventures would focus on large-scale construction projects from the government, which require use of advanced construction technology. Furthermore, the Company also additionally invested in various infrastructure concession projects, such as, TTW Public Company Limited, Pathum Thani Water Co., Ltd., Bangkok Expressway and Metro Public Company Limited, CK Power Public Company Limited (CK Power Public Company Limited invests by holding shares in SouthEast Asia Energy Limited, Bangpa-in Cogeneration Limited, Xayaburi Power Company Limited, Nakhon Ratchasima Solar Limited, Chiangrai Solar Limited, and Bangkhengchai Company Limited). The Company derived dividends from these companies, which serve to minimize risks from the fluctuation of economic circumstances due to the fact that the nature of construction works of the government and private entities usually grow at a fluctuating rate and the Company's revenue solely relies on construction business, and also serve to render the Company's revenue to become more constant.
- **Provision of Service to Maximum Benefits to Customers:** The Company promotes policies for development of personnel and teamwork, including study, research and development on advanced technology on a regular basis so as to achieve safe and highly efficient work and management system in response and giving rise to benefits to customers in terms of quality and satisfaction, and timely work completion.
- **Regular Personnel Quality and Management System Development:** The Company emphasizes the policies for development of personnel and management procedures to ensure versatile and flexible work structures, including procedures in response to the fluctuating business circumstances. This also gives rise to the opportunity to exchange advanced technology with foreign investors to render the management flexible and develop personnel to have more knowledge and skills.

#### **B. Characteristics of Customers and Relationships among Customers, the Company and Subsidiaries**

The construction clientele of the Company and its subsidiaries can be divided into two groups, namely government agencies or state enterprises, and private sector. The characteristics of the Company's customers could not be divided into definite ratios given the fact that the customers are different in terms of periods and nature of their projects. However, considering the projects in the past, most of the Company's customers are the government agencies and state enterprises in the country. During the previous year, the Company was engaged for a construction project in a neighboring country in order to expand its investment in the upcoming overseas projects, which mostly are the mega projects and have high amount of investments for which the Company has sufficient potential to operate such projects. In addition, the Company, its subsidiaries and associated companies also continuously maintain good relationships with customers, as can be seen from the previous achievements of the Company in the various projects awarded by either public sector or private entities for large-sized construction projects over the past period. In this respect, the Company's clientele has significantly expanded. The target customer group of the Company and its subsidiaries at present include the government agencies, state enterprises and large-sized private entities. As at December 31, 2018, more than 51 percent of the Company group's revenue structure in the future for projects on hand represented the works for the public sector, and 49 percent of the same represented the works for the private sector. In this regard, the work from the private sector would mostly constitute extension projects from the government concession operation.

Concession Business: This business depends on concession contracts of companies in the group. The customer under the concessions granted to TTW Public Company Limited and Pathum Thani Water Co., Ltd. is the Provincial Waterworks Authority, as a government agency, and the customers under the concessions granted to Bangkok Expressway and Metro Public Company Limited are the public using the services, as well as the customer under the concessions granted to SouthEast Asia Energy Limited, Xayaburi Power Company Limited, Bangpa-in Cogeneration Limited is the Electricity Generating Authority of Thailand, and the customer under the concessions granted to Nakhon Ratchasima Solar Limited, Chiangrai Solar Limited, and Bangkhenchai Company Limited, is the Provincial Electricity Authority.


### Summary of Top 10 Major Customers

as at December 31, 2018

| Name of Employers                                      | % of Total Revenues from Construction Services (Consolidated Financial Statements) |
|--|--|
| As at December 31, 2018                                |  |
| 1. Bangkok Expressway and Metro Public Company Limited | 26.28  |
| 2. State Railway of Thailand                           | 22.04  |
| 3. Xayaburi Power Company Limited                      | 19.98  |
| 4. Mass Rapid Transit Authority of Thailand            | 17.39  |
| 5. Department of Highways                              | 5.23   |
| 6. Metropolitan Electricity Authority                  | 2.10   |
| 7. Nam Ngum 2 Power Company Limited                    | 1.47   |
| 8. Mae Fah Luang University                            | 0.78   |
| 9. TTW Public Company Limited                          | 0.32   |
| 10. Bangpa-in Cogeneration Limited                     | 0.19   |
| 11. Others   | 4.22   |
| Total  | 100.00   |

### C. Distribution and Channels

Given that the construction business mainly entails direct approach to customers, the Company thus establishes a Business Development Department to be mainly responsible for monitoring and following up on information and details in respect of investment plans for new projects of the public and private sectors by planning and setting up strategies to have access to and analyze the information of the target groups and competitors in the same industry, as well as establishing good relationship with government agencies and private entities in order to increase the Company's opportunities for competitions. The fact that the Company focuses on bidding for construction and concession projects from government agencies, whether in the form of main contractor or sub-contractor, and that the Company's previous



achievements, which have been acceptable and satisfactory to customers, serve as a channel to approach and be recognized by all target customers, for which the Company participated in bidding for their projects, and some construction projects were awarded to the Company through the recommendation by the Company's existing customers.

## **2.2.2 Competition in Construction Industry**

### **A. Trend of Growth and Development of Construction Industry**

The construction industry in 2018 continuously grew at a rate similar to that in 2017, due to main contributing factors from continued acceleration of investment in infrastructure projects of the government sector from 2017. Despite the fact that there would be a slowdown in procurement process in the government sector as a result of promulgation of the Government Procurement and Supplies Management Act B.E. 2560 (2017), effective since August 2017, in 2018, the government sector continued to push forward investment in infrastructure projects. In so doing, the Ministry of Transport formulated the Transport Action Plan 2019 prescribing the transportation infrastructure investment projects as an urgent priority in 2019, with the investment value of approximately Baht 1.77 Trillion, such as, Rama III - Dao Khanong - Western Outer Ring Road Expressway Project, MRT South Purple Line, Tao Poon - Rat Burana, MRT West Orange Line, Thailand Cultural Centre - Taling Chan, Double Track Railway Project, Phase 2, hi-speed railways, motorways, project for competency enhancement of Don Mueang and Suvarnabhumi Airports, etc., not to mention the fact that there were other projects of the government sector under the development scheme of the Eastern Economic Corridor (EEC), for instance, high-speed railway project which seamlessly links the three airports (Don Mueang - Suvarnabhumi - U-Tapao), Laem Chabang Port Development Project, Phase 3, U-Tapao Airport Development Project, etc. Moreover, the government agencies had more clear understanding of implementation under the Government Procurement and Supplies Management Act B.E. 2560 (2017). From all of these factors, it was expected that the industrial industry, particularly infrastructure investment of the government sector, would continue to grow and have a positive trend which was better than that in 2018. In this regard, the Company conducted studies on information in preparation for participation in submission of bids for various projects as mentioned above. Moreover, the Company has been in the process of foreign investment expansion, which at the initial stage, the Company's main focus would be those countries in Asia, and the Company would emphasize bids for infrastructure development projects in various forms by selecting the projects which have appropriate risks and returns, whether as a single contractor or joint venture with reliable alliances, subject to factors and conditions of each project.

### **B. Industrial Structure Relating to Competition**

In general, construction contractors may be divided into three groups as follows:

1) Small and medium-sized contractors: The contractors in this group shall have the capacity to accept construction work projects with low value, the majority of these works shall be derived from private entities or small-sized projects of the public sector, which requires moderate technology and investment funds. This group includes a number of contractors, thereby resulting in a rather high competition in pricing and being highly vulnerable to impacts from fluctuation in the industry.

2) Large-sized contractors: The contractors in this group have goals in respect of their acceptance of various large-scale projects, requiring a rather high construction technology, from the public and private sectors, and have capabilities to carry out various types of works in such projects. Certain contractors also have companies in the same group serving as producers of construction materials to be used in such projects, and are well prepared in terms of their personnel's expertise and experience in diversified works and high professional standard, including tools and machinery. This group includes a small number of contractors and the competition in this group is moderate. Certain contractors also accept work overseas, including creation of works by way of investment for concession, namely, CH. Karnchang Public Company Limited, Italian-Thai Development Public Company Limited and Sino-Thai Engineering and Construction Public Company Limited.



| Company  | As at December 31, 2018 (Unit: Million Baht)<br>(Consolidated Financial Statements)<br>(Source: Stock Exchange of Thailand) |                |
|--|---|----------------|
|  | Total Assets  | Total Revenues |
| 1. CH. Karnchang Public Company Limited                          | 83,500.54   | 31,175.57      |
| 2. Italian-Thai Development Public Company Limited               | 98,014.74   | 61,894.09      |
| 3. Sino-Thai Engineering and Construction Public Company Limited | 45,575.41   | 28,000.91      |

3) Foreign contractors: The contractors in this group are large-sized companies with advanced technology, mostly comprising companies from Japan, China and Europe, such as, Kajima Corporation, Obayashi, Kumagai, Siemens, Bilnger, and China State. The business operations of these companies focus on accepting large-scale projects, requiring a rather high construction technology, in cooperation with large-sized construction companies in Thailand. Such cooperation is neither certain nor specific to establish a long-term business alliance, but the cooperation shall be selective on a case by case basis.

### 2.2.3 Market Share

In 2018, the public sector were not able to push forward the large-scale projects in respect of both mass rapid transit system and others for bidding, due to the fact that many governmental agencies were studying and adjusting themselves to rules, regulations and process applicable under the Government Procurement and Supplies Administration Act B.E. 2560 (2017), particularly the e-bidding. This has delayed procurement process of various projects. As a result, the Company, including its competitors at the same level, was not able to sign the large-scale projects. Therefore, the Company's market share in 2018 in comparison to its competitors at the same level was not clearly specified.

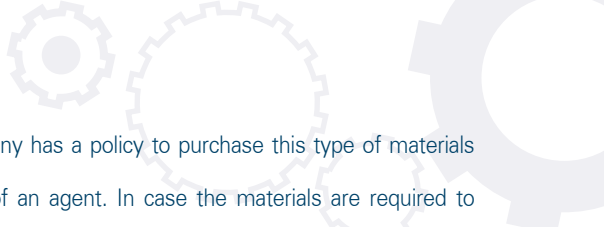
### Characteristics of Customers and Relationships

Revenues from construction services in 2018, 47.5 percent of which were from the Company's customers were government agencies, and 52.5 percent of which were from reputable private customers with financial stability. In this regard, the Company's results of the customer satisfaction assessment would be in the range of good to very good.

## 2.3 Procurement of Products or Services

### 2.3.1 Construction Materials, Products and Services

Significant construction materials and products produced in Thailand comprise cement, steel rods, structural steel, stones, sands, etc. The materials in architecture are, for example, sanitary ware, ceramic, granite, ceiling and wall, steel doors, aluminum doors and windows, wood doors and windows, PVC and equipment, as specified in the details of the construction contract. The Thailand Industrial Standards of the project owner shall be taken into account. The Company does not purchase construction materials exclusively from any particular distributor since the procurement procedure requires checking of price, quality, delivery of goods and reliability at all times to ensure obtaining the best distributor, both in respect of quality, price and service. The Company shall conduct evaluation of the distributor at least twice a year. Each procurement and engagement requires approval of the project owner and supervisor. The Company is also required to execute a procurement contract to ensure the best conditions and the price can be valid until the project completion. As for the service, the Company shall be responsible for the quality of the goods and service for a period of at least two years or under a contract with the project owner.



Construction materials and products from overseas import: The Company has a policy to purchase this type of materials via a local distributor, by taking into account the after sale service and experience of an agent. In case the materials are required to be directly purchased from overseas, the Company shall open letters of credit (L/C). Such materials from overseas shall meet the standard per the requirements of the project owner, such as, ASTM, BS, JIS, API, etc. In this regard, the terms and conditions of the L/C shall be carefully specified to minimize risks.

The Company has procured products and services under the quality management system, including the criteria for selection of manufacturers, suppliers and contractors, as well as regular review and inspection of product quality based on the performance of current manufacturers, suppliers and contractors, in order to confirm and assure at all times that the products and services after delivery to project owners are correct and complete in accordance with the agreed terms and conditions.

In procuring goods, products and services for use in various construction projects, the Company has selected suppliers/contractors with potential, experience, performance and qualifications for each work and checked prices, quality and delivery of goods that meet standards as required by owners in purchase orders for such goods, products and services.

The Company gives priority to raw materials which have environmental impact, for example, materials made of asbestos. With this reason, the Company then avoids using such materials and uses other materials which have no environmental impact instead. In the past, the Company had never received any report or complaint relating to violation of environmental laws.

In procuring products and services for construction in various projects of the Company based on categories of both domestic and overseas products, the Company has benefited from cooperation from various potential business partners which are major and retail manufacturers and suppliers of construction materials. Given the Company's improved operational results and continued business growth, the Company has more channels to procure and select goods, products and equipment in the construction from higher quality standard and qualified manufacturers and suppliers in line with the growth of the manufacturing industry. As a result, the Company is confident in its ability to supply quality goods, products and services in accordance with the requirements and objectives of project owners.

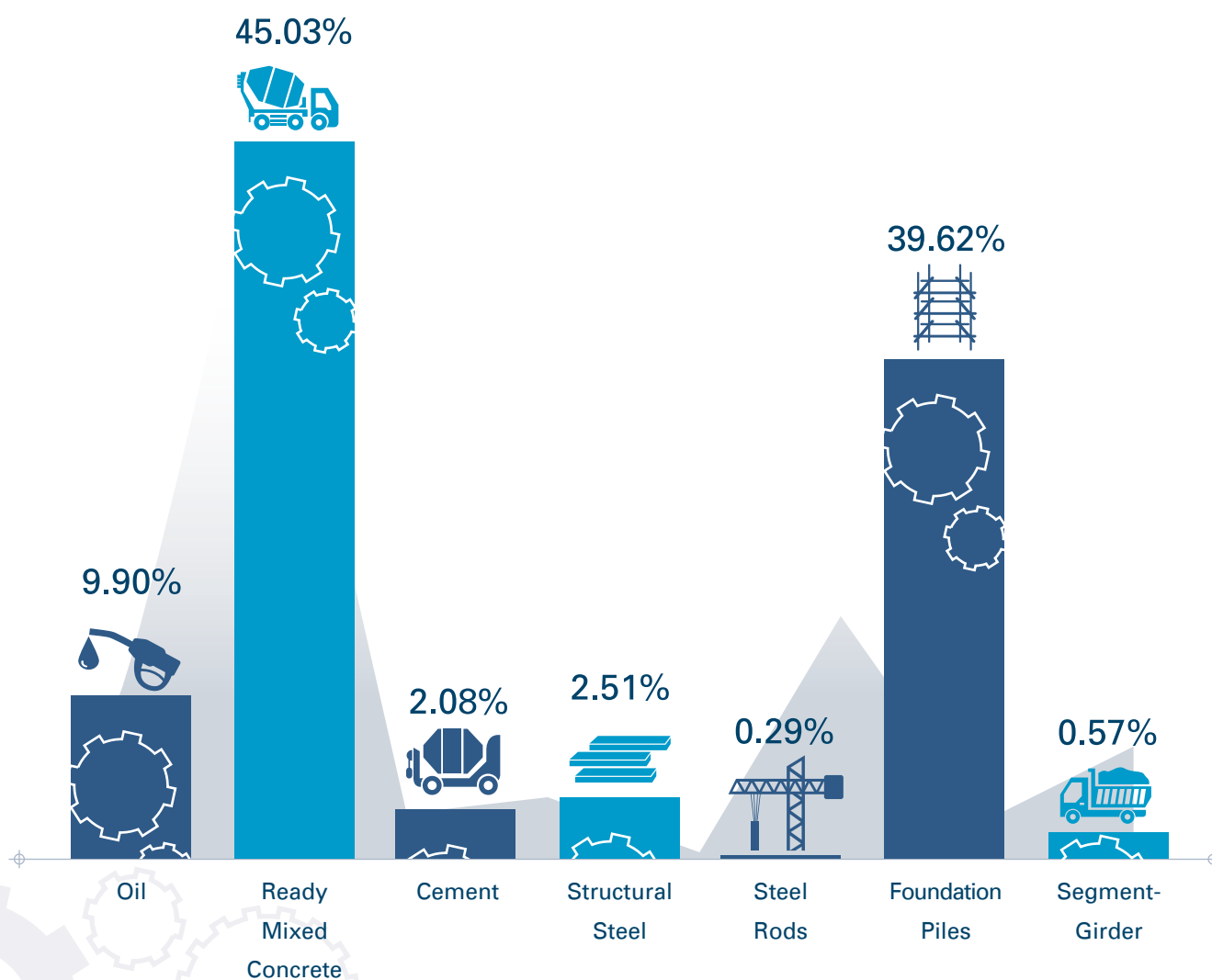
In addition, the Company has enhanced its potentials in respect of procurement of products and services, by introducing the ERP (Enterprise Resource Planning) system since 2009, to ensure that the procurement of products and services is improved, with a more systematic control and recording process, for example, process for issuance of purchase orders and inventory management, thereby resulting in an efficient inventory management and reduction of waste materials in construction projects.

In 2018, there was a slowdown in Thailand's economy; purchase order volume of key materials of certain categories decreased and that of certain categories increased, due to the continuity of the construction work process from the previous year. Prices of key materials of many categories slightly increased, such as, ready-mixed concrete (cement), oil, structural steel, etc. However, as for the production capacity for goods and key materials, it is expected to remain sufficient for domestic utilization, as a result of the economic stimulus policy of the government which did motivate manufacturers to continuously produce goods.

## Summary of Purchase Value of Key Materials in 2014 - 2018:

| No.   | Description          | 2018<br>(Baht) | 2017<br>(Baht) | 2016<br>(Baht) | 2015<br>(Baht) | 2014<br>(Baht) |
|-------|----------------------|----------------|----------------|----------------|----------------|----------------|
| 1     | Oil                  | 452,100,000    | 359,000,000    | 120,000,000    | 94,000,000     | 142,000,000    |
| 2     | Ready Mixed Concrete | 2,056,200,000  | 1,579,000,000  | 725,000,000    | 853,000,000    | 765,000,000    |
| 3     | Cement               | 94,900,000     | 108,000,000    | 32,000,000     | 27,000,000     | 40,000,000     |
| 4     | Structural Steel     | 114,800,000    | 134,000,000    | 562,000,000    | 44,000,000     | 134,000,000    |
| 5     | Steel Rods           | 1,808,900,000  | 539,000,000    | 690,000,000    | 1,087,000,000  | 1,375,000,000  |
| 6     | Foundation Piles     | 13,150,000     | 8,000,000      | 3,000,000      | 19,000,000     | 66,000,000     |
| 7     | Segment-Girder       | 25,900,000     | 242,000,000    | 243,000,000    | 11,000,000     | 19,000,000     |
| 8     | Concrete Sleeper     | -              | 84,000,000     | 228,000,000    | 133,000        | 43,000,000     |
| Total |                      | 4,565,950,000  | 3,053,000,000  | 2,603,000,000  | 2,135,000,000  | 2,584,000,000  |

## Summary of Purchase Percentage of Key Materials in 2018 (%)



## Description of Procurement of Raw Materials

The Company procures raw materials from local and overseas sources as described above. The guidelines for procurement are as per the detailed procurement flow chart as follows:

### Procurement

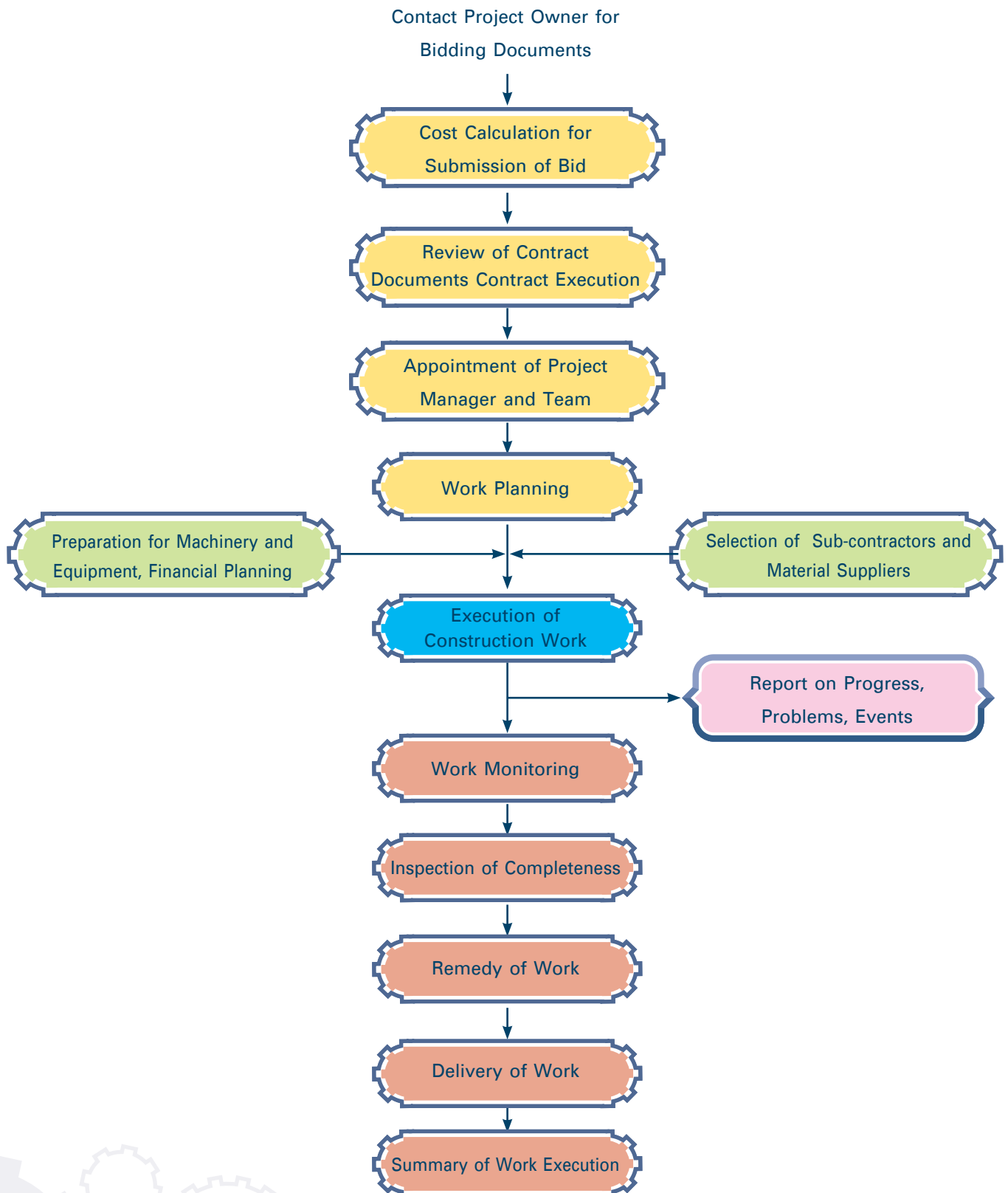
#### Procedures

#### 1. Guidelines for Procurement/Engagement

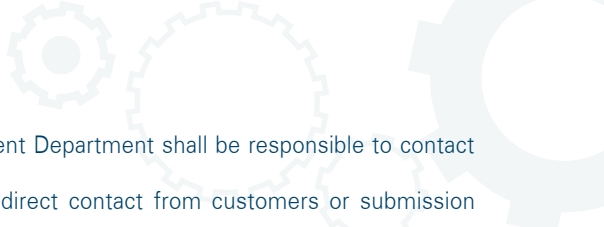


### 2.3.2 Procedures for Production and Disposal of Unused Raw Materials

(1) The production procedures for construction work can be summarized as follows:







A. Procedures for Acceptance of Work: The Business Development Department shall be responsible to contact and procure construction work, which can be done in two manners, namely, direct contact from customers or submission of proposals to customers. Such information shall be derived from updates and news from various sources. Normally, the Company shall accept construction works by two methods as follows:

- Negotiation: The Company shall accept construction work through negotiation process without bid submission.

The acceptance of construction work in this manner may be a result of either direct contact from customers or the Company's direct proposal of work to customers. The majority of work accepted by this method is usually such work from the existing customers with good relationships with the Company or those recognizing the Company's previous achievements or new customers with recommendation from the Company's existing customers.

- Bidding: The Company shall be informed of news regarding invitation to bid from various sources and participate in the bidding process in accordance with the following procedures:

- Purchase of drawing and specifications and the bidding documents, as well as downloading documents in case of e-bidding;
- Cost estimation;
- Bidding.

**The signing of a construction contract would take place after conclusion of prices and conditions.**

B. Procedures during Implementation: After the Company has signed a construction contract, it shall be the duty and responsibility of the Construction Project Department to proceed as follows:

Appointment of Project Manager: The project manager shall serve as the project management center, and shall be responsible for the project in all respects, e.g., supervision of work to ensure timely completion and control of expenses within the specified budget, etc.

**Planning and Preparations for Construction by Project Manager:**

- Construction Schedule Planning: The work schedule should be planned in line with the conditions and delivery schedule;
- Resource Planning: Employment of staff should be prepared in line with the nature and volume of work, including engagement of minor contractors, procurement of material suppliers and planning for utilization of materials and machinery;
- Preparation of Temporary Office: During the construction, the production and delivery of work shall take place at the site of the customer or project owner, and it is the duty of the project manager to prepare various public utilities required for the work performance, such as, water, electricity, and staff quarters, etc.
- Preparation of Detailed Work Plan: The project manager shall prepare step by step work plans in line with timeframe to facilitate the work supervision so as to progress in accordance with the schedule and meet the standards required by the project owner.

**Construction:** During the construction, supervisors and foremen in the respective divisions shall jointly monitor and supervise the quality and progress of work to be in accordance with the schedule and timeframe, as well as ensure safety for operating staff and the public.

**Monitoring and Inspection:** The progress of work, costs, various overheads and budgets used in the construction must be verified, and the project manager shall receive reports from the relevant divisions.

**Report on Progress of Work:** This is a report on the details of the work performed, utilization of construction materials, costs, quality, quantity and progress of work, including various problems, which would be reported by the project manager to supervisor at the Head Office. In case there are problems, the supervisor will provide assistance and support to solve such problems.

**Inspection of Work Completeness:** This is the final inspection of work completeness prior to delivery. Generally, during the execution, the work would be inspected on a monthly basis. If any stage of such work fails to pass the inspection, the re-inspection would be scheduled. When the work passes the inspection, the completeness of the corrected work would be inspected prior to delivery of the work to the employer.


C. Post-Completion Procedures: At this stage, the Company would provide training to the employer, deliver necessary documents, e.g., As-Built Drawings, material quality and workmanship warranty documents, and other documents as specified in the contract to the employer. The employer would inspect the work completeness before returning the retention money and the performance bond to the Company after the expiration of the warranty period.

## (2) Disposal of Unused Raw Materials

The Company greatly emphasizes the significance of the environment and social development, along with the operations with work safety standard and environment in line with the relevant laws and regulations.

The Company and the subsidiaries have arranged for work safety and environmental standards for every project in line with the regulations, rules, laws and international standards, which at present renders the Company to receive the ISO 9001:2015.

Based on the aforesaid activities, the carrying out of various projects does not cause any impact on the society and environment, as well as reducing work-related accident statistics to an acceptable level. For instance, wastewater and effluents have been properly treated to ensure the sanitary condition before emission; unused materials and wastes from construction have been regularly collected and properly disposed of, i.e., hazardous materials shall be disposed of or handled by specialist. Unused materials, such as, steel rods, structural steel, sanitary ware, office equipment, shall be returned at the Company's central store for further use in other projects. Scrap of materials, such as, iron scraps, metal scraps, used tyres, in good condition, used engine oil, shall be put for sale to those wishing to recycle them for further use in proper work. This includes ongoing training for staff on safety and environment. Expenses in carrying out such various activities are considered one of the Company's costs. The Company has obtained various prizes, for example:

- 
- In 2000, outstanding award for minimizing environmental impact from the Mass Rapid Transit Authority of Thailand for Lumpini Station, Joint Venture BCKT;
  - In 2000, honorable award for minimizing environmental impact from the Mass Rapid Transit Authority of Thailand for Sukhumvit Station, Joint Venture BCKT;
  - In 2001, outstanding award for minimizing environmental impact from the Mass Rapid Transit Authority of Thailand for Sam Yan Station, Joint Venture BCKT;
  - In 2003, maximum construction work safety achievement with 5,000,000 working hours without lost time accident in Nakhon Pathom - Samut Sakhon Water Project, Joint Venture TWCK;
  - In 2015, outstanding award for administration and management of safety, occupational health and working environment from the Mass Rapid Transit Authority of Thailand for construction of the MRT Green Line Project, Bearing - Samutprakan Section, Contract 1;
  - In 2016, TCA Concrete Practice Award 2016: Silver Medal from Thailand Concrete Association for construction of the Xayaburi Run-of-River Project.
  - In 2017, the ASEAN Outstanding Engineering Achievement Project Award from the member countries of ASEAN Federation of Engineering Organizations (AFEO) in terms of expertise in various fields of engineering and continued support of engineering works beneficial to the society and the country, together with the organization management works in relation to engineering work, and continued support of activities of the Engineering Institute of Thailand.
  - In 2017, the Best Investor Relations Awards in the category of companies listed on the Stock Exchange of Thailand with market capitalization ranging from Baht 30,000 - 100,000 Million in SET Awards 2017 Event.



## 2.4 Undelivered Work

The details of undelivered work of the Company, its subsidiaries and joint ventures with the value exceeding 10 percent of the total revenue in the consolidated financial statements for the period ended December 31, 2018, are as follows:


| Project Name   | Nature of Work  | Project Value<br>(Million Baht) | Expected Year<br>of Project<br>Completion | %<br>of Undelivered<br>Work | Value of<br>Undelivered Work<br>(Million Baht) |
|--|---|---------------------------------|---|-----------------------------|--|
| <b>CH. Karnchang (Lao) Co., Ltd</b>  |   |                                 |   |                             |  |
| 1) Engineering, Procurement and Construction Contract for the Xayaburi Hydroelectric Power Project in The Lao People's Democratic Republic | Xayaburi Hydroelectric Power Plant                    | 94,622                          | 2019                                      | 9.0                         | 8,516  |
| <b>CKCH Joint Venture</b>  |   |                                 |   |                             |  |
| 1) Construction of the Double Track Railroad Construction Project, Chira Junction - Khon Kaen Section                                      | Trackwork   | 22,735                          | 2019                                      | 12.5                        | 2,774  |
| <b>CKST Joint Venture</b>  |   |                                 |   |                             |  |
| 1) Contract E1: Underground Civil Works, Thailand Cultural Centre - Ram Khamhaeng 12 Section, the MRT Orange Line (East Section) Project   | MRT   | 19,283                          | 2022                                      | 77.0                        | 14,848   |
| 2) Contract E2: Underground Civil Works, Ram Khamhaeng 12 - Hua Mak Section, the MRT Orange Line (East Section) Project                    | MRT   | 20,100                          | 2022                                      | 84.1                        | 16,904   |
| 3) Contract E5: Depot and Park & Ride, the MRT Orange Line (East Section) Project  | MRT   | 4,515                           | 2022                                      | 73.0                        | 3,296  |
| <b>CH. Karnchang Public Company Limited</b>  |   |                                 |   |                             |  |
| 1) MRT Blue Line Hua Lamphong to Bang Khae and Bang Sue to The Phra M&E Equipment Procurement, Construction and Management Contract        | Supply and Installation of trains and the M&E Systems | 21,099                          | 2020                                      | 41.0                        | 8,608  |
| 2) MRT Blue Line Hua Lamphong - Bang Sue : Maintenance Services and E&M Systems  | Maintenance Services on Infrastructure                | 4,048                           | 2027                                      | 88.0                        | 3,562  |



## 3. Risk Factors

CH. Karnchang Public Company Limited has a vision of becoming the leader in construction business and basic infrastructure developer, and considers it necessary to manage risks in its business under the changes in internal and external factors which might affect its operations. Risk management is considered a key instrument in the business administration to ensure efficient achievement, and is also regarded as a key factor in the good corporate governance. Therefore, the Company arranges for systematic risk management, monitoring and measures to continuously minimize risks. The Corporate Governance and Risk Management Committee is appointed to consider at the policy level, while management manages the overall risk management process of the organization, with a working team to perform daily routine works on behalf of the Corporate Governance and Risk Management Committee, in order to monitor and assess risks as well as prepare the risk management report at the unit level for submission to the Board of Directors for acknowledgement.

The Company has prepared a handbook on risk management and risk management plan as guidelines in the operations, as well as monitoring, assessment, and review of risks in line with both internal and external circumstances. The risk factors which might give rise to investors' investment risks are as follows:



### 3.1 Risk from Major Shareholders Exceeding 25 Percent

As at August 28, 2018, the Company's major shareholder group was the Trivisvavet Group, holding shares in aggregate representing 33.69 percent of its registered and paid-up capital. Such shareholding percentage might enable the Trivisvavet Group to make material decisions in shareholders' meetings, as well as to seek resolutions on any other matters that require a majority vote of the shareholders' meeting, except such matters which shall be passed by three-fourths of votes of the shareholders' meeting under the laws or the Company's Articles of Association. Therefore, other shareholders of the Company might be at the risk being unable to collect votes to counterbalance and inspect such matters proposed by the major shareholders.

However, the Company realized the significance of power counterbalancing, and then clearly and transparently determined a scope of authority and responsibilities of various committees, as well as formulated measures for execution of connected transactions with directors, major shareholders, executives, controllers, including persons who might have a conflict of interests, whereby such persons shall not have the right to vote on such transactions. The Company also appointed the Audit Committee to independently serve the Board of Directors to ensure transparency and shareholders' confidence in their ability to review performance and counterbalance in the capacity as minor shareholders' representative, as well as help scrutinizing various matters for submission of the same to shareholders' meetings. The Company discloses information and complies with applicable rules and regulations of the SEC Office and the Stock Exchange, such as, connected transactions and transactions on acquisition and disposition of assets of the Company, etc., for the utmost benefit of the Company and all shareholders.



### 3.2 Risk from Reliance on Customers in the Company Group Invested by the Company

The Company not only operates the construction business, but also invests in basic infrastructure development business on a regional level. Currently, the Company has invested in transportation and mass rapid transit systems, namely, Bangkok Expressway and Metro Public Company Limited ("BEM"), water infrastructure system, namely, TTW Public Company Limited ("TTW"), and power system, namely, CK Power Public Company Limited ("CKP").

Therefore, in the Company's revenue structure, other than works for public and external private sectors, the Company has also accepted construction works from the companies invested by the Company. In 2018, the Company's revenue from construction services from BEM, Xayaburi Power Company Limited (whose shares were held by CKP and BEM), Bangpa-in Cogeneration Limited (whose shares were held by CKP), and TTW Public Company Limited, represented 48.05 percent of the revenue structure in 2018. In addition, revenues from construction services are strategically responsible for the Company's sustainable and stable growth by integrating the construction business with investments in basic infrastructure projects for the national development, along with risk management and increase in long-term returns to shareholders from dividend. Moreover, the Company is a construction company with capabilities and competency to complete works at reasonable prices. The Company's acceptance of works from companies in the group then represented risk diversification in response to decreasing works for public or private sector, which would enable the Company to generate revenues from construction services from the company group invested by the Company in various projects. Furthermore, the approval of transactions on engagement of companies and company group comply with the regulations of the Stock Exchange of Thailand.



### 3.3 Risk from Management and Risk from Delays in Projects

The Company realized the risk from management and therefore, determined guidelines to prevent any flaws which might occur, by implementing the quality management system of ISO 9001:2015 to maintain the operation standards both in projects and in the Company's head office, taking into account the continued improvement of quality management system. The Company group also set out guidelines for staff improvement to ensure that staff have knowledge, skills, ethics and accountability towards the organization, including all stakeholders, so as to minimize and prevent damage which might be caused by such risk.

The Company obtained the international quality system standard accreditation of ISO 9001:2000 in 2002, ISO 9001:2008 in 2010, and ISO 9001:2015 in 2017 from two institutions, namely, UKAS and NAC Thailand, with the accreditation of total 13 scopes of works, namely, the business of construction work design and management for buildings, roads, bridges, underground structure and tunneling, piping work and aviation fueling hydrant control system, fuel depot and control system, expressway, landscape, wastewater treatment plant, cogeneration power plant, hydroelectric power development dam, high voltage transmission line and substation, and rock quarry and mill.

Generally, risks from delays in various projects might be caused by delays on the part of employers or contractors or by events without any liable party.

Delays on the part of employers included, for example, site delivery, review and approval on various matters relating to construction work. These delays might affect the construction period and costs. However, the Company minimized risks from such delays through cooperation and coordination with employers to ensure successful completion of the construction works.

Delays on the part of contractors included, for example, shortages of construction materials. The Company prevented such problem by entering into forward agreements for purchase - sale of various materials, as evidenced by the signed agreements for purchase - sale of cements and metals to accommodate the Company's projects, of which contracts have already been executed.

Delays caused by any events without any liable party included, for example, natural perils. In the execution of a contract, there generally is a requirement for the contractor to take out insurance for various construction projects.

Based on the Company's past experience, the Company has never encountered any events caused by delays on the part of the Company group, but risks from delays caused by the Company's contractual party, such as, in the Bang Na - Bang Pli - Bang Pakong Expressway Construction Project, and the Company group rectified such circumstance by requiring the employer to promptly resolve such problems and the Company also accelerated the construction to meet the specified schedule.



### 3.4 Risk from Exchange Rate

Given the fact that the Company group earned income and incurred costs in certain projects in foreign currencies, the fluctuation of the foreign currencies against Baht would affect the Company's costs or performance. The Company has managed the risk from exchange rate by matching revenue with expenses in foreign currencies, i.e., Foreign Currency Deposit (FCD). When the project incurs any expenses in foreign currencies, the Company shall use funds in the FCD account to pay such expenses. However, at present, there are two projects deriving income in foreign currency, namely, the Xayaburi Hydroelectric Power Construction Project and the Nabong Substation Construction Project in the Lao People's Democratic Republic (the Lao PDR); and there are three projects incurring certain costs in foreign currencies, namely, (1) the Xayaburi Hydroelectric Power Construction Project; (2) the Nabong Substation Construction Project in the Lao People's Democratic Republic (the Lao PDR); and (3) the MRT Blue Line Project, Contract 6, which require procurement of certain equipment and services from overseas. The proportion of revenues denominated in foreign currencies as compared to the total revenues in the consolidated financial statements represented 6.1 percent; and the proportion of costs denominated in foreign currencies as compared to the total expenses in the consolidated financial statements represented 13.2 percent as at December 31, 2018.

Details of assets and liabilities denominated in foreign currencies as at December 31, 2018 in the consolidated financial statements can be summarized as follows:

Unit: Million

| Description  | As at December 31, 2018 |              |              |
|--|-------------------------|--------------|--------------|
|  | USD                     | YEN          | EURO         |
| <b>Assets</b>  |                         |              |              |
| Bank deposits  | 18.46                   | 39.56        | 46.72        |
| Trade accounts receivable and retention money              | 3.00                    | -            | -            |
| Accounts receivable and loans to related parties           | -                       | -            | -            |
| Advance payment to subcontractors and other current assets | -                       | -            | -            |
| <b>Total</b>   | <b>21.46</b>            | <b>39.56</b> | <b>46.72</b> |
| <b>Liabilities</b>   |                         |              |              |
| Short-term loans from financial institutions               | 8.85                    | -            | -            |
| Trade accounts payable and retention for construction      | 5.54                    | -            | 36.97        |
| Loans from related companies                               | -                       | -            | -            |
| <b>Total</b>   | <b>14.39</b>            | <b>-</b>     | <b>36.97</b> |
| Assets (Liabilities), net                                  | 7.07                    | 39.56        | 9.75         |
| Assets (Liabilities), net (Million Baht)*                  | 229.34                  | 11.60        | 362.15       |

Remark:: \* Average exchange rate, The Bank of Thailand at the close of December 31, 2018.



## Risk from Construction Material Price, Labor Cost and Fluctuation of Oil Price

The management of construction work contract in each project to gain the gross profit depends on the precise projection of the project cost and the control of the cost actually incurred within the specified projection. The factors of cost projection depend on not only construction material price and labor cost which fluctuate by the demand and supply circumstances, but also oil price, which is indirect cost towards the operating costs.

However, the Company group managed such risk through construction contracts in two manners as follows:

- In case of a construction contract with construction price adjustment in accordance with an escalation factor (K), such K factor would vary depending on the changing production costs, whereby such adjustment may not cover all increased costs of construction materials and labor, but would cover an increase of the construction material and labor prices beyond the projection, thereby giving rise to only a slight impact on the construction cost. As for the projects of the Company group, most customers were government sector, as at December 31, 2018, representing 51 percent of the remaining project value to be recognized as revenue in the future;
- In case of a construction contract with fixed costs or lump sum, whereby it does not specify or it is not possible to identify a K factor, which would mostly apply to turnkey projects, provisional sums would also be included to accommodate the case where the construction material costs would be included in the total project value. Most customers in this category were private sector, as at December 31, 2018, representing 49 percent of the remaining project value to be recognized in the revenue in the future.



## 3.6 Risk from Changes of Government's Policies

Given the fact that the Company group's revenue structure in the future from the total value of projects in hand which would be recognized as revenue in the future, as at December 31, 2018, representing 51 percent, amounting to Baht 25,327 Million, involves works for the government sector, and as at December 31, 2017, representing 52 percent, amounting to Baht 37,878 Million, involves works for the government sector. The Company group's revenue therefore relates to the national budget spending, which depends on the economic growth rate and investment climate, including the political stability. As for the government projects for which the contracts have already been signed, the Company group did not have any risk from economic and political circumstances since such projects would be supported by the allocated budgets in the form of tied budgets, which represent guarantee of budgets to be spent by the government in such projects. Nevertheless, in respect of the government projects which were awarded to the Company group, but the contracts have not yet been signed, the government may hold a new bidding for such project based on the justifications of each respective project.

The Company group reengineered to expand its channel of revenue sources by way of project investment and management. The Company group thus expanded its investments to business activities which would derive more definite revenue, such as, the Company's investments in Bangkok Expressway and Metro Public Company Limited, which manages the expressway projects and the M.R.T. Chaloem Ratchamongkhon Line; Pathum Thani Water Co., Ltd., which produces tap water for sale to the Provincial Waterworks Authority for distribution to the public in Pathum Thani Province; TTW Public Company Limited, which produces tap water for sale to the Provincial Waterworks Authority for distribution to the public in Samut Sakhon Province and Nakhon Pathom Province; CK Power Public Company Limited, which operates a business by holding shares in concession companies, e.g., SouthEast Asia Energy Limited, which generates electricity for distribution to the Electricity Generating Authority of Thailand; Nakhon Ratchasima Solar Limited, Chiangrai Solar Limited, Bangkhenchai Company Limited, which operate a business of solar cell power production plant; Bangpa-in Cogeneration Limited, which operates a business relating to public utilities on energy; and Xayaburi Power Company Limited, which would generate electricity for distribution to the Electricity Generating Authority of Thailand, etc. These projects are long-term concession projects which would not be affected by changes of government's policies.



### 3.7 Risk from Investments in Subsidiaries, Associated Companies, Jointly Controlled Entities, Related Companies and Other Companies

The Company group's structure comprises several subsidiaries, associated companies, including jointly controlled entities, related companies and other companies which accorded with the Company group's nature of business, namely, investment and construction of several projects, which are being implemented by different groups of investors. However, most jointly controlled entities are established with the objectives to carry out a few projects, and would be dissolved upon completion of the projects. In this respect, the number of companies or legal entities in the group would decrease accordingly. Risks that might be caused by investments in subsidiaries, associated companies, jointly controlled entities, related companies and other companies would be limited to the investments in each respective organization. In each investment, the Company would carefully conduct feasibility study of each project or company in addition to the consideration of the rate of return to be derived in the future. The Company might appoint third party advisors or specialists to serve in certain projects prior to submission of such matter to the Executive Board and the Board of Directors.

In this regard, the investment portfolios in the Company group generated share of profit and dividend income as follows:

(Unit: Thousand Baht)

#### Consolidated Financial Statements

| Company Name  | Share of Profit (Loss) from Investments in Associated Companies During the Year |                |
|---|---|----------------|
|   | 2018  | 2017           |
| Bangkok Expressway and Metro Public Company Limited | 1,479,706   | 822,044        |
| CK Power Public Company Limited                     | 178,402   | 1,210          |
| Kamala Senior Living Co., Ltd.                      | (478)   | (325)          |
| <b>Total</b>  | <b>1,657,630</b>  | <b>822,929</b> |

(Unit: Thousand Baht)

#### Separate Financial Statements

| Company Name  | Dividend Income from Investment During the Year |                  |
|---|---|------------------|
|   | 2018  | 2017             |
| Bangkok Expressway and Metro Public Company Limited | 603,476   | 549,855          |
| CK Power Public Company Limited                     | 45,456  | 127,216          |
| TTW Public Company Limited                          | 464,446   | 464,637          |
| CH. Karnchang-Tokyu Construction Co., Ltd.          | 27,500  | 33,000           |
| Other Companies                                     | 269   | 191              |
| <b>Total</b>  | <b>1,141,147</b>                                | <b>1,174,708</b> |



### 3.8 Risk from Loans to Subsidiaries, Associated Companies, Jointly Controlled Entities, Related Companies and Other Companies

CH. Karnchang Public Company Limited had risks from loans to subsidiaries, associated companies, related companies and jointly controlled entities, namely, loans were provided for use as working capital. As at December 31, 2018, the Company had a balance of loans and accrued interest receivable in respect of subsidiaries, associated companies, related companies and jointly controlled entities in the amount, net of allowance for doubtful accounts, of Baht 14,316.83 Million, representing 18.49 percent of the total assets of the Company's separate financial statements, and as at December 31, 2017, the Company had a balance of loans and accrued interest receivable in respect of subsidiaries, associated companies, related companies and jointly controlled entities in the amount, net of allowance for doubtful accounts, of Baht 14,924.36 Million, representing 19.62 percent of the total assets under the Company's separate financial statements. Such loans were used as working capital, subject to interest at the Minimum Loan Rate plus margin (MLR + margin) per annum and at fixed rates per annum, which shall become due for repayment upon demand.

- Moreover,
- 1) The Company had the warrants to purchase newly issued ordinary shares of an associated company (CK Power Public Company Limited).
  - 2) Subsidiaries were obligated to extend a fund to one associated company for use in development and management of the elderly residential project, in the remaining amount of Baht 253 Million.
  - 3) As at December 31, 2018, the Company provided guarantee for one of its subsidiaries, namely, CH. Karnchang (Lao) Co., Ltd. for credit facilities extended by banks and financial institutions in the total amount of Baht 23,728 Million for use in their construction projects.

Nevertheless, the Company has policies on management of risks that might occur from loans to subsidiaries, associated companies and jointly controlled entities, by accelerating and closely monitoring the debt repayment and significantly taking into account the necessity and justification of transactions as well as the Company's benefits. Such policies need to be approved by the Company's Audit Committee to scrutinize any possible consequences.

## 4. Assets for Business Operations

### 4.1 Summary of Property, Plant and Equipment

As at December 31, 2018, the Company and its subsidiaries had property, plant and equipment based on the book value, as follows:

| Type of Assets                             | Nature of Ownership | Cost<br>(Thousand Baht) | Net Value*<br>(Thousand Baht) | Obligations |
|--|---------------------|-------------------------|-------------------------------|-------------|
| (1) Land and Improvements                  | Owner               | 5,225,659               | 4,744,945                     | N/A         |
| (2) Buildings and Structures               | Owner               | 1,802,909               | 991,271                       | N/A         |
| (3) Building Improvement                   | Owner               | 111,748                 | 80,089                        | N/A         |
| (4) Machinery and Equipment                | Owner               | 6,774,512               | 3,029,813                     | N/A         |
| (5) Equipment, Furniture and Vehicles      | Owner               | 664,601                 | 93,568                        | N/A         |
| (6) Assets under Construction              | Owner               | 848,097                 | 848,097                       | N/A         |
| <b>Total Property, Plant and Equipment</b> |                     | <b>15,427,526</b>       | <b>9,787,783</b>              |             |

**Remark \*** Net value refers to the book value at cost less the accumulated depreciation costs and provision for loss from impairments.

#### 4.1.1 Land and Improvements

| Details of Land             | Ownership                                  | Number of<br>Title Deeds | Area<br>(Rai-Ngan-Square wah) | Cost** (Thousand<br>Baht) |
|-----------------------------|--|--------------------------|-------------------------------|---------------------------|
| 1. Bangkok                  | CH. Karnchang Plc.                         | 38                       | 30-0-39                       | 874,751                   |
| 2. Nonthaburi               | CH. Karnchang Plc.                         | 4                        | 2-1-48                        | 6,356                     |
| 3. Pathum Thani             | CH. Karnchang-Tokyu Construction Co., Ltd. | 1                        | 30-0-0                        | 7,844                     |
| 4. Samut Prakan             | CH. Karnchang Plc.                         | 14                       | 410-2-76                      | 1,417,934                 |
| 5. Chon Buri                | CH. Karnchang-Tokyu Construction Co., Ltd. | 1                        | 0-0-18                        | 2,880                     |
| 6. Saraburi                 | CH. Karnchang Plc.                         | 3                        | 38-3-39                       | 64,087                    |
| 7. Phra Nakhon Si Ayutthaya | CH. Karnchang Plc.                         | 54                       | 1,209-1-89                    | 1,343,969                 |
| 8. Chachoengsao             | CH. Karnchang Plc.                         | 20                       | 301-1-34                      | 151,945                   |
| 9. Chiang Mai               | CH. Karnchang Plc.                         | 5                        | 5-0-80                        | 141,191                   |
| 10. Krabi                   | CH. Karnchang Plc.                         | 5                        | 434-1-95                      | 46,234                    |
| 11. Prachin Buri            | CH. Karnchang Plc.                         | 21                       | 537-1-11                      | 141,199                   |
| 12. Prachuap Khiri Khan     | CH. Karnchang Plc.                         | 3                        | 13-0-76                       | 35,000                    |
| 13. Loei                    | CH. Karnchang Plc.                         | 5                        | 29-0-18                       | 34,432                    |
| 14. Samut Sakhon            | CH. Karnchang Plc.                         | 5                        | 49-3-2                        | 957,837                   |
| <b>Total</b>                |  |                          |                               | <b>5,225,659</b>          |

**Remark: \*\*** The cost refers to the original cost of land, together with cost of land improvement.

#### 4.1.2 Office Buildings

| Details of Buildings  | Ownership                                     | Location                    | Cost<br>(Thousand Baht) |
|---|---|-----------------------------|-------------------------|
| 1. Office building, materials store, canteen, laboratory                          | CH. Karnchang Plc.                            | Bangkok                     | 530,225                 |
| 2. Office building, staff residence, materials store                              | CH. Karnchang Plc.                            | Phra Nakhon<br>Si Ayutthaya | 297,186                 |
| 3. Office building, materials store, tool center                                  | CH. Karnchang-Tokyu Construction<br>Co., Ltd. | Pathum Thani                | 21,507                  |
| 4. Temporary building   | CH. Karnchang-Tokyu Construction<br>Co., Ltd. | Chon Buri                   | 400                     |
| 5. Office building, warehouse building  | CH. Karnchang Plc.                            | Loei                        | 22,502                  |
| 6. Office building, materials store, canteen, stone mill,<br>concrete mixer plant | CH. Karnchang (Lao) Co., Ltd.                 | Lao PDR                     | 707,978                 |
| 7. Office building, asphalt plant   | BBCD Joint Venture                            | Samut Prakan                | 3,297                   |
| 8. Office building, residential building, parking area, canteen                   | CKCH Joint Venture                            | Khon Kaen                   | 219,814                 |
| Total   |   |                             | 1,802,909               |



## 4.2 Real Estate for Investment

As at December 31, 2018, the Company and its subsidiaries had real estate for investment based on the book value, as follows:

| Type of Assets               | Nature of Ownership | Net Value*<br>(Thousand Baht) | Obligations |
|------------------------------|---------------------|-------------------------------|-------------|
| 1. Land                      | Owner               | 419,381                       | None        |
| 2. Building Offices for Rent | Owner               | 150,172                       | None        |
| Total                        |                     | 569,553                       |             |

Remark: \*\* Net value refers to the book value at cost less the accumulated depreciation costs and provision for loss from impairments.



## 4.3 Significant Intangible Assets as at December 31, 2018

As at December 31, 2018, the Company and its subsidiaries had intangible assets based on the book value, as follows:

| Type of Assets       | Nature of Ownership | Net Value* (Thousand Baht) | Obligations |
|----------------------|---------------------|----------------------------|-------------|
|                      |                     | As at December 31, 2018    |             |
| 1. Computer Software | Owner               | 40,138                     | None        |

Remark: \*\* Net value refers to the book value at cost less the accumulated depreciation costs and provision for loss from impairments.





## 4.4 Investment in Other Companies

### 4.4.1 Summary of Investment Value of the Company and its Subsidiaries

As at December 31, 2018, the book value of investment in other companies under the consolidated financial statements of the Company was as follows:

Unit: Million Baht

| Company Name   | Book Value under Cost Method<br>as at December 31, 2018 | Investment<br>Percentage<br>(percent) | Investment<br>Category |
|--|---|---------------------------------------|------------------------|
| 1. CH. Karnchang Real Estate Co., Ltd.                       | 158,400   | 99.00                                 | Subsidiary             |
| Less Provision for loss from investment in subsidiary        | (1,559)   |                                       |                        |
|  | 156,841   |                                       |                        |
| 2. CH. Karnchang-Tokyu Construction Co., Ltd.                | 110,000   | 55.00                                 | Subsidiary             |
| 3. CH. Karnchang (Lao) Co., Ltd.                             | 39,636  | 100.00                                | Subsidiary             |
| 4. Bangkok Expressway and Metro Public Company Limited       | 20,025,367  | 31.78                                 | Associated Company     |
| 5. CK Power Public Company Limited                           | 4,540,846   | 27.22                                 | Associated Company     |
| 6. Kamala Senior Living Co., Ltd.                            | 20,000  | 20.00                                 | Associated Company     |
| 7. TTW Public Company Limited                                | 1,255,736   | 19.40                                 | Other Company          |
| 8. Bangkok Tokyu Department Store Company Limited            | 2,280   | 19.00                                 | Other Company          |
| 9. Kruasakul Company Limited                                 | 43,750  | 10.14                                 | Other Company          |
| Less Provision for loss on diminution in value of investment | (43,750)  |                                       |                        |
|  | 0   |                                       |                        |
| 10. The Bangkok Club Company Limited                         | 3,000   | 0.57                                  | Other Company          |
| 11. Chanthaburi Country Club Company Limited                 | 2,708   | 0.25                                  | Other Company          |
| 12. Saha Tokyu Corporation Company Limited                   | 16,600  | 5.00                                  | Other Company          |
| 13. JR Kyushu Capital Management (Thailand) Co., Ltd.        | 21,250  | 17.00                                 | Other Company          |

### 4.4.2 Investment Policy

The Company has a policy to invest in such businesses which are relevant to the Company's primary business as follows:

**Infrastructure Concession Projects:** The Company considers that the results of operation of such business shall result in return, and enhance the Company's long-term cash flow, namely, the water production and distribution concession project in Pathum Thani Province for the Provincial Waterworks Authority, the MRTA Initial System Project, Chaloe Ratchamongkhon Line, and the water production and distribution project in Nakhon Pathom and Samut Sakhon Provinces for the Provincial Waterworks Authority, projects of design, development, construction and operation of the Nam Ngum 2 Hydroelectric Power Project and the Xayaburi Hydroelectric Power Project for production and distribution of electricity to the Electricity Generating Authority of Thailand, project of design, development, construction and operation of the Small Power Producers (SPP) for production and distribution of electricity and steam to the Electricity Generating Authority of Thailand and industrial operators in Bang Pa-in Industrial Estate, and project of business for production of electricity from solar power, etc.

**Construction Business, including Joint Ventures:** The Company also jointly invested with other investors with expertise in specific areas in major infrastructure construction projects, namely, expressway construction projects and the MRTA projects, which require specific techniques or know-how. In addition to the financial return to be received by the joint ventures and the Company, the Company will also benefit from new technology transfer from such joint ventures. Furthermore, it is clear that the joint ventures in the Company group earn satisfactory rates of return on investment.

With regard to the management principles, the Company shall appoint its representatives to jointly participate in the management, in cooperation with representatives of major shareholders according to the shareholding ratio. The decisions on various policies shall be mutually agreed upon among the major shareholders. In this regard, the investment ratio shall take into account the suitability and the rate of return of such project, along with other related factors, such as, technology and size of the project, etc. As for investment in subsidiaries, the Company shall appoint its representatives to act as executives. As for investment in joint ventures, the Company shall appoint its representatives to participate in the management and operations, whereby the roles and responsibilities shall be clearly allocated among other joint venture partners. However, the Company does not have any specific criteria as to its representation in the management of the joint ventures.





## 5. Legal Disputes

The Company or the subsidiaries have no legal disputes, to which the Company or the subsidiaries are a party or respondent, and which would give rise to negative impact on the assets of the Company or of the subsidiaries by more than 5 percent of the shareholders' equity as at the most recent accounting year end, and there is no lawsuit which would significantly affect the Company's business operations. In addition, the Company has no material lawsuit which is not resulted from the Company's ordinary course of business.

In 2000, Joint Venture BBCD claimed the increased costs from the Expressway Authority of Thailand (the employer), whereby the employer's consulting engineer considered the Joint Venture's claim and issued a letter confirming and accepting the certification of such increased costs. The Arbitral Tribunal then issued its arbitral award requiring the employer to pay the increased costs, together with interest, to the Joint Venture. Subsequently, the employer issued a letter notifying the Joint Venture that the employer had considered the matter and deemed it appropriate to comply with such arbitral award. On this ground, the Joint Venture recorded such amount as its assets and revenue in the financial statements for 2001 in proportion to the Company group's participation in the Joint Venture, representing approximately Baht 2,500 Million.

Due to the delay in payment of such costs, the Joint Venture filed a lawsuit against the employer with the Civil Court to enforce compliance with the said arbitral award. On December 30, 2003, the Civil Court adjudged enforcing compliance with the arbitral award, by requiring the Expressway Authority of Thailand (the employer) to make such payment to the Joint Venture in accordance with the arbitral award. Later in January 2004, the employer filed an appeal with the Supreme Court.

On February 15, 2007, the Supreme Court adjudicated reversing the Civil Court's judgment which enforced the arbitral award requiring the employer to make such payment to Joint

Venture BBCD. The Joint Venture therefore recorded an allowance for doubtful accounts in full for accounts receivable for - claims for additional costs as expenses in profit or loss for 2006 in proportion to the Company group's participation in the Joint Venture, representing approximately Baht 2,500 Million.

Subsequently, after the thorough study of the details of the judgment of the Supreme Court, the Company's management filed a lawsuit against the employer with the Civil Court on February 11, 2008 to claim the costs paid by Joint Venture BBCD from the employer on charge of undue enrichment, bringing the costs included interest calculated until the date of the plaint to approximately Baht 3,400 Million (in proportion to the Company group's participation in the Joint Venture).

On September 15, 2011, the Civil Court adjudged requiring the employer to make payment to Joint Venture BBCD in the amount of Baht 1,750 Million (in proportion to the Company group's participation in the Joint Venture), together with interest at the rate of 7.5 percent per annum from such principal from February 15, 2007 until the employer would make such payment to Joint Venture BBCD in full. The employer and Joint Venture BBCD filed their appeals with the Appeal Court.

On December 27, 2013, the Appeal Court adjudicated reversing the Civil Court's judgment, thereby dismissing Joint Venture BBCD's plaint on the grounds that at the time when the Plaintiff and the Defendant executed the turnkey contract in dispute, both parties were well aware that the Defendant was not yet ready to deliver the construction site under the contract to the Plaintiff, and as a result, several problems subsequently arose after the date of execution of the contract, which were raised by the Plaintiff to request an extension of time for the construction period and claim the increased costs. Therefore, it must be deemed that the Plaintiff executed the turnkey contract in dispute with the Defendant whereby the Plaintiff

agreed to accept potential risks relating to burden of additional costs for design and construction of the expressway project, and as such, the Plaintiff may not demand the Defendant to return the expressway project to the Plaintiff under Section 411 of the Civil and Commercial Code despite the fact that the Defendant had accepted the delivery of the project from the Plaintiff before the Supreme Court rendered the judgment, in which case, it was deemed that the Defendant had accepted the project in good faith. Furthermore, as the Supreme Court did not adjudge that the turnkey contract in dispute was null and void, but only refused to enforce compliance with the arbitral award, and the Court of First Instance did not have jurisdiction over such issue, it was then no longer required to decide on other issues in the Defendant's appeal, particularly the issues as to whether or not the Plaintiff had power to file its plaint; the Plaintiff's plaint was barred by prescription; and the Plaintiff's plaint was repeated, since the Appeal Court's judgment would not change. Thus, the Defendant was not required to return the expressway project to the Plaintiff on charge of undue enrichment nor pay additional costs, together with interest, nor deliver any interest from toll revenue to the Plaintiff under the plaint. Therefore, the Court of First Instance's judgment was opposed to the Appeal Court's opinion.

Subsequently, in February 2014, Joint Venture BBCE led an appeal with the Supreme Court to demand the employer to pay all increased costs, together with interest, until the payment would be made in full.

On June 22, 2017, the Supreme Court adjudicated dismissing Joint Venture BBCE's plaint under the Appeal Court. Currently, the Company is studying to find out guidelines and legal issues for further litigating the case. For that reason, the Company has had the legal advisor study various guidelines for proceeding with such case for submission to the management for consideration in the near future.



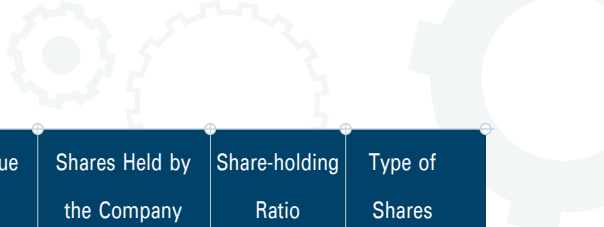
## 6. General Information and Other Significant Information

### 6.1 General Information

|                              |   |  |
|------------------------------|---|--|
| (1) Company Profile          | : | CH. Karnchang Public Company Limited   |
| Head Office                  | : | 587 Viriyathavorn Building, Sutthisarnvinitchai Road,<br>Ratchadaphisek Subdistrict, Dindaeng District,<br>Bangkok 10400   |
| Telephone                    | : | 66(0) 2277-0460, 66(0) 2275-0026   |
| Fax                          | : | 66(0) 2275-7029  |
| Website                      | : | www.ch-karnchang.co.th   |
| Business Category            | : | To operate the business of general contract construction for<br>government agencies, state enterprises and private entities,<br>in the form of main contractor, subcontractor or joint venture<br>or consortium. |
| Registration No.             | : | 0107537002575  |
| Registered Capital           | : | Baht 1,693,899,970   |
| Divided into Ordinary Shares | : | 1,693,899,970 shares   |
| Par Value                    | : | Baht 1 per share   |
| Paid-up Capital              | : | Baht 1,693,896,872   |

#### (2) The Company invests in each of its subsidiaries as follows:

| Company Name  | Business Category   | Total Number<br>of Shares | Par Value | Shares Held by<br>the Company | Share-holding<br>Ratio | Type of<br>Shares  |
|---|---|---------------------------|-----------|-------------------------------|------------------------|--------------------|
| 1. CH. Karnchang Real Estate Co., Ltd.<br><br>The head office is located at<br>No. 587 Sutthisarnvinitchai Road,<br>Ratchadaphisek Subdistrict,<br>Dindaeng District, Bangkok<br>Telephone 66(0) 2275-0026<br>Fax 66(0) 2275-7029 | Trading of Land, Allocation<br>of Land and<br>Residential Buildings | 1,600,000                 | Baht 100  | 1,584,000                     | 99.00%                 | Ordinary<br>Shares |



| Company Name  | Business Category   | Total Number of Shares | Par Value | Shares Held by the Company                                       | Share-holding Ratio | Type of Shares     |
|---|---|------------------------|-----------|--|---------------------|--------------------|
| 2. Phrompratharn Construction Co., Ltd.<br><br>The head office is located at<br><br>No. 587 Sutthisarnvitchai Road,<br><br>Ratchadaphisek Subdistrict,<br><br>Dindaeng District, Bangkok<br><br>Telephone 66(0) 2275-0026<br><br>Fax 66(0) 2275-7029  | Contract for Construction   | 1,000,000              | Baht 100  | 990,000 shares held<br>by CH. Karnchang<br>Real Estate Co., Ltd. | 99.00%              | Ordinary<br>Shares |
| 3. Prasertvit Construction Co., Ltd.<br><br>The head office is located at No. 587<br>Sutthisarn Road, Ratchadaphisek<br>Subdistrict, Dindaeng District, Bangkok<br><br>Telephone 66(0) 2275-0026<br><br>Fax 66(0) 2275-7029   | Contract for Construction   | 200,000                | Baht 100  | 198,000 shares held<br>by CH. Karnchang<br>Real Estate Co., Ltd. | 99.00%              | Ordinary<br>Shares |
| 4. CH. Karnchang-Tokyu Construction<br>Co., Ltd. The head office is located at<br><br>No. 587, 7 <sup>th</sup> - 8 <sup>th</sup> Floors,<br><br>Viriyathavorn Building, Sutthisarn Road,<br><br>Ratchadaphisek Subdistrict,<br><br>Dindaeng District, Bangkok<br><br>Telephone 66(0) 2275-3651-5<br><br>Fax 66(0) 2275-3657 | Contract for All Kinds of<br>Construction   | 2,000,000              | Baht 100  | 1,099,999  | 55.00%              | Ordinary<br>Shares |
| 5. CH. Karnchang (Lao) Co., Ltd.*<br><br>The head office is located at Ban Xiang<br>Yuen, Chantaburi District, Vientiane  | Operation of Business of<br>Construction of the Nam Ngum<br>2 Hydroelectric Power Dam |                        |           |  |                     |                    |

Remark: \*CH. Karnchang (Lao) Co., Ltd. has paid-up share capital of USD 1,000,000, 100% of which is invested by CH. Karnchang Public Company Limited.

(3) The Company also invests in other companies through a shareholding ratio of at least 10 percent of the number of shares sold in each company as follows:

| Company Name   | Business Category  | Total Number of Shares | Par Value | Shares Held by the Company | Share-holding Ratio | Type of Shares  |
|--|--|------------------------|-----------|----------------------------|---------------------|-----------------|
| 1. TTW Public Company Limited<br>The head office is located at No. 30/130 Moo 12, Buddhamonthon 5 Road, Tambon Rai Khing, Amphoe Sam Phran, Nakhon Pathom Province<br>Telephone 66(0) 2811-7526<br>Fax 66(0) 2811-7687   | Supply and Development of Projects for Production and Distribution of Tap Water  | 3,990,000,000          | Baht 1    | 774,077,400                | 19.40%              | Ordinary Shares |
| 2. Pathum Thani Water Co., Ltd. <sup>1</sup><br>The head office is located at No. 43 Moo 3, Chiang Rak Noi - Bang Sai Road, Tambon Ban Pathum, Amphoe Sam Khok, Pathumthani Province 12160<br>Telephone 66(0) 2979-8530-2<br>Fax 66(0) 2979-8533                             | Supply and Development of Projects for Production and Distribution of Tap Water under Arrangement with the Provincial Waterworks Authority | 12,000,000             | Baht 100  | -                          | -                   | Ordinary Shares |
| 3. CK Power Public Company Limited<br>The head office is located at No. 587, 19 <sup>th</sup> Floor, Viriyathavorn Building, Sutthisan Winitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok<br>Telephone 66(0) 2691-9720-2<br>Fax 66(0) 2691-9723          | Operation of Business by Holding Shares in Other Companies (Holding Company)   | 7,370,000,000          | Baht 1    | 2,006,275,478              | 27.22%              | Ordinary Shares |
| 4. SouthEast Asia Energy Limited <sup>2</sup><br>The head office is located at No. 587, 20 <sup>th</sup> Floor, Viriyathavorn Building, Sutthisan Winitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok<br>Telephone 66(0) 2275-4873<br>Fax 66(0) 2691-8307 | Operation of Business of All Types of Power Plants and Distribution of Electricity inside and outside Thailand                             | 660,675,000            | Baht 10   | -                          | -                   | Ordinary Shares |



| Company Name  | Business Category   | Total Number of Shares | Par Value | Shares Held by the Company | Share-holding Ratio | Type of Shares  |
|---|---|------------------------|-----------|----------------------------|---------------------|-----------------|
| 5. Bangpa-in Cogeneration Limited <sup>3</sup><br>The head office is located at No. 587<br>Sutthisarnvinitchai Road, Ratchadaphisek<br>Subdistrict, Dindaeng District, Bangkok<br>Telephone 66(0) 2275-4364<br>Fax 66(0) 2691-9951  | Operation of Business of Power Plants, including Businesses Relating to Electricity and All Types of Energies                                   | 270,500,000            | Baht 10   | -                          | -                   | Ordinary Shares |
| 6. Bangkhenchai Company Limited <sup>4</sup><br>The head office is located at No. 587<br>Sutthisarnvinitchai Road, Ratchadaphisek<br>Subdistrict, Dindaeng District, Bangkok<br>Telephone 66(0) 2691-9720-2<br>Fax 66(0) 2691-9723  | Operation of Business of All Types of Power Plants  | 2,342,500              | Baht 100  | -                          | -                   | Ordinary Shares |
| 7. Nakhon Ratchasima Solar Company Limited <sup>5</sup><br>The head office is located at No. 23/30,<br>14 <sup>th</sup> Floor, Sorachai Building, Soi Sukhumvit 63,<br>Sukhumvit Road, North Klongton Subdistrict,<br>Wattana District, Bangkok<br>Telephone 66(0) 2714-2400<br>Fax 66(0) 2714-2401 | Operation of Business of All Types of Power Plants  | 2,215,000              | Baht 100  | -                          | -                   | Ordinary Shares |
| 8. Chiang Rai Solar Company Limited <sup>6</sup><br>The head office is located at No. 23/30,<br>14 <sup>th</sup> Floor, Sorachai Building, Soi Sukhumvit 63,<br>Sukhumvit Road, North Klongton Subdistrict,<br>Wattana District, Bangkok<br>Telephone 66(0) 2714-2400<br>Fax 66(0) 2714-2401        | Operation of Business of All Types of Power Plants  | 2,917,500              | Baht 100  | -                          | -                   | Ordinary Shares |
| 9. Xayaburi Power Company Limited <sup>7</sup><br>The head office is located at Ban Xiang<br>Yuen, Chantaburi District, Vientiane   | Construction and Operation of the Xayaburi Hydroelectric Power Project  | 2,686,100,000          | Baht 10   | -                          | -                   | Ordinary Shares |
| 10. Bangkok Expressway and Metro Public<br>Company Limited<br>The head office is located at No. 587<br>Sutthisarn Road, Ratchadaphisek Subdistrict,<br>Dindaeng District, Bangkok<br>Telephone 66(0) 2354-2000<br>Fax 66(0) 2354-2000   | Provision of Services of Expressways and Mass Rapid Transit Railway System, and Commercial Development relating to Metro and Expressway Systems | 15,285,000,000         | Baht 1    | 4,722,121,829              | 30.89%              | Ordinary Shares |

| Company Name  | Business Category  | Total Number of Shares | Par Value | Shares Held by the Company | Share-holding Ratio | Type of Shares  |
|---|--|------------------------|-----------|----------------------------|---------------------|-----------------|
| 11. Northern Bangkok Expressway Company Limited <sup>8</sup><br>The head office is located at No. 587<br>Sutthisarn Road, Ratchadaphisek<br>Subdistrict, Dindaeng District, Bangkok<br>Telephone 66(0) 2641-4611<br>Fax 66(0) 2641-4610 | Construction and<br>Management of the Udon<br>Rattaya Expressway | 600,000,000            | Baht 10   | -                          | -                   | Ordinary Shares |
| 12. Bangkok Metro Networks Limited <sup>9</sup><br>The head office is located at No. 832<br>Sutthisarn Road, Ratchadaphisek<br>Subdistrict, Dindaeng District, Bangkok<br>Telephone 66(0) 2690-8200<br>Fax 66(0) 2690-8212              | Operation of Commercial<br>Development Business                  | 25,400,000             | Baht 10   | -                          | -                   | Ordinary Shares |

- Remarks: <sup>1</sup> CH. Karnchang Public Company Limited indirectly holds shares in Pathum Thani Water Co., Ltd. via TTW Public Company Limited, namely, CH. Karnchang Public Company Limited currently holds shares representing 19.40 percent in TTW Public Company Limited, and TTW Public Company Limited holds shares representing 98.00 percent in Pathum Thani Water Co., Ltd.
- <sup>2</sup> CH. Karnchang Public Company Limited indirectly holds shares in SouthEast Asia Energy Limited via CK Power Public Company Limited, namely, CH. Karnchang Public Company Limited currently holds shares representing 27.22 percent in CK Power Public Company Limited and CK Power Public Company Limited holds shares representing 56.00 percent in SouthEast Asia Energy Limited.
- <sup>3</sup> CH. Karnchang Public Company Limited indirectly holds shares in Bangpa-in Cogeneration Limited via CK Power Public Company Limited, namely, CK Power Public Company Limited currently holds shares representing 65.00 percent in Bangpa-in Cogeneration Limited.
- <sup>4</sup> CH. Karnchang Public Company Limited indirectly holds shares in Bangkhenchai Company Limited via CK Power Public Company Limited, namely, CK Power Public Company Limited currently holds shares representing 99.99 percent in Bangkhenchai Company Limited.
- <sup>5</sup> CH. Karnchang Public Company Limited indirectly holds shares in Nakhon Ratchasima Solar Company Limited via CK Power Public Company Limited, namely, CK Power Public Company Limited currently holds shares representing 30.00 percent in Nakhon Ratchasima Solar Limited.
- <sup>6</sup> CH. Karnchang Public Company Limited indirectly holds shares in Chiang Rai Solar Company Limited via CK Power Public Company Limited, namely, CK Power Public Company Limited currently holds shares representing 30.00 percent in Chiang Rai Solar Company Limited.
- <sup>7</sup> CH. Karnchang Public Company Limited indirectly holds shares in Xayaburi Power Company Limited via CK Power Public Company Limited, namely, CK Power Public Company Limited currently holds shares representing 37.50 percent in Xayaburi Power Company Limited.
- <sup>8</sup> CH. Karnchang Public Company Limited indirectly holds shares in Northern Bangkok Expressway Company Limited via Bangkok Expressway and Metro Public Company Limited, namely, Bangkok Expressway and Metro Public Company Limited currently holds shares representing 99.99 percent in Northern Bangkok Expressway Company Limited.
- <sup>9</sup> CH. Karnchang Public Company Limited indirectly holds shares in Bangkok Metro Networks Limited via Bangkok Expressway and Metro Public Company Limited, namely, Bangkok Expressway and Metro Public Company Limited currently holds shares representing 69.67 percent in Bangkok Metro Networks Limited.

(4) The Company also invests in the form of joint venture as follows:

| Joint Venture Name  | Nature of Work  | Investment Ratio |
|---|---|------------------|
| <p>1. Joint Venture CKET comprising CH. Karnchang Public Company Limited and Expert Transport Co., Ltd.</p> <p>The head office is located at No. 587 Sutthisarnvinitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok</p> <p>Telephone 66(0) 2275-0026, Fax 66(0) 2354-1919</p>   | <p>Project Operation and Management under the Agreement for Concession for Design, Manufacture, Delivery, Installation, Testing and Commissioning of M&amp;E Equipment and for Operation and Maintenance of the MRTA Initial System, Chaloem Ratchamongkhon Line</p>      | 99.99%           |
| <p>2. Joint Venture BBCT comprising CH. Karnchang Public Company Limited, Bilfinger + Berger Bauaktiengesellschaft, Tokyu Construction Co., Ltd. and CH. Karnchang-Tokyu Construction Co., Ltd.</p> <p>The head office is located at No. 587 Sutthisarnvinitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok</p> <p>Telephone 66(0) 2275-0026, Fax 66(0) 2275-7029</p> | <p>Construction of the (Bang Pa-in - Pak Kret) Expressway (Sectors D and C1 A)</p>  | 99.97%           |
| <p>3. Joint Venture BBCT comprising Bilfinger Berger AG, CH. Karnchang Public Company Limited and Walter Bau AG</p> <p>The head office is located at No. 587 Sutthisarnvinitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok</p> <p>Telephone 66(0) 2275-0026, Fax 66(0) 2275-7029</p>   | <p>Construction of the (Bang Na - Bang Pli - Bangkok) Expressway</p>  | 35.00%           |
| <p>4. CKTC Joint Venture comprising CH. Karnchang Public Company Limited and Tokyu Construction Co., Ltd.</p> <p>The head office is located at No. 587 Sutthisarnvinitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok</p> <p>Telephone 66(0) 2275-0026, Fax 66(0) 2275-7029</p>   | <p>Operations for Construction Project of the MRT Purple Line, Bang Yai - Rat Burana, Bang Yai - Bang Sue Section; Contract 1: Elevated Structures (East)</p>   | 70.00%           |
| <p>5. CH. Karnchang-Krung Thon Engineers Joint Venture comprising CH. Karnchang Public Company Limited and Krung Thon Engineers Company Limited</p> <p>The head office is located at No. 587 Sutthisarnvinitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok</p> <p>Telephone 66(0) 2275-0026, Fax 66(0) 2275-7029</p>   | <p>Operations for Construction of Phra Ong Chao Chaiyanuchit Canal Conduit System - Bang Phra Reservoir and Appurtenant Structures Contract 1 Project, Project for Diversion of Water from Eastern Chao Phraya River Basin - Bang Phra Reservoir, Chon Buri Province.</p> | 60.00%           |
| <p>6. CKCH Joint Venture comprising CH. Karnchang Public Company Limited and Ch. Tawee Construction Co., Ltd.</p> <p>The head office is located at No. 587 Sutthisarnvinitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok</p> <p>Telephone 66(0) 2275-0026, Fax 66(0) 2275-7029</p>   | <p>Operations for Double Track Railroad Construction Project, Chira Junction - Khon Kaen Section</p>  | 70.00%           |

| Joint Venture Name  | Nature of Work   | Investment Ratio |
|---|--|------------------|
| <p>7. CKST Joint Venture comprising CH. Karnchang Public Company Limited and Sino-Thai Engineering &amp; Construction Public Company Limited</p> <p>The head office is located at No. 587 Sutthisarn Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok</p> <p>Telephone 66(0) 2275-0026, Fax 66(0) 2275-7029</p> | <p>Operations for Construction of the MRT Orange Line Project (East Section), Contracts 1, 2 and 5</p> | 60.00%           |

**Securities Registrar** : Thailand Securities Depository Co., Ltd.

93 Ratchadaphisek Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok 10400

Telephone 0-2009-9000, Fax 0-2009-9991

**Auditors** :

Miss Siraporn Ouannunkun CPA License No. 3844

Mr. Chatchai Kasemsrithanawat CPA License No. 5813

Miss Chonlaros Suntiasvaraporn CPA License No. 4523

EY Office Limited

33<sup>rd</sup> Floor, Lake Rajada Office Complex, 193/136-137 New Rajadapisek Road, Klongtoey District, Bangkok 10110

Telephone 0-2264-0777

Fax 0-2264-0789-90

**Legal Advisor** : The Legists Group

990 Abdulrahim Place, 9<sup>th</sup> Floor, Room 901-1 Rama IV Road, Silom Subdistrict Bangrak District, Bangkok 10500

Telephone 0-2636-1111

Fax 0-2636-0000

**Debenture Holder Representative** : CIMB Thai Bank Public Company Limited

44 Langsuan Road, Lumpini Subdistrict Patumwan District, Bangkok 10330

Telephone 0-2638-8112, 0-2626-7218, 0-2626-7503

Fax 0-2626-7543

**6.2 Other Significant Information** : None.

Part



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## 7. Information on Securities and Shareholders

### 7.1 Registered and paid-up capital

(1) As at December 31, 2018, the Company's registered capital amounts to Baht 1,693,899,970, divided into 1,693,899,970 ordinary shares at the par value of Baht 1 per share, Baht 1,693,896,872 of which has been paid up, divided into 1,693,896,872 ordinary shares at the par value of Baht 1 per share.

(2) The Company does not have any other type of shares providing rights or conditions differing from those of the ordinary shares.

(3) The Company neither has any plan to offer shares or convertible securities to the Thai Trust Fund, nor issues non-voting depository receipts (NVDR).

### 7.2 Shareholders

#### (1) Major shareholders

##### (a) Top ten major shareholders

Major Shareholders as at August 28, 2018 (As of the most recent date of closing the shareholder register)

|      | Shareholders  | Total Shares | Shareholding (%) |
|------|---|--------------|------------------|
| 1    | Trivisvavet Family  | 570,622,888  | 33.686           |
| 1.1  | Mr. Plew Trivisvavet                                      | 13,631,497   | 0.805            |
| 1.2  | Mrs. Saikasem Trivisvavet                                 | 6,061,142    | 0.358            |
| 1.3  | Mrs. Pranee Tongkittikul                                  | 4,614,342    | 0.272            |
| 1.4  | Mr. Nattavut Trivisvavet                                  | 2,405,785    | 0.142            |
| 1.5  | Miss Supamas Trivisvavet                                  | 1,700,000    | 0.100            |
| 1.6  | Mr. Sittidej Trivisvavet                                  | 1,550,000    | 0.092            |
| 1.7  | Mr. Puwanet Trivisvavet                                   | 1,109,255    | 0.065            |
| 1.8  | Miss Sawanya Trivisvavet                                  | 835,225      | 0.049            |
| 1.9  | Mrs. Korakot Trivisvavet                                  | 1,030,250    | 0.061            |
| 1.10 | Mr. Prasert Trivisvavet                                   | 184,285      | 0.011            |
| 1.11 | Mr. Krittinun Suwanpitak                                  | 44,000       | 0.002            |
| 1.12 | Mahasiri Siam Co., Ltd. <sup>1</sup>                      | 280,012,365  | 16.531           |
| 1.13 | CH. Karnchang Holding Co., Ltd. <sup>2</sup>              | 171,396,530  | 10.118           |
| 1.14 | CK. Office Tower Co., Ltd. <sup>3</sup>                   | 86,048,212   | 5.080            |
| 2    | Thai NVDR Co., Ltd. <sup>4</sup>                          | 56,672,419   | 3.346            |
| 3    | Bangkok Bank Public Company Limited                       | 38,950,000   | 2.299            |
| 4    | SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED <sup>5</sup> | 31,252,900   | 1.845            |
| 5    | UOB KAY HIAN (HONG KONG) LIMITED - Client Account         | 29,669,300   | 1.752            |
| 6    | Krungsri Dividend Stock LTF (KFLTFDIV)                    | 17,875,900   | 1.055            |
| 7    | The Viriyah Insurance Public Company Limited              | 15,545,200   | 0.918            |
| 8    | Mrs. Sopida Trivisvavet                                   | 15,383,225   | 0.908            |
| 9    | Mr. Winai Teawsomboonkij                                  | 13,952,500   | 0.824            |
| 10   | K Equity 70:30 LTF  | 12,514,165   | 0.739            |



Remarks: <sup>1</sup> Mahasiri Siam Co., Ltd.'s shareholders comprise:

| Major Shareholders        | Total Shares     | Shareholding (%) |
|---------------------------|------------------|------------------|
| Mr. Thavorn Trivisvavet   | 2,411,473        | 26.80            |
| Mr. Prasert Trivisvavet   | 2,281,895        | 25.35            |
| Mr. Plew Trivisvavet      | 1,993,633        | 22.15            |
| Mr. Thep Trivisvavet      | 937,837          | 10.42            |
| Mr. Kamthorn Trivisvavet  | 753,948          | 8.38             |
| Mrs. Chonthida Suwanvit   | 621,213          | 6.90             |
| Mrs. Saikasem Trivisvavet | 1                | 0.00             |
| <b>Total</b>              | <b>9,000,000</b> | <b>100.00</b>    |

<sup>2</sup> CH. Karnchang Holding Co., Ltd.'s shareholders comprise:

| Major Shareholders             | Total Shares     | Shareholding (%) |
|--------------------------------|------------------|------------------|
| Mahasiri Siam Co., Ltd.        | 2,100,000        | 25.00            |
| Mrs. Panicha Padphaiboon       | 1,050,000        | 12.50            |
| Namphol Construction Co., Ltd. | 1,050,000        | 12.50            |
| Cholavet Civil Co., Ltd.       | 1,050,000        | 12.50            |
| Tawornwong Co., Ltd.           | 1,050,000        | 12.50            |
| Vetprasert Co., Ltd.           | 1,050,000        | 12.50            |
| Ekkamthorn Co., Ltd.           | 1,050,000        | 12.50            |
| <b>Total</b>                   | <b>8,400,000</b> | <b>100.00</b>    |

<sup>3</sup> CK. Office Tower Co., Ltd.'s shareholders comprise:

| Major Shareholders       | Total Shares     | Shareholding (%) |
|--------------------------|------------------|------------------|
| Mahasiri Siam Co., Ltd.  | 750,000          | 25.00            |
| Mr. Thavorn Trivisvavet  | 375,000          | 12.50            |
| Mr. Plew Trivisvavet     | 375,000          | 12.50            |
| Mr. Prasert Trivisvavet  | 375,000          | 12.50            |
| Mr. Thep Trivisvavet     | 375,000          | 12.50            |
| Mr. Yim Trivisvavet      | 375,000          | 12.50            |
| Mr. Kamthorn Trivisvavet | 375,000          | 12.50            |
| <b>Total</b>             | <b>3,000,000</b> | <b>100.00</b>    |

<sup>4</sup> This is a subsidiary established by the Stock Exchange. NVDR represents automatically listed securities. NVDR investors enjoy the same financial privileges as investment in ordinary shares of companies, except that they have no right to vote in shareholders' meetings.

<sup>5</sup> This is a company registered abroad and trades securities on the Stock Exchange of Thailand without disclosing if its shareholding is for its own interest or for others, and the Company is not in a position to request the shareholder to disclose such information.

(b) None of the Company's major shareholders has, by circumstances, any material influence over the determination of policies on management or operations of the Company.

**Increase or Decrease in Direct and Indirect Shareholding by Directors and Executives until December 31, 2018**

| Name of Director/Executive       | Brought Forward<br>as at January 1, 2018 | Change      |           | Balance as at<br>December 31, 2018 |
|----------------------------------|--|-------------|-----------|------------------------------------|
|                                  |  | Acquisition | Disposal  |                                    |
| Mr. Aswin Kongsiri               | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Plew Trivisvavet             | 13,631,497                               | -           | -         | 13,631,497                         |
| Spouse and minor child           | 5,061,142                                | 1,000,000   | -         | 6,061,142                          |
| Mr. Vitoon Tejatussanasoontorn   | 256,250                                  | -           | 100,000   | 156,250                            |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Thawansak Sukhawun           | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Pavich Tongroach             | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Miss Supamas Trivisvavet         | 1,700,000                                | -           | -         | 1,700,000                          |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Narong Sangsuriya            | 512,500                                  | -           | -         | 512,500                            |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Prasert Marittanaporn        | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Ratn Santaannop              | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Anukool Tuntimas             | -  | -           | -         | -                                  |
| Spouse and minor child           | 3,177,484                                | -           | 3,000,000 | 177,484                            |
| Mr. Sittidej Trivisvavet         | 1,550,000                                | -           | 1,550,000 | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Phongsarit Tantisuvanitchkul | 153,750                                  | -           | -         | 153,750                            |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Pornnarong Siriyothin        | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Prapon Chanpradubfa          | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Phairat Prom-in              | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Thammanoon Surarat           | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Watchara Sanghattawattana    | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Pichai Cheybumroong          | 150,000                                  | -           | -         | 150,000                            |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mrs. Rinrada Tangtrongkid        | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Wiboon Ungapipathanachai     | -  | -           | -         | -                                  |
| Spouse and minor child           | -  | -           | -         | -                                  |
| Mr. Keerati Luangchookiat        | 50,050                                   | -           | -         | 50,050                             |
| Spouse and minor child           | -  | -           | -         | -                                  |

## (2) Shareholders' Agreement

None of the Company's major shareholders has entered into a shareholders' agreement, to which the Company is a party, concerning any matters which have affect the Company's issuance and offering of securities or its administration.



## 7.3 Outstanding obligations in previous issuance of bills of exchange or debentures and issuance of other securities of the Company

(1) The Company has no convertible securities.

(2) The Company's securities in the form of debt instrument are debentures, with the details as follows:

The Company's Outstanding Debentures as at December 31, 2018

| Debenture Symbol | Issuance Date     | Value as at Issuance Date (Million Baht) | Value as at Dec 31, 2018 (Million Baht) | Term                 | Maturity Date     | Interest Rate (per annum) | Type of Offering* | Credit Rating as at Jul 19, 2018 |
|------------------|-------------------|--|---|----------------------|-------------------|---------------------------|-------------------|----------------------------------|
| CK198A           | August 7, 2015    | 500                                      | 500                                     | 4 years              | August 7, 2019    | 2.85%                     | PP-II&HNW         | A-                               |
| CK193B           | March 7, 2016     | 1,500                                    | 1,500                                   | 3 years              | March 7, 2019     | 2.19%                     | PP-II&HNW         | A-                               |
| CK235A           | May 26, 2016      | 1,000                                    | 1,000                                   | 7 years              | May 26, 2023      | 3.22%                     | PP10              | A-                               |
| CK246A           | June 7, 2016      | 500                                      | 500                                     | 8 years              | June 7, 2024      | 3.50%                     | PP10              | A-                               |
| CK197A           | July 8, 2016      | 2,500                                    | 2,500                                   | 3 years              | July 8, 2019      | 2.24%                     | PP-II&HNW         | A-                               |
| CK247A           | July 8, 2016      | 1,500                                    | 1,500                                   | 8 years              | July 8, 2024      | 3.51%                     | PP-II&HNW         | A-                               |
| CK267A           | July 8, 2016      | 2,700                                    | 2,700                                   | 10 years             | July 8, 2026      | 3.82%                     | PP-II&HNW         | A-                               |
| CK283A           | July 8, 2016      | 800                                      | 800                                     | 11 years<br>8 months | March 8, 2028     | 3.99%                     | PP-II&HNW         | A-                               |
| CK277A           | July 11, 2016     | 1,000                                    | 1,000                                   | 11 years             | July 11, 2027     | 3.95%                     | PP10              | A-                               |
| CK27NA*          | November 8, 2016  | 1,000                                    | 1,000                                   | 11 years             | November 8, 2027  | 4.05%                     | PP10              | A-                               |
| CK27NB*          | November 17, 2016 | 500                                      | 500                                     | 11 years             | November 17, 2027 | 4.05%                     | PP10              | A-                               |
| CK215A           | May 26, 2017      | 2,250                                    | 2,250                                   | 4 years              | May 26, 2021      | 2.97%                     | PP-II&HNW         | A-                               |
| CK245A*          | May 26, 2017      | 1,600                                    | 1,600                                   | 7 years              | May 26, 2024      | 3.80%                     | PP-II&HNW         | A-                               |
| CK275A*          | May 26, 2017      | 1,150                                    | 1,150                                   | 10 years             | May 26, 2027      | 4.19%                     | PP-II&HNW         | A-                               |
| CK295A*          | May 26, 2017      | 1,000                                    | 1,000                                   | 12 years             | May 26, 2029      | 4.32%                     | PP-II&HNW         | A-                               |
| CK20NA           | November 3, 2017  | 1,000                                    | 1,000                                   | 3 years              | November 3, 2020  | 2.24%                     | PP-II&HNW         | A-                               |
| CK25NA*          | November 3, 2017  | 1,000                                    | 1,000                                   | 8 years              | November 3, 2025  | 3.34%                     | PP-II&HNW         | A-                               |
| CK27NC*          | November 3, 2017  | 1,000                                    | 1,000                                   | 10 years             | November 3, 2027  | 3.65%                     | PP10              | A-                               |

| Debenture Symbol | Issuance Date | Value as at Issuance Date (Million Baht) | Value as at Dec 31, 2018 (Million Baht) | Term     | Maturity Date | Interest Rate (per annum) | Type of Offering* | Credit Rating as at Jul 19, 2018 |
|------------------|---------------|--|---|----------|---------------|---------------------------|-------------------|----------------------------------|
| CK225A           | May 23, 2018  | 1,600                                    | 1,600                                   | 4 years  | May 23, 2022  | 2.48%                     | PP-II             | A-                               |
| CK235B           | May 23, 2018  | 2,700                                    | 2,700                                   | 5 years  | May 23, 2023  | 2.74%                     | PP-II             | A-                               |
| CK217A           | July 25, 2018 | 820                                      | 820                                     | 3 years  | July 25, 2021 | 2.60%                     | PP-II             | A-                               |
| CK227A           | July 25, 2018 | 910                                      | 910                                     | 4 years  | July 25, 2022 | 2.80%                     | PP-II             | A-                               |
| CK287A*          | July 25, 2018 | 1,020                                    | 1,020                                   | 10 years | July 25, 2028 | 4.00%                     | PP-II             | A-                               |
| <b>Total</b>     |               | <b>29,550.00</b>                         | <b>29,550.00</b>                        |          |               |                           |                   |                                  |

\* This refers to debentures which the issuer has the early redemption right.

**Remarks:** PO refers to public offering to all types of investors.

PP10 refers to private placement to not more than 10 investors.

PP-II & HNW refers to private placement to institutional investors or high net worth investors.

PP-II refers to private placement to institutional investors.

### The Company's Outstanding Bills of Exchange as at December 31, 2018

As at December 31, 2018, the Company's bills of exchange payable amounted to Baht 2,900 Million, which would mature during February 2019 and March 2019.

### The Company's Outstanding Short-Term Debentures as at December 31, 2018

As at December 31, 2018, the Company had no an outstanding debt for the short-term debentures.

### Latest Credit Rating of Debentures

As at July 19, 2018, TRIS Rating Co., Ltd. has affirmed the corporate rating and the existing unsubordinated and unsecured debenture ratings of the Company at "A-", with the "Stable" outlook. The Company's credit ratings also reflect its leading position in Thailand's construction industry, together with proven records in its ability to undertake large-scale infrastructure and sophisticated construction projects requiring specific expertise, including strengths in project operations and financial flexibility obtained from the Company's strategic investments. However, these strengths are partially constrained by the cyclical nature and the intense competition in the construction industry, together with the Company's high financial leverage.



## 7.4 Policy on dividend payment

The Company has a policy to pay dividend to shareholders at an expected rate of approximately not less than 40 percent of the net profit after tax in each year, which will be payable in the following year provided that there is no any other necessary requirements and such dividend payment will not affect the ordinary course of the Company's business operations in any material aspects.

As for the subsidiaries, joint ventures and related companies, the Company has not yet set out any policy on dividend payment.

### Companies in the basic infrastructure project group which are associated companies, namely:

1. Bangkok Expressway and Metro Public Company Limited has a policy to pay dividend at not less than 40 percent of the net profit of each year, taking into account the operational results, financial structure and obligations, investment, as well as regular payment of dividend to shareholders. In this regard, the board of directors may pay interim dividend to its shareholders

when it is of the initial view that the company has sufficient profit and cash flow to pay dividend. Once the dividend payment has been made, such dividend payment shall be reported to the following shareholders' meeting.

2. CK Power Public Company Limited has a policy on dividend payment to shareholders from its separate financial statements at the rate not less than 40 percent of the net profit after deduction of corporate income tax and legal reserve of each year. In this regard, the rate of such dividend payment may vary from the specified rate subject to the operational results, financial position, liquidity, necessity in investments, working capital, additional investments, business expansion, conditions and restrictions specified in the loan agreement, and other relevant factors in the management as the board of directors and/or the company's shareholders may deem appropriate. In addition, the board of directors may consider approving an interim dividend payment to its shareholders when it initially considers that the company has sufficient profits and cash flows for dividend payment.

**The Company's dividend payments during the past five years were as follows:**

Unit (Baht)

| Year                        | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------------------------|------|------|------|------|------|
| Net Profit Margin per share | 1.24 | 1.46 | 0.53 | 0.31 | 0.37 |
| Dividend per share          | 0.55 | 0.65 | 0.50 | 0.50 | 0.50 |

**The Company's retained earnings and shareholders' equity during the past five years were as follows:**

Unit (Million Baht)

| Year                 | 2014      | 2015      | 2016      | 2017      | 2018      |
|----------------------|-----------|-----------|-----------|-----------|-----------|
| Retained earnings    | 6,821.99  | 8,300.54  | 8,096.91  | 7,775.18  | 7,638.40  |
| Shareholders' equity | 19,470.68 | 20,855.67 | 21,854.32 | 23,873.08 | 25,828.72 |




## 8. Management Structure

### 8.1 Board of Directors

As at December 31, 2018, the Board of Directors consists of 10 directors as listed below:

| Directors                         | Positions  | Category             | Total Number of Board of Directors' Meetings (2018) | Attendances of Board of Directors' Meetings (2018) |
|-----------------------------------|--|----------------------|---|--|
| 1. Mr. Aswin Kongsiri             | • Chairman of the Board of Directors   | Independent Director | 7   | 7  |
| 2. Mr. Plew Trivisvavet           | • Director<br>• Chairman of the Executive Board<br>• Nomination and Remuneration Committee Member<br>• Corporate Governance and Risk Management Committee Member                   | Executive Director   | 7   | 7  |
| 3. Mr. Vitoon Tejatussanasoontorn | • Director<br>• Chairman of the Audit Committee<br>• Chairman of the Nomination and Remuneration Committee<br>• Chairman of the Corporate Governance and Risk Management Committee | Independent Director | 7   | 7  |
| 4. Mr. Thawansak Sukhawun         | • Director<br>• Audit Committee Member<br>• Nomination and Remuneration Committee Member<br>• Corporate Governance and Risk Management Committee Member                            | Independent Director | 7   | 7  |
| 5. Mr. Pavich Tongroach           | • Director<br>• Audit Committee Member<br>• Chairman of the Corporate Social and Environmental Responsibility Committee  | Independent Director | 7   | 7  |
| 6. Miss Supamas Trivisvavet       | • Director<br>• Executive Director<br>• President<br>• Corporate Governance and Risk Management Committee Member   | Executive Director   | 7   | 7  |
| 7. Mr. Narong Sangsuriya          | • Director<br>• Executive Director<br>• Nomination and Remuneration Committee Member<br>• Corporate Governance and Risk Management Committee Member                                | Executive Director   | 7   | 7  |
| 8. Mr. Prasert Marittanaporn      | • Director<br>• Executive Director<br>• Corporate Social and Environmental Responsibility Committee Member   | Executive Director   | 7   | 7  |
| 9. Mr. Ratn Santaannop            | • Director<br>• Executive Director   | Executive Director   | 7   | 7  |
| 10. Mr. Anukool Tuntimas          | • Director<br>• Executive Director<br>• Corporate Social and Environmental Responsibility Committee Member   | Executive Director   | 7   | 7  |





The Company's authorized signatory directors are two of the following four directors, namely, Miss Supamas Trivisvavet, the President, Mr. Plew Trivisvavet, Mr. Narong Sangsuriya, Mr. Prasert Marittanaporn, jointly sign and affix the Company's seal, or any one of the said four directors and either Mr. Ratn Santaannop or Mr. Anukool Tuntimas, totaling two directors, jointly sign and affix the Company's seal.

#### **Board of Directors' Authority**

- 1) Determining policies and directions of the Company's operation and supervising the management to comply with the specified policies as well as taking steps to ensure that the Company has efficient and effective internal control system and the intention to continue its business operations;
- 2) Performing the duties in compliance with laws, objectives and Articles of Association of the Company, as well as resolutions passed by shareholders' meetings, taking into account the integrity and protection of the Company's interest;
- 3) Being responsible for preparation of balance sheet and income statement at the close of the Company's accounting period to ensure that they contain accurate information and truly and fairly reflect the Company's status, in compliance with generally accepted accounting standards, and having said financial statements audited by the Company's auditor so as to submit the same to the Annual Ordinary General Meeting of Shareholders for consideration and approval;
- 4) Focusing on the duty to disclose the Company's information in accordance with the Stock Exchange of Thailand's requirements, Re: Rules and Procedures for Disclosure of Information and Acts of Listed Companies, so as to disclose to the public such information which is material and necessary to the decision to invest in securities;
- 5) Having the authority to appoint other person to operate the Company's business subject to the supervision of the Board of Directors or the President or delegating to such person the authorities as the Board deems appropriate and during a certain period as the Board deems appropriate, provided that the Board of Directors may cancel, revoke or amend such authorities and that said authorization in no way allows such authorized person to approve any transactions in which such authorized person or another person may have conflict, interest or conflicts of interest in other manners with the Company or its subsidiaries;
- 6) Considering and granting approval for capital increase, issuance of debentures, for submission to the shareholders' meeting for further approval;
- 7) Considering and granting approval for operating expenses in excess of the amount authorized to be approved by the President, for submission to the Board of Directors' meeting for further approval.

The authority to take the foregoing actions shall not extend to connected transactions and such transactions relating to acquisition or disposition of significant assets of listed companies in accordance with the rules and regulations of the Office of the Securities and Exchange Commission/the Stock Exchange of Thailand and the Company shall comply with the Stock Exchange's rules, regulations and requirements governing those related matters. In addition, the foregoing authority shall not include any other matters subject to approval by the shareholders' meeting in accordance with the Company's Articles of Association.

### **Board of Directors' Approval Authority**

1. Approving appointment of any natural persons or legal entities as share registrars;
2. Approving close of the register book and suspension of share transfer;
3. Approving management of all businesses of the Company in accordance with the laws, objectives and Articles of Association of the Company and resolutions of the shareholders' meeting; and having authority to take any actions specified in the Memorandum of Association or pertaining thereto;
4. Approving authorization of one or more persons to take any actions on behalf of the Board of Directors;
5. Approving assignment of any other persons or groups of persons to engage in the Company's business under the supervision of the Board of Directors, or authorizing such person to have authority as the Board of Directors deems appropriate and within a period of time as the Board of Directors deems appropriate, whereby the Board of Directors may revoke, repeal, change or amend such authorization;
6. Approving sale or mortgage of any immovable assets of the Company or leasing out any immovable assets of the Company for three years or longer or allowing for or making compromise or filing a lawsuit in court(s) or referring any disputes to arbitration;
7. Approving interim dividend payment to shareholders from time to time if it is found that the Company's profit is justifiable to do so, reporting to the next shareholders' meeting;
8. Approving election of the Executive Board to perform any or several matters;
9. Approving remuneration and rewards or other benefits for executive directors;
10. Approving appointment of the Company's authorized signatory directors.

### **Chairman of the Board of Directors' Authority**

- 1) Monitoring the management in setting the direction of the business operations, providing suggestions, including supervision, control and following up the management via the Executive Board and the President;
- 2) Determining the Company's policies in association with the Board of Directors, by jointly considering and establishing the business goals with management;
- 3) Presiding over both Board of Directors' meetings and shareholders' meetings, to control and conduct meetings efficiently and effectively, and encouraging all directors to participate in meetings and offers opinions independently.



## Structure of Subsidiaries' Directors

As at December 31, 2018, the Boards of Directors of subsidiaries consist of qualified persons as listed below:

### CH. Karnchang Real Estate Co., Ltd.

- |                              |          |
|------------------------------|----------|
| 1. Mr. Plew Trivisvavet      | Director |
| 2. Miss Supamas Trivisvavet  | Director |
| 3. Mr. Prasert Marittanaporn | Director |
| 4. Mr. Nattavut Trivisvavet  | Director |

### Phrompratharn Construction Co., Ltd.

- |                        |          |
|------------------------|----------|
| 1. Mr. Yim Trivisvavet | Director |
|------------------------|----------|

### Prasertvit Construction Co., Ltd.

- |                              |          |
|------------------------------|----------|
| 1. Mrs. Ornanong Trivisvavet | Director |
|------------------------------|----------|

### CH. Karnchang-Tokyu Construction Co., Ltd.

- |                                     |                                    |
|-------------------------------------|------------------------------------|
| 1. Mr. Plew Trivisvavet             | Chairman of the Board of Directors |
| 2. Miss Khajornwit Sae-chia         | Director                           |
| 3. Miss Supamas Trivisvavet         | Director                           |
| 4. Mr. Phongsarit Tantisuvanitchkul | Director                           |
| 5. Mr. Narong Sangsuriya            | Director                           |
| 6. Mr. Prasert Marittanaporn        | Director                           |
| 7. Mr. Hideo Miyagawa               | Director                           |
| 8. Mr. Tsuneo Izuka                 | Director                           |
| 9. Mr. Mitsuhiro Terada             | Director                           |
| 10. Mr. Masatoshi Shimizu           | Director                           |
| 11. Mr. Shigehiko Shibusawa         | Director                           |

### CH. Karnchang (Lao) Co., Ltd.

- |                        |          |
|------------------------|----------|
| 1. Mr. Ratn Santaannop | Director |
|------------------------|----------|



## 8.2 Management Team

As at December 31, 2018, the management team<sup>(1)</sup> of the Company consists of 17 persons as listed below:

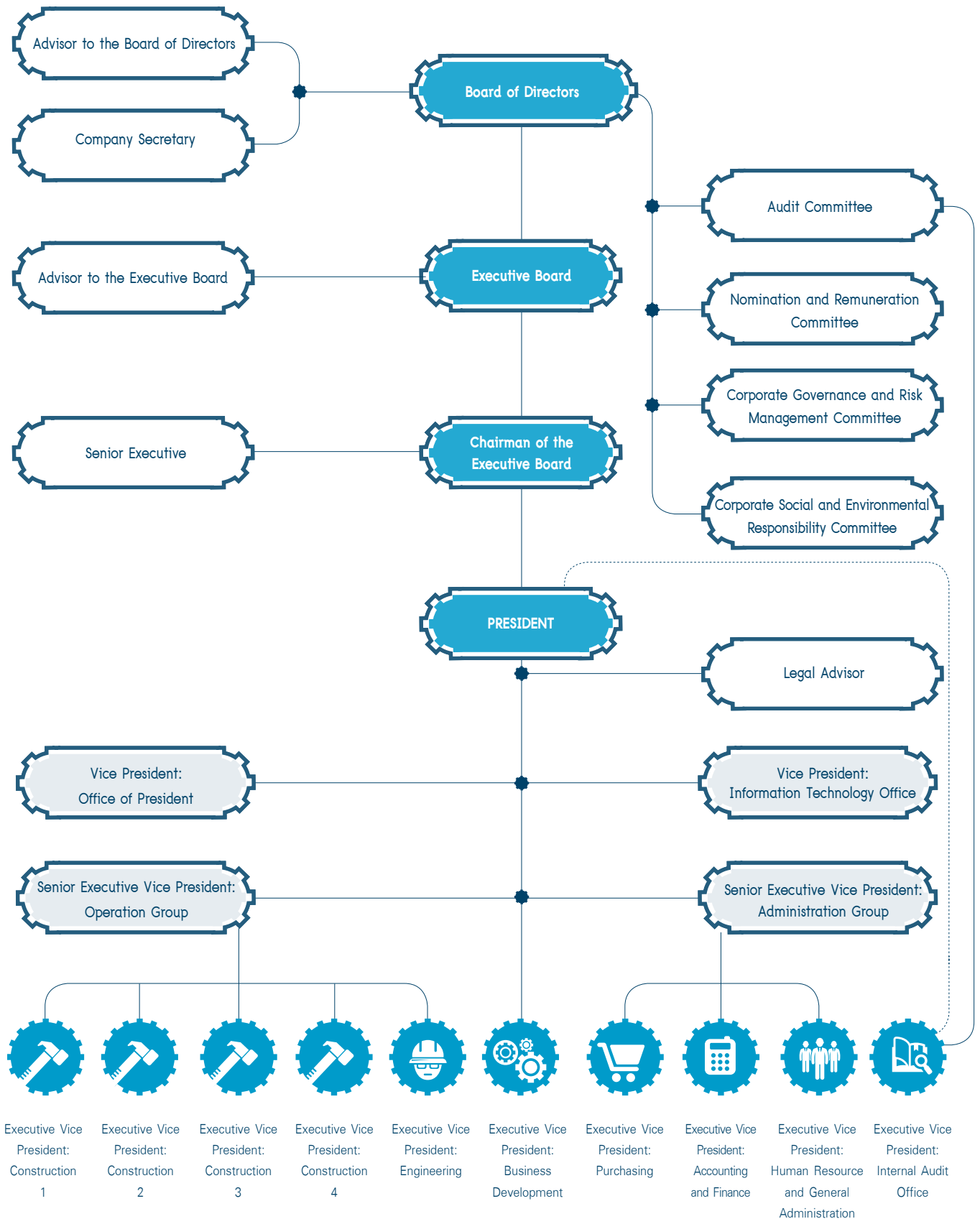
| Names                               | Positions   |
|-------------------------------------|---|
| 1. Mr. Plew Trivisvavet             | Chairman of the Executive Board                                     |
| 2. Miss Supamas Trivisvavet         | President   |
| 3. Mr. Narong Sangsuriya            | Senior Executive  |
| 4. Mr. Prasert Marittanaporn        | Senior Executive  |
| 5. Mr. Ratn Santaannop              | Senior Executive  |
| 6. Mr. Sittidej Trivisvavet         | Senior Executive Vice President: Administration Group               |
| 7. Mr. Phongsarit Tantisuvanitchkul | Senior Executive Vice President: Operation Group                    |
| 8. Mr. Pornnarong Siriyothin        | Executive Vice President: Construction 1                            |
| 9. Mr. Prapon Chanpradubfa          | Executive Vice President: Construction 2                            |
| 10. Mr. Phairat Prom-in             | Executive Vice President: Construction 3                            |
| 11. Mr. Thammanoon Surarat          | Executive Vice President: Construction 4                            |
| 12. Mr. Watchara Sanghattawattana   | Executive Vice President: Engineering                               |
| 13. Mr. Anukool Tuntimas            | Executive Vice President: Human Resource and General Administration |
| 14. Mr. Pichai Cheybumroong         | Executive Vice President: Purchasing                                |
| 15. Mrs. Rinrada Tangtrongkid       | Executive Vice President: Accounting and Finance                    |
| 16. Mr. Wiboon Ungapipathanachai    | Executive Vice President: Internal Audit Office                     |
| 17. Mr. Keerati Luangchookiat       | Executive Vice President: Business Development                      |

**Remark:** <sup>(1)</sup> The management team refers to the definition of “executive” of the Office of the Securities and Exchange Commission.

### President’s Authority

The President shall have the authority to control and manage the Company’s core business and monitor all businesses of the Company to ensure compliance with resolutions and policies of as assigned by the Board of Directors, including their suggestions. In this regard, the Board of Directors shall evaluate the President’s performance in comparison with the annual goals, whereby the Nomination and Remuneration Committee shall consider remuneration for the President by evaluating from the performance in the past year for proposal to the Board of Directors for consideration and approval in accordance with the criteria.

# The Company's Management Structure as at December 31, 2018





## 8.3 Company Secretary

The Board of Directors' Meeting No. 2/2013 on May 28, 2013 appointed Mr. Nattavut Trivisvavet to hold office as the Company Secretary with duties and responsibilities as follows:

1. Providing advice to directors as to relevant legal provisions, rules, criteria, and regulations;
2. Ensuring compliance with laws, the Articles of Association, relevant regulations and the good corporate governance principles by the Company;
3. Arranging for meetings as specified by law and the Articles of Association, preparing and keeping directors registration, notices and minutes of the Board of Directors' meetings and annual reports of the Company, notices and minutes of the shareholders' meetings as well as coordinating to ensure compliance with resolutions of the Board of Directors or resolutions of the shareholders with efficiency;
4. Ensuring disclosure of information and report on information to the regulatory units;
5. Contacting and communicating with shareholders and the related regulatory units;
6. Promoting training in various courses and providing information useful for new directors; and
7. Proceeding with other matters as assigned by the Board of Directors.



## 8.4 Remuneration for Directors and Executives

### Remuneration for Directors and President

The Company has considered providing appropriate remuneration to directors and the President, whereby remuneration for directors is subject to shareholders' approval and the Board of Directors must approve remuneration for the President, as per the criteria of determination of remuneration for directors and the President as follows:

- 1) Remuneration shall be appropriate for and in line with the scope of duties and responsibilities of each director, e.g., Chairman of the Board of Directors, Chairman of each subcommittee and members of the Executive Board, the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance and Risk Management Committee and the Corporate Social and Environmental Responsibility Committee, who shall receive additional remuneration for such position;
- 2) Remuneration shall be sufficient to attract and retain knowledgeable and qualified directors and the President to efficiently perform duties for the Company to lead the organization into achievements in the short-term and long-term goals;
- 3) Elements of remuneration are clear, transparent and easy to understand;
- 4) Remuneration must be considered and screened by the Nomination and Remuneration Committee to stay at the reasonable and competitive rate which is at the same level as that of the same industry and at a sufficient level to take care of and retain the directors and the President who are qualified in line with the Company's business goals.

In this regard, the Nomination and Remuneration Committee and the Board of Directors did survey remuneration for directors for 2018 based on performance of directors, in comparison with other companies in the same industry of a similar size and nature, including results of director remuneration survey of the Thai Institute of Directors.

### Remuneration for Executives

Consideration of the remuneration for executives shall be subject to the criteria as specified by the Board of Directors, namely, such remuneration is appropriate and at a sufficient level to attract and retain qualified high-ranking executives to work for the Company, as well as at a rate comparable to companies at the same level or in the same business. This will be consistent with the Company's operational results and the results of performance evaluation of each executive via the Performance Management System.



In 2018, the remuneration of directors and executives is as follows:

**(1) Monetary Remuneration for the year ended December 31, 2018**

(a) Remuneration for directors (including remuneration for non-executive directors) consists of remuneration and meeting allowance, allowance, bonus, bringing the total remuneration for directors in 2018 to Baht 18,839,998, which was consistent with the resolution of the 2018 Annual Ordinary General Meeting of Shareholders approving remuneration for directors in the total amount not exceeding Baht 19,625,000, namely, bonus for directors for the year 2017 in the amount not exceeding Baht 11,000,000 and remuneration for directors for the year 2018 in the amount not exceeding Baht 8,625,000, as per the following details:

**1. Remuneration and office remuneration**

**1.1 Remuneration for directors**

|  |      |                             |
|--|------|-----------------------------|
| Remuneration for directors               | Baht | 200,000 per year per person |
| Remuneration for Audit Committee Members | Baht | 200,000 per year per person |
| Remuneration for executive directors     | Baht | 100,000 per year per person |

**1.2 Office remuneration**

|   |      |                  |
|---|------|------------------|
| Chairman of the Board of Directors  | Baht | 550,000 per year |
| Chairman of the Executive Board   | Baht | 300,000 per year |
| Chairman of the Audit Committee   | Baht | 200,000 per year |
| Chairman of the Nomination and Remuneration Committee                       | Baht | 100,000 per year |
| Chairman of the Corporate Governance and Risk Management Committee          | Baht | 100,000 per year |
| Chairman of the Corporate Social and Environmental Responsibility Committee | Baht | 100,000 per year |

**2. Meeting allowance** is paid according to the number of attendances to the Board of Directors' Meetings or subcommittees' meetings, whereby the meeting allowance is Baht 20,000 per person for each Board of Directors' Meeting and Executive Board's Meeting and Baht 10,000 per person for any other subcommittees.

**Office Remuneration and Meeting Allowance in 2018**

Unit: Baht

| Directors                     | Positions                          | Board of Directors | Executive Board  | Audit Committee | Nomination and Remuneration Committee | Corporate Governance and Risk Management Committee | Corporate Social and Environmental Responsibility Committee | Bonus 2017        | Total             |
|-------------------------------|------------------------------------|--------------------|------------------|-----------------|---------------------------------------|--|---|-------------------|-------------------|
| Mr. Aswin Kongsiri            | Chairman of the Board of Directors | 890,000            | -                | -               | -                                     | -  | -   | 1,270,124         | 2,160,124         |
| Mr. Plew Trivisvavet          | Chairman of the Executive Board    | 340,000            | 640,000          | -               | 20,000                                | 40,000   | -   | 1,270,124         | 2,310,124         |
| Mr. Vitoon Tejtassanasoontorn | Chairman of the Audit Committee    | 340,000            | -                | 440,000         | 120,000                               | 140,000  | -   | 1,270,124         | 2,310,124         |
| Mr. Thawansak Sukhawun        | Audit Committee Member             | 340,000            | -                | 240,000         | 20,000                                | 40,000   | -   | 1,057,146         | 1,697,146         |
| Mr. Pavich Tongroach          | Audit Committee Member             | 340,000            | -                | 240,000         | -                                     | -  | 120,000   | 846,750           | 1,546,750         |
| Miss Supamas Trivisvavet      | Executive Director                 | 340,000            | 340,000          | -               | -                                     | 30,000   | -   | 1,057,146         | 1,767,146         |
| Mr. Narong Sangsuriya         | Executive Director                 | 340,000            | 340,000          | -               | 20,000                                | 40,000   | -   | 1,057,146         | 1,797,146         |
| Mr. Prasert Marittanaporn     | Executive Director                 | 340,000            | 340,000          | -               | -                                     | -  | 20,000  | 1,057,146         | 1,757,146         |
| Mr. Ratn Santaannop           | Executive Director                 | 340,000            | 340,000          | -               | -                                     | -  | -   | 1,057,146         | 1,737,146         |
| Mr. Anukool Tuntimas          | Executive Director                 | 340,000            | 340,000          | -               | -                                     | -  | 20,000  | 1,057,146         | 1,757,146         |
| <b>Total</b>                  |                                    | <b>3,950,000</b>   | <b>2,340,000</b> | <b>920,000</b>  | <b>180,000</b>                        | <b>290,000</b>                                     | <b>160,000</b>  | <b>10,999,998</b> | <b>18,839,998</b> |

(b) Remuneration for executive directors consists of remuneration, meeting allowance as well as allowance. Remuneration for executives consists of salary, bonus and welfare. The total remuneration for six executive directors and 11 executives in 2018 amounted to Baht 158,989,554.

## (2) Other Remuneration and Benefits

### 2.1 Other Remuneration and Benefits for Directors

- None -

### 2.2 Other Remuneration and Benefits for Executives

- Provident Fund Contributions

The Company established a provident fund which represents its employees' long-term remuneration upon termination of employment with the Company or upon retirement, whereby executives pay their savings at the rate of 10 - 15 percent of his/her salary according to service years and the Company pays contributions at the same rate to the fund, but not exceeding 10 percent of such executive's wage. In 2018, the Company paid the provident fund contributions for 17 executives in the amount of Baht 9,841,910.



## 8.5 Personnel

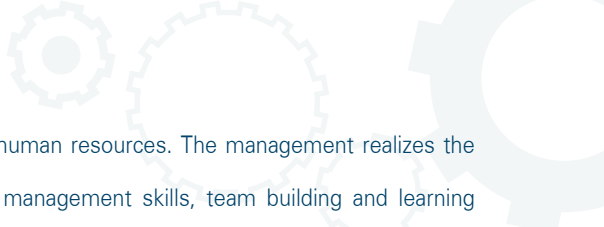
(1) Number of all staff and number of staff in each main work line of CH. Karnchang Public Company Limited as at December 31, 2018 consist of:

|  |              |                |
|--|--------------|----------------|
| Total number of directors                                  | 10           | Persons        |
| High-ranking executives (excluding the Board of Directors) | 14           | persons        |
| Engineering  | 47           | persons        |
| Construction 1   | 145          | persons        |
| Construction 2   | 404          | persons        |
| Construction 3   | 584          | persons        |
| Construction 4   | 2            | persons        |
| Business Development                                       | 12           | persons        |
| Purchasing   | 103          | persons        |
| Accounting and Finance                                     | 119          | persons        |
| Human Resource and General Administration                  | 62           | persons        |
| Office of President  | 33           | persons        |
| Internal Audit Office                                      | 10           | persons        |
| Information Technology Office                              | 11           | persons        |
| <b>Total</b>   | <b>1,556</b> | <b>Persons</b> |

**Remark:** The number of staff as reported above is the total number of full-time staff. There also are 415 daily staff members, 1,940 staff members of CKCH Joint Venture, 890 staff members of CKST Joint Venture, and 2,457 staff members of CH. Karnchang (Lao) Co., Ltd.

(2) The Company neither has any significant change in number of staff nor labor dispute during the past three years.

(3) Total remuneration, namely, salary, overtime pay, allowance, office remuneration, bonus and provident fund contributions of all staff of the Company in 2018, amounted to Baht 1,526,594,056.



**(4) Personnel Development Policy:** The Company has been developing human resources. The management realizes the significance of improvement of performance and potential of staff in respect of management skills, team building and learning about specific professional knowledge, including encouraging staff to learn about information technology, foreign languages and continuously improve themselves. Furthermore, the Company organized the project for human resources management system development by allowing our qualified advisors to study and develop the structure and supporting systems in various aspects, such as, the organization structure, nature of work, training plan, evaluation of performance of staff, career path and succession plan, etc., in order to ensure their efficient performance, including fair and competitive return. Moreover, directors and executives are also encouraged to learn modern techniques of work management, namely by way of ensuring a learning organization, change management, etc. These reflect that the Company is determined to improve its personnel, both staff and executives, to keep pace with the world of technology and nature of business under a more intense competition, including the structure and supporting systems so as to accommodate the management of the organization. In doing so, the Company focuses on improvement, enhancement and development of competency of the Company's personnel towards the goals of services to the service users' satisfaction, whereby the personnel development is deemed to be the Company's key action plan, and as such, the Company sets out the action plans and conducts personnel development on key matters as follows:

### **1. Development of Competency**

The Company arranges for development of personnel in both main functions and supporting functions, particularly in respect of such main functions, training course for competency has been provided, both in theory and in practice, by experts in order for staff to have competency and skills in the respective aspects in operations in order to refresh and enhance specific skills on a regular basis. Moreover, the Key Performance Indicators (KPIs) are reviewed on a regular basis to ensure compliance with the Company's policy.

### **2. Development of Staff Potential**

This is based on the belief that every person has potential which could be used without limitation if they were given support and opportunity. The Company thus allows staff to show their potential through various quality activities, such as, 5S, Suggestion System, as well as supporting them to further study in a level higher than bachelor's degrees in the fields relating to their assigned duties or long-term training course in specific fields.

### **3. Retention of Potential Personnel**

The Company has taken care of its staff who have high ability and potential, by allowing for advancement in their career paths and setting out clear criteria to be regularly implemented every year. Moreover, the Company arranges for the individual development plan, especially such personnel at the supervisor level or higher. Furthermore, the Company also improves the performance evaluation by using KPIs in the evaluation to ensure concrete and measurable results, along with factors in respect of competency and work behavior of staff which would serve as a mechanism to retain competent personnel and for the purpose of development of staff's competency to possess core competencies as desirable by the Company, namely:

- Self-learning and self-development to ensure continued development in the learning organization;
- Focus on ethics to promote the performance in accordance with the good corporate governance principles;
- Provision of good and quality services to meet customers' satisfaction;
- Results-based goals as key performance indicators and achievable action plans.

#### 4. Succession Plan

The Company focuses on internal rather than outside recruitment, particularly such work positions in the primary line, through the promotion process in accordance with the criteria, significantly based on performance and potentials. In this regard, the Company makes preparations for those potential successors in the development of their knowledge, competency and skills as required for their work positions.

#### 5. Quality Management System

The Company is regularly determined to improve the efficiency and quality of work performance, by way of maintenance of the quality of its service provision through the Company's quality management certification, ISO 9001, which has been certified by SGS (Thailand) Limited in accordance with UKAS Standard of England and NAC Standard of Thailand.

#### 6. Promotion and Creation of Innovations in the Organization

With the Company's commitment to and support of development of personnel and bodies of knowledge to have them keep pace with technology and innovations in terms of design, engineering, construction and operational procedures to ensure that they are kept up to date with new innovations in the digital generation, and with the significance realized by the Company towards development of innovations and technology, which is a part of the Company's vision and business strategies; the Company was therefore presented with the awards as follows:

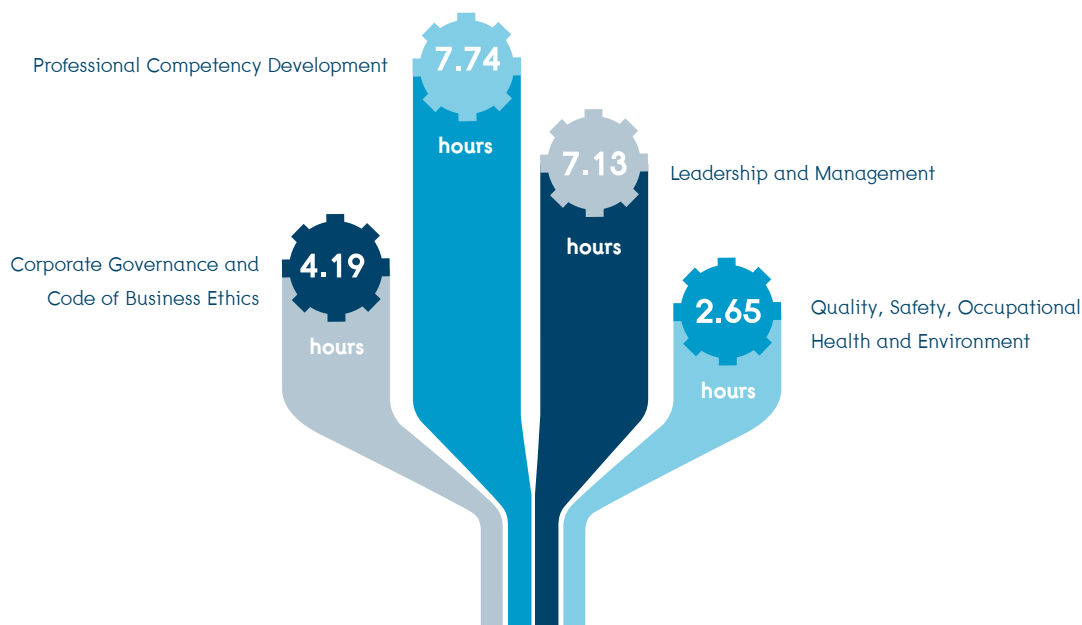
##### 2017: Innovation on Use of Limestone Powder in Concrete Work

The Xayaburi Hydroelectric Power Project located in the Lao People's Democratic Republic (Lao PDR) has been made of more than 4 million cubic meters of concrete and its construction site is located in the area of limited sources of raw materials of concrete-mixed sand, that is, the volume of sand in the Mekong River in the construction site is inadequate, let alone the fact that the sand's physical property is rather fine than the required standard of sand to be used for concrete mixture. For these reasons, it is necessary to use limestone for production as crushed sand to be mixed with certain portions of the river sand for concrete production. Upon mixture of such two types of sand, the fineness modulus would be obtained in accordance with the requirements of concrete-mixed sand, and the quality concrete can be produced as required.

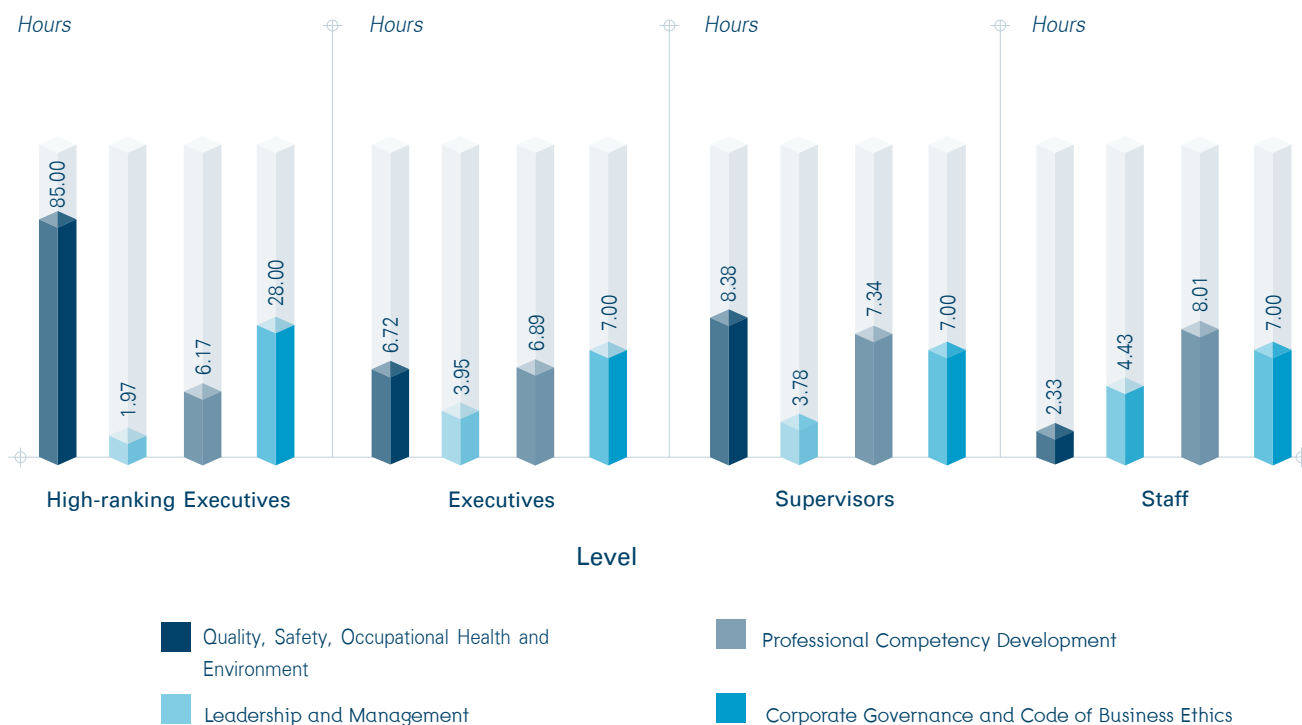
However, the sand so produced from crushing would have fine aggregate or dust of smaller than 75 microns in size which must not exceed 3 percent of the requirements; while the crushed sand so produced would have dust particles averaging 10 - 13 percent. The method to reduce dust in crushed sand was to wash it before using, which needed water and electricity, with residue from such process. To enable such a large-sized construction project to minimize the environmental impact and use resources for the maximum benefits, further studies and testing of crushed sand were conducted, and it was found that dust or fine aggregate to be washed off could be used for concrete mixture without any impact on concrete quality, through various methods, testing, and seeking approval for use from a supervising engineer based on the Deming Cycle, PDCA, until the approval was granted for use of such crushed sand without having the washing process, and still, the quality control was required from the original source of materials, namely, rock mine, until the concrete production, to ensure that the concrete work met quality and had properties as required, in respect of the property of fresh concrete during placing of concrete and the property of setting of concrete, and that the raw materials could be produced as required according to the construction plan.

From such achievement of use of crushed sand, the Company then was of the view that such information would be useful to the engineering profession in Thailand on use of crushed sand in concrete, therefore, an article regarding "The Use of Limestone Powder in Concrete of the Xayaburi Hydroelectric Power Project" was proposed to the Thailand Concrete Association, and the "TCA Concrete Practice Award: Silver Medal for 2016" was thus granted. In addition, the ARE-QP Award was granted from the Asian Network for Quality (ANQ) in the ANQ Congress 2017, Kathmandu, Nepal, for the article's subject "Continuous Improvement on Concrete Quality for Xayaburi Hydropower Project".

## Summary of Number of Days, Classification and Category of Courses under the 2018 Annual Training Plan



## Chart of Average Training Hours Classified by Staff Level and Training Courses in 2018





## 9. Corporate Governance

The Board of Directors puts their trust in and realizes the significance of the Corporate Governance Code, consisting of establishing organizational leadership role and responsibilities of the Board for creating value for the business to attain the sustainable business operations; strengthening effective management and internal control; implementing mechanisms for control and checks and balances intended to ensure the transparent and auditable management; respect for rights and equality of shareholders by encouraging and supporting participation and communication with shareholders; ensuring disclosure and maintaining financial integrity; and ensuring all groups of stakeholders-oriented management, which is a key factor in adding value and bringing the highest returns to the Company's shareholders in the long run on a sustainable basis.

To boost confidence of all shareholders, investors and stakeholders and development resulting in the good corporate governance of the Company on a continuous basis, including understanding of the Board of Directors in the Company's business operations, expectations of stakeholders, opportunities and risks affecting the business operations, the Board of Directors then requires that the corporate governance policy and compliance with the policy shall be regularly reviewed on a yearly basis. In this connection, the Company has publicized the Company's corporate governance policy on its website to allow all shareholders, investors and stakeholders to have access to the Company's practical guidelines and business operations which have adhered to the Corporate Governance Code. Moreover, the Company's corporate governance has been widely disseminated and communicated to the Company's staff for acknowledgment. Besides, the Company has encouraged its staff to involve in compliance with such policy.

As a result of the Company's administration which has always complied with the Principles of Good Corporate Governance, by realizing the significance of and responsibilities towards shareholders and stakeholders of the Company, the Company then received results of assessments by the regulatory units, various organizations and agencies, as follows:



The Company received an "Excellent" rating in the assessment of the quality of the 2018 Annual Ordinary General Meeting of Shareholders by the Thai Investors Association.



The Company received an "Excellent" rating in the assessment of the corporate governance of Thai listed companies for 2018 from the Thai Institute of Directors Association (IOD).



### 9.1 Corporate Governance Policy

The Board of Directors realizes the significance of ensuring that shareholders exercise their rights, and has the duty to equally safeguard the benefits of all shareholders, including institutional investors or major or minor shareholders in their capacity as investors in the Stock Exchange and as shareholders who own the Company, in accordance with the accepted CG Code of the Stock Exchange of Thailand, namely:

1) Shareholders' Rights

Promoting shareholders to exercise their basic rights and taking care of shareholders better than their rights as specified by law without any actions in violation of or depriving shareholders of their rights.

2) Equitable Treatment of Shareholders

Monitoring to ensure that all shareholders are equally treated and protected in respect of their basic rights, implementing measures to prevent inside information usage for personal gain or others, which would cause damage to shareholders as a whole.

3) Role of Stakeholders

Taking care of stakeholders based on their rights under applicable laws without any actions in violation of stakeholders' rights as well as establishing measures to compensate any stakeholders suffering from damage arising from violation of rights, promoting cooperation between the Company and stakeholders for the Company's prosperity, financial stability and sustainability. The Company formulates the policy on anti-corruption and anti-bribery to prevent any act in exchange for any business advantage of the Company or granting of any item or any other benefits to any person who has authority or business related to the organization for the business benefits of the Company.



#### 4) Disclosure and Transparency

Undertaking all activities with transparency, open for inspection, and sufficient information disclosure to all relevant parties as well as monitoring disclosure of material information relating to the Company, both financial and non-financial records, to ensure accuracy, completeness, timeliness and transparency through easy access with equality and reliability.

#### 5) The Board of Directors' Responsibilities

Ensuring that the Board of Directors performs duties with honesty and due care to the best interest of the Company and in fairness to all shareholders under the good internal control system and appropriate risk management, including compliance with the Company's code of ethics.

In 2018, the Company has adhered to the Corporate Governance Code for Listed Companies as stipulated by the Stock Exchange of Thailand as follows:

### 1. Shareholders' Rights

The Company gives priority to shareholders' rights and also realizes the significance of shareholders and their rights of ownership to control the Company through appointment of the Board of Directors and their rights to make decisions on significant changes of the Company. The Company thus promotes shareholders to exercise their protected basic rights. In this respect, shareholders shall be informed of the Company's correct, complete, sufficient and up-to-date information and news, including the right to attend the shareholders' meeting, the right to appoint proxy to attend and vote at the meeting, the right to share opinions and make inquiries in the shareholders' meeting in order to jointly make decisions on the Company's important matters, e.g., profit allocation, election of directors, determination of remuneration for directors, appointment of the auditor, determination of the audit fees, and approval of important transactions which may affect the Company's business direction, etc. The Board of Directors clearly sets out the corporate governance policy that the Company shall promote shareholders to exercise their basic rights without taking any actions in violation of or depriving shareholders of their rights. The guidelines for best practices towards shareholders are as follows:

#### Annual Ordinary General Meeting of Shareholders

1. The Company assigns Thailand Securities Depository Company Limited, as its share registrar, to deliver the notice of the shareholders' meeting and supporting documents to all shareholders in advance at least 21 days prior to the meeting date, whereby the notice of the meeting shall contain complete and clear details on day, time, place and agenda items, as well as clearly specifying objectives, reasons, and opinions of the Board of Directors on each item of the proposed agenda to ensure that shareholders acknowledge matters to be considered in the meeting in order to serve as a factor for consideration of making a decision to attend the meeting, and that shareholders obtain information in support of their decision making in advance prior to the meeting. In this regard, the Company shall avoid adding other agenda items required the meeting's resolution without prior determination in the shareholders' meeting, which is deemed to be unfair treatment towards shareholders absent from the meeting.

2. In the annual ordinary general meeting of shareholders, the Company shall regularly propose the remuneration for directors to shareholders for consideration and approval on a yearly basis as well as proposing the policy to determine remuneration, including criteria for provision of the remuneration for directors in support of shareholders' consideration.

3. The Company allows shareholders to vote to elect directors on an individual basis, by nominating directors to shareholders for voting on an individual basis in order for shareholders to have the right to truly elect directors of their choice.

4. The Company allows shareholders to propose in advance items of the agenda of the shareholders' meeting and nominate directors, by way of announcement via the channels of the Stock Exchange of Thailand and the Company's website, together with detailed and clear criteria for consideration and acceptance of the proposed matters in the agenda, directly via the Company's website.

5. The Company allows shareholders to make inquiries and provide their opinions in advance to the Board of Directors on any matters relating to the Company, which would be answered in the shareholders' meeting, by way of announcement via the channels of the Stock Exchange of Thailand and the Company's website, directly to the Company Secretary via the Company's website. And during the meeting, the Chairman of the Board of Directors who presides over the shareholders' meeting allows

and encourages shareholders to share opinions and ask questions concerning related matters to the meeting, whereby sharing opinions or asking questions relating to agenda items is allowed during the meetings, after the end of report or presentation of each agenda item; or further sharing opinions or asking questions relating to matters other than the agenda items is allowed after the meeting has already proceeded in accordance with all agenda items.

6. The Company has a policy to encourage shareholders, particularly institutional investors, to attend the shareholders' meeting, whereby prior registration shall be available.

7. The Company uses the barcode system and the meeting program provided by InvenTech Systems (Thailand) Co., Ltd. in the shareholders' meeting, including registration, vote, counting of votes and display of the voting results to ensure the rapid, correct and precise conduct of the meeting.

8. The Company arranges for its legal advisor and at least two shareholders' representatives to serve as witnesses in the counting of votes, to ensure transparency, compliance with the laws and articles of association. The Chairman of the Board of Directors who presides over the shareholders' meeting introduces the examiners of the vote counting to the meeting, and arranges to have it recorded in the minutes of the meeting, with the voting results showing all favorable votes, unfavorable vote, abstaining votes, and voided voting cards. As for the voting results, shareholders may examine such results, as the Company discloses the resolutions, together with the voting results, in each agenda item to the meeting.

9. The Company shall specify complete details on agenda items in the notice of the shareholders' meeting, consisting of:

- 9.1 To consider the election of directors, by specifying names, surnames, education, work experience, number of listed and general companies in which they hold office as director, including nomination procedures and criteria, category of nominated directors, such as, directors or independent directors, together with information on attendance at the previous meetings, and period/years of holding office as director in the Company;
- 9.2 To consider the appointment of auditor, by clearly specifying the auditor's name, company, auditing license, experience and capabilities, years of audit service for the Company, including issues relating to independence and remuneration for the auditor;
- 9.3 To consider and approve dividend payment, by notifying the Company's policy on dividend payment, proposed dividend rate, and reasons and supporting information, including suspension of dividend payment;
- 9.4 The notice of the meeting shall clearly contain facts and reasons of each agenda item, including opinion of the Board on each agenda item.

10. The Company efficiently prepares the minutes of the shareholders' meeting covering significant details on various matters as follows:

- 10.1 Record of clarification on the voting procedures, by notifying shareholders of voting method and counting by using voting cards, including method of display of the results of votes, prior to the meeting;
- 10.2 Record of questions posed by the shareholders and answers or opinions on various items at the meeting to allow the shareholders absent from the meeting to acknowledge the same;
- 10.3 Clear record of resolutions of the meeting, together with such votes on each agenda item to agree, disagree and abstain on all items requiring voting;
- 10.4 Record of the list of attending directors and absent directors, together with their position, for review of the directors' participation in each shareholders' meeting.

In this regard, the Company has publicized the resolutions of the shareholders' meeting via the news system of the Stock Exchange of Thailand and on the Company's website within the following business day and also publicized the complete minutes of the shareholders' meeting on the Company's website at [www.ch-karnchang.co.th](http://www.ch-karnchang.co.th) within 14 days from the meeting date to enable the shareholders to review such information instead of waiting until the next meeting. Moreover, video presentation of the atmosphere of the shareholders' meeting is made available on the Company's website in order to allow shareholders who do not attend the meeting or any persons interesting in the Company's information to acknowledge the details of the meeting other than those recorded in the minutes of the meeting, whereby such video presentation is made available on the Company's website until the next shareholders' meeting.

11. The Chairman of the Board of Directors, chairpersons of various committees, namely, the Chairman of the Audit Committee, the Chairman of the Nomination and Remuneration Committee, the Chairman of the Corporate Governance and Risk Management Committee, the Chairman of the Corporate Social and Environmental Responsibility Committee, the Chairman of the Executive Board, and the President (top management), including auditor and legal advisor of the Company, participate in every annual ordinary general meeting of shareholders to answer questions in relevant matters.

12. The Company greatly realizes the significance of the shareholders' meeting, i.e., the meeting place must be convenient for the shareholders' commute, including suitable and sufficient time. The Company thus uses its office as the meeting place, which is located at No. 587 Viriyathavorn Building, Sutthisarnvinitchai Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok, and which is convenient for commuting, nearby a subway station or an expressway on- and off-ramp, by providing a shuttle van service to and from a subway station, with sufficient parking areas for shareholders.

13. The shareholding structure of the Company and its subsidiaries is disclosed with clarity, transparency and open for review, and without any cross shareholding in the Company Group.

14. The Company has a free float greater than 40 percent, whereby the Board of Directors shall hold shares in aggregate not exceeding 25 percent of the Company's issued shares.

15. The Company's shareholding proportion of institutional investors in aggregate is more than five percent.

16. The Company has treated shareholders equally regarding share repurchase and opportunity for shareholders to contact or communicate each other.

17. The Company has no shareholders' agreement which has a material effect on the Company or other shareholders.

## 2. Equitable Treatment of Shareholders

The Company has a policy to promote and ensure equal and fair treatment towards all shareholders, including minority and foreign shareholders, with the following measures for protection of the shareholders' basic rights:

1. The Company allows all shareholders to cast votes, namely, one share for one vote, to ensure equitable treatment towards the shareholders, based on the criteria that shares of the same type should represent the right to vote on an equitable basis, namely, one share for one vote.

2. The Company has the process and channels for minority shareholders to involve in the Company's management, by allowing the minority shareholders to propose any item of agenda of the ordinary general meeting of shareholders and propose any qualified person to be considered and appointed as the Company's director prior to the meeting date. In this connection, the Company clearly notifies the shareholders of the details, together with the criteria for the consideration via channels of the Stock Exchange of Thailand and the Company's website, for four months, in order to build up the confidence of the minority shareholders to exercise the right to propose any matters relating to any significant change of the Company and the right to elect any independent directors to take care of the benefits on their behalf.

3. The Company sets out the written guidelines to prevent the use of insider information of the Company under the resolution of the Board of Directors, whereby the Company treats this as important policy which will prevent directors, management and staff from abusing their position for personal interests, as specified in the Annual Report. In addition, the Code of Conduct and Business Ethics are distributed and disseminated to all directors, management and staff of the Company for acknowledgment and compliance, which are available on the Company's website as a channel for all staff to access such information.

The Company's directors and management are required to disclose the reports to the Securities and Exchange Commission on their holding of securities, his/her spouse's holding of securities and minor children's holding of securities which are securities in the Company, as well as reporting on every change in such holdings of securities in respect of purchase, sale, transfer or acceptance of transfer, under Section 59 of the Securities and Exchange Act B.E. 2535 (1992) within three business days after the date of purchase, sale, transfer or acceptance of transfer of securities. Moreover, the directors and management realize their duties and responsibilities as specified, including the penalty provisions as specified in the Securities and Exchange Act B.E. 2535 (1992).

The Company pays significant attention to the efficient internal control system by setting out the internal control guidelines to prevent and minimize risks which may arise, namely, the Company specifies that management with access to insider information shall be prohibited from taking any actions in violation of Section 241 of the Securities and Exchange Act B.E. 2535 (1992), including applicable regulations. Due to the guidelines to prevent the use of insider information, in each past year, there has never been any case that the Company's directors and management abuse insider information to seek personal interests or others' interests.

4. The Company clearly discloses to shareholders the details and reasons of execution of related party transactions requiring the disclosure or approval of shareholders under the Stock Exchange of Thailand's regulations, by disclosing names and relationship of connected persons, pricing policy and transaction value, including opinion of the Board relating to such transactions.

The Board of Directors sets out a policy to prohibit its directors and executives who are connected persons or interested persons in relation to any agenda items to be considered from participating in the meeting and voting on such items. The management gives prior notice to such directors and executives who are not allowed to participate in the meeting or vote on such item. In considering a connected person and interested person, the Board of Directors takes into account such reports on interests which all directors and executives have a duty to prepare and submit to the Chairman of the Board of Directors and the Chairman of the Audit Committee in accordance with the Board of Directors' policy requiring directors and executives to report on their personal interests.

5. The Company discloses that the connected transactions have been executed according to market price and in accordance with the ordinary course of business. In the previous year, the Company did not execute any connected transactions in violation of or not in compliance with the rules of the Stock Exchange of Thailand and/or the Office of the Securities and Exchange Commission. In this regard, other than the notifications of such connected transactions via the channels of the Stock Exchange of Thailand, the Company also discloses the connected transactions in its Annual Report.

6. The Company has no the structure of business group with connected transactions in such a manner which may have a conflict of interests, taking into account the shareholding structure and level of execution of the connected transactions within the business group, based on the Company's income and expenditure as a result of the business operation in the group, compared with the total income and expenditure. In this regard, the level of execution of connected transactions shall be considered, both income and expenditure, which shall be less than 25 percent, except for transactions in the ordinary course of business and transactions with subsidiaries or associated companies without related persons holding shares exceeding 10 percent.

7. Any shareholder unable to attend the meeting in person may exercise his/her right to vote by appointing proxy to attend and vote on his/her behalf. In addition, the Company nominates members of the Audit Committee who are independent directors as an option for appointment of shareholders' proxy. The Company sends Proxy Form B, together with the notice of the shareholders' meeting, in order for the shareholder unable to attend the meeting on the scheduled date to enjoy his/her equal rights as shareholder.

8. Proxy Form sent by the Company with the notice of the shareholders' meeting specifies clear details, documents and evidence in support of the appointment of proxy, together with suggestions and procedures for appointment of proxy to enable shareholders to produce complete documentations without any difficulty in attending the meeting by proxy.

9. As for the requirement for appointment of proxy by any shareholder unable to attend the meeting in person, the Company has not set out any rules or conditions causing any difficulties to the appointment of proxy to attend the meeting on his/her behalf. Instead, such documents shall be certified by the proxy grantor and the proxy holder to confirm the exercise and granting of the right to attend the shareholders' meeting in accordance with the criteria.

10. The Company delivers the notice of the shareholders' meeting to shareholders in advance at least 21 days prior to the meeting.

11. The Company posts the notice of the meeting, together with details of the complete notice of the shareholders' meeting, on the Company's website in advance 30 days prior to the meeting date for the shareholders to have time to consider details of each agenda item, especially for those shareholders unable to attend the meeting in person.

12. The Company delivers the notice of the shareholders' meeting and supporting documents in Thai version to Thai shareholders. For foreign shareholders' convenience, the Company prepares the notice of the shareholders' meeting and supporting documents in English version to the foreign shareholders. In this regard, both all Thai and foreign shareholders shall receive complete documents within the period of time specified by law.

13. The Company has no policy to provide any financial support, whether loan or guarantee, to any companies which are not the Company's subsidiaries, except such loan or guarantee due to the Company's shareholding in accordance with a joint venture agreement.

14. Last year, the Company did not execute any transactions on acquisition or disposition of assets in violation of or not in compliance with the rules of the Stock Exchange of Thailand and/or the Office of the Securities and Exchange Commission.

### 3. Role of Stakeholders

The Company realizes the significance of rights of all groups of stakeholders, whether inside, such as staff and executives of the Company and the subsidiaries, or outside, such as customers, traders, competitors, creditors, communities, society, public sector and other relevant authorities, to ensure that the basic rights of these stakeholders are well protected and taken care of under the provisions of the laws and other relevant rules and regulations. The Company recognizes support from these stakeholders which could help building up the Company's competitiveness and profitability to result in long-term

success for the Company. The Company's Board of Directors has set out the corporate governance policy that the Company shall take care of the stakeholders based on their rights under the relevant laws, shall not take any acts in violation of the rights of stakeholders, and shall establish measures to compensate any stakeholders suffering from damage arising from violation of rights. The practices towards the Company's stakeholders are as follows:

1. Shareholders

- The Company has performed duties with integrity, honesty and fairness, taking into account both major and minor shareholders, and for the benefit of the group of related persons as a whole;
- The Company has managed its business to ensure prosperity, stability and good return for shareholders;
- The Company has protected its assets from depreciation or unnecessary loss;
- The Company has, regularly and in a timely manner, disclosed the accurate and sufficient information, both financial and non-financial, relating to the Company's business and the operational results, and representing the Company's actual operational and financial status;
- The Company's treatment of shareholders complies with the CG Code in the Chapter: Shareholders' Rights and Equitable Treatment of Shareholders. In addition, the Company pays significant attention to the annual ordinary general meeting of shareholders by complying with the assessment of the shareholders' meeting by the Office of the Securities and Exchange Commission and the Thai Investors Association before the meeting, during the meeting and after the meeting for facilitating all shareholders' exercise of their right to vote in the meeting equally.

2. Traders and/or Creditors/Debtors

- Every trader and/or creditor/debtor has been equally and fairly treated by the Company, taking into account the Company's optimum benefit and based on the fair returns for both parties;
- Based on the conditions of selection of traders, the Company's competition is on the basis of equal information access, without preventing any trader from participating in business competition;
- The Company has utilized copyrighted goods and services and does not support any goods or any actions in violation of the intellectual property;
- The Company has prepared appropriate and standard contracts;
- The Company has arranged for management and monitoring systems to ensure the full compliance with contracts, and internal control system to prevent any fraud and misconduct in every step of the procurement procedures;
- The Company has made payments to traders on time in accordance with terms of payment as mutually agreed, and has strictly complied with various conditions as mutually agreed upon with traders and/or creditors;
- The Company has refrained from seeking any trader's secret by any dishonest or improper means, such as, bribing any director and staff of competitors;
- The Company has refrained from making any negative accusation against traders without actual information;
- The Company has avoided the situation which causes a conflict of interest, as well as complying with the contractual obligations;
- The Company has provided actual information and accurate report. The negotiation for problem resolution is based on the business relationship;
- The Company has strictly complied with various agreements or conditions as mutually agreed, including commitment and contingent liability. In case it is unable to comply with any condition or there is a default on debt repayment, the lenders must be informed thereof without any undisclosed facts to jointly seek a justifiable solution;
- The Company manages fund to ensure appropriate structure in support of the Company's business operations and to maintain creditors' trust;
- The Company is determined to maintain the sustainable relationship with creditors and mutual trust.

### 3. Customers

- The Company has clear and concrete policies and practices with fairness and responsibility towards customers. The Company maintains the optimism and gives priority to customers, treats customers willingly, actively, politely, keeps customers' confidential information from misuse for personal gain or others, as well as treating all customers equally without discrimination;
- The Company delivers quality goods at fair price in accordance with agreements with its customers;
- The Company provides correct, adequate and up-to-date information, news, and suggestions relating to goods and services to customers;
- The Company strictly complies with various conditions with customers. If the Company is unable to comply with any of such conditions, the Company must promptly give notice to customers to jointly consider finding a solution to such problem.
- The Company has a procedure for customers to submit any complaint about quality, quantity, safety of goods and services, including turnaround time for delivery, and the Company makes its best efforts to ensure rapid turnaround time to customers.

### 4. Competitors

- The Company has clear and concrete policies and practices with fairness and responsibility towards competitors, based on ethics, transparency and fair competition within the scope of laws;
- The Company has free trading policy and believes that competition is a positive factor to encourage the development of service standard and innovations to be offered to customers;
- The Company has complied with the fair competition framework;
- The Company in no way discredits any trading competitor's reputation by negative accusation without actual information;
- The Company in no way accesses any competitor's confidential information through any dishonest or other inappropriate methods.

### 5. Business Interested Parties

- The Company has clearly determined policies and procedures for approval of connected transactions to prevent any potential conflicts of interest.

### 6. Staff

- The Company has policies and practices relating to occupational health and safety for staff at work place as well as creating a good working environment and promoting good physical and mental health of staff, by arranging for fitness room, annual sports competition, to ensure the unity and good relationship;
- The Company truly realizes the significance of its staff, and to meet its objectives, the Company recruits and employs knowledgeable, capable and experienced personnel to perform works, and in response to the Company's requirements and growth, by continually organizing programs for development of staff knowledge and capacities to advance their skills;
- The Company has concrete and open policies and practices as to management of staff remuneration and welfares on an equal and fair basis, whereby the Company has equally and fairly treated its staff through proper and fair remuneration and welfare, as well as provided more welfares than those specified by law, such as, establishment of a provident fund, medical treatment packages in hospitals designated by the Company, financial aids in the event of death of staff or their parent or spouse, annual health check-up, 5S activity, and fitness center, etc.;



- The Company truly realizes the significance of personnel development by establishing clear internal personnel development plans, encouraging all levels of its staff up to high ranking executives to receive training for improvement of their knowledge and capacities, both in theory and practice, so as to ensure the efficient performance skills, including fair employment conditions suitable for the market and in compliance with the labor laws;
- The Company provides the fair and suitable remuneration for staff based on their performance by applying the staff performance evaluation system to measure their capabilities to ensure development of competency and clear performance measurement subject to key performance indicators (KPI) for all major activities, in support of the consideration of merits of staff to ensure incentives for staff development and remuneration in connection with value added to the business and in line with the Company's operational results for short and long term;
- The Company builds the participatory working atmosphere and teamwork by allowing staff to express their opinions relating to their works;
- The Company establishes a policy on human rights by determining clear operational guidelines and practices towards non-discrimination, equal employment opportunity for women, persons with disabilities, underprivileged groups, youth, elderly, and recognition of staff's right to collective bargaining. In 2018, the Company received no complaint about violation of human rights;
- The Company ensures that staff strictly comply with laws and regulations relating to staff, including provision of suggestions in order to prevent any illegal action, whereby the Company supervises to ensure that staff use lawful products and refrain from infringement of copyrights or intellectual property, along with support of compliance with the operational guidelines and performance of duties with integrity, without any involvement with corruption for the benefits and success of the Company.

#### 7. Society and Public

- The Company has clear and concrete policies and practices with fairness and responsibility towards society, and with transparent operations, by taking into account the public interest and refraining from taking any acts which may cause damage to the country's reputation, natural resources, environment and public interest;
- The Company has promoted and instilled into its staff at all levels the corporate social responsibility;
- The Company in no way facilitates, supports or allows to be instrumental in any avoidance of compliance with the law.

#### 8. Communities

- The Company has considered communities as part to be concerned and facilitated, and thus focuses on various activities for improvement of the quality of life of communities and environment as its contribution to society. The Company then has a policy to support and participate in activities related to development of communities by complying with laws and regulations;
- The Company regularly participates in meetings, sharing of opinions, and provides cooperation with local agencies for development of livelihood of communities;
- The Company establishes preventive and remedial measures against environmental and community impact as a result of the Company's operations.

#### 9. Environment

- The Board of Directors has set out a policy to operate the business by taking into account the environment, with a commitment to compliance with applicable laws, regulations, standards and requirements, including strict adherence to the government's environmental policies, together with its readiness to continuously and seriously carry out the development of the environmental management procedures within the organization to ensure the cost-efficient resources utilization and minimize waste with the environmental impact from the organization's activities, including provision of knowledge and training regarding environment to staff and participation in support of activities related to community development to ensure the continuity of environmental activities and reflect the business sustainability;

- The Company has developed and improved the environmental management system in all activities of the Company to continuously minimize pollution and impact on the environment, with clear objectives, goals, action plans and evaluation;
- The Company has promoted the environment preservation, as well as publicizing the information and news, and cooperated with the staff, customers, government agencies and private entities, including the public, as a gesture of the Company's image and awareness of the environmental management;
- The Company has rapidly and efficiently responded to any events giving rise to impact on the environment and communities caused by the Company's operation;
- The Company has raised the consciousness and responsibility of staff in relation to environment under the environment management system as well as campaigning conservation and consumption of energy and resources with efficiency through training and public relations media, such as, internal newsletters, notice board, internal circular letters, in order to regularly keep them well informed on knowledge and skills on environment;
- The Company has presented the results of performance in compliance with the policy and action plans in respect of the social responsibility by reporting directly to the Board of Directors and disseminating the social and environmental activities to the Company's staff, shareholders, and persons related to the Company, as well as publicizing such information via website and Annual Report of the Company.

10. The Company has set out a non-infringement of human rights policy to confirm its respect for human rights which is the foundation of personnel care and development, and which will play an important role in building the Company's quality and achievements as a whole. The Company is committed to its staff care as follows:

1. In terms of remuneration and welfare, other than the fundamental welfare as required by laws, the Company also commits itself to paying remuneration and providing welfare as appropriate and reasonable, always taking into account the overall market condition;
2. In terms of personnel development, the Company has set out a personnel development policy by ensuring satisfaction of remuneration and work environment through development of competency in response to requirements of each work unit for the purpose of the organization's competitiveness.

11. The Company determines a non-infringement of intellectual property or copyright policy and practices to prevent any problems which may damage or discredit the Company, by prohibiting its management and staff from using any illegal software and copying any copyrighted software for any reason whatsoever without prior permission of the software owners. All staff have a duty to help take care of the Company's intellectual property works and refrain from misusing or allowing any third parties to use the Company's intellectual property without permission. In addition, the Company formulates a policy to forbid any arrangements which infringe intellectual property of any kind, based on the following guidelines:

1. All staff have duty to protect and keep the Company's intellectual property confidential to ensure that such information must not be leaked out and exploited for personal gain or any other person's gain without permission;
2. All staff must respect and honor others' intellectual property and refrain from exploiting any of others' intellectual property, whether in whole or in part, without the owner's permission.

12. The Company determines an anti-corruption and bribery policy to prohibit any bribe payment for the Company's business interest or granting of any items or any other benefits to any persons having a duty or business related to the organization for the Company's business interest. It is clearly set out as a guideline to prevent any problems due to corruption and unfairness in the business operation, such as, compliance with prohibitions, action plans or internal control measures, morality, and work supervision, as a duty of staff at all levels in the Company, as well as monitoring code of ethics, morality and action plans or measures in work supervision relating to anti-corruption and bribery, including authority and duty to report on various matters directly to the Company's independent unit for inspection and monitoring. Moreover, the Company has adopted the corruption risk assessment process and the practices relating to supervision and control for prevention and monitoring of corruption risks, including guidelines for following up and evaluation of performance in compliance with the anti-corruption policy, by providing staff training to ensure their knowledge relating to the anti-corruption policy and practices at least once a year. The Company then

establishes the anti-corruption policy for ensuring strict adherence thereto and compliance therewith by all of the Company's directors, executives and staff. The following are the key practical guidelines:

1. The Company's directors, executives and staff of all levels should engage in activities with various agencies based on fairness, honesty, integrity, and transparency, provided that such activities must be proper in accordance with laws, policies, articles of association, rules announcements or accurate operational procedures.
2. The Company promotes and supports fair and honest treatments towards all its business alliances, including compliance with contractual obligations to the Company's stakeholders.
3. The Company promotes and supports awareness-raising among directors, executives and staff to ensure that they refrain from committing any fraud or corruption and realize negative impacts of corruption.
4. The Company supports and encourages its directors, executives and staff to refrain from receiving, agreeing to receive, providing any hospitality, gift/souvenir and any other payments which are extravagant and inappropriate from and to those who make business deals with the Company.
5. The Company arranges for staff training to educate them regarding the anti-corruption policy, practices and guidelines.

In this regard, the Company conducts supervision and monitoring to prevent any fraud or corruption by determining clear and concise procedures, and the internal unit has a duty to inspect the actual performance in order to prevent any fraud or corruption.

13. The Company has the corruption risk assessment process via the risk management working group which shall meet quarterly to report on the results, to management and the Corporate Governance and Risk Management Committee for further report to the Board of Directors, respectively, and also determines the practices relating to supervision and monitoring to prevent and follow up corruption risks, as follows:

1. Staff are prohibited from granting or offering any items or any other benefits to third parties, such as, government officials, agents, representatives, counterparts, etc., with the intention of inducing such third parties to take or omit to take any acts in violation of laws or contrary to their positions or functions or in exchange for undue privileges;
2. Staff are prohibited from demanding or receiving any items or any other benefits for personal gain or for gains of others in a manner that persuades them to abuse their duties or neglect to perform their duties;
3. Any business dealings in association with various agencies, such as, government agencies, state enterprises or private sector, etc., both local and international, must be transparent, fair and lawful in Thailand and foreign countries where such dealings take place;
4. Any fraudulent acts against duties are deemed to be a serious disciplinary misconduct.

14. The Company realizes the significance of communication with all groups of stakeholders to exchange information, as well as listening to opinions and suggestions of all groups of stakeholders for common interest. In case where any stakeholders are not fairly treated by the Company, they may contact or file complaints directly with the Company through the Audit Committee or via e-mail: [audit\\_committee@ch-karnchang.co.th](mailto:audit_committee@ch-karnchang.co.th), and/or through the Company Secretary or via e-mail: [company\\_secretary@ch-karnchang.co.th](mailto:company_secretary@ch-karnchang.co.th). In 2018, there was no any complaint.

15. The Company determines policies or guidelines for protection of staff or any whistleblower by establishing measures to protect them under the criteria as follows:

1. Any complainant or person who provide cooperation in fact-findings may choose not to disclose his/her identity if he/she considers it unsafe or damaging. However, if the identity is disclosed, it will enable the organization to report on any development and explain the facts to the complainant;
2. The Company will not disclose name-surname, address, photograph, or any other data which may identify the complainant or person who provide cooperation in fact-findings;
3. The complaint recipient will keep relevant information confidential/be concerned about safety by establishing measures to protect staff who make complaints and/or who provide information and/or cooperation in investigation, whereby they will be protected from unfair treatment, such as, change of work position, job description, work place, work suspension, threat, nuisance in performance of work, employment termination, as a result of the complaints;
4. Any aggrieved party will be relieved by means of proper and fair process.

16. The Company arranges for channels for all stakeholders, general people, and staff to make complaints on unfair treatment or to provide any clues relating to matters which may be considered illegal and correctable, including measures to protect staff who make the complaints and notice of the results to the complainants on a systematic and fair basis, by allowing staff to have channels to make their complaints and independently provide their opinions, as follows:

1. The complaint recipient shall gather facts concerning violation or non-compliance with ethics;
2. The complaint recipient shall report to the independent directors on facts, conduct an investigation of facts in order to consider the complaints, by dividing related matters into issues in terms of management, knowledge development, investigation of facts, etc.
3. As for the operational measures, the complaint recipient shall propose the independent directors to conduct an investigation of facts and establish measures to resolve such violation or non-compliance with laws.
4. As for the report on the results, the complaint recipient shall notify the complainants of the results should such complainants disclose their identity. In case of a significant matter, the results shall be reported to the Chairman of the Board of Directors and/or the Board of Directors.

17. The Stock Exchange of Thailand and the Office of the Securities and Exchange Commission. The Company, in its capacity as a public limited company listed on the Stock Exchange of Thailand, has strictly complied with the Securities and Exchange Act, including rules and regulations issued by the Stock Exchange of Thailand and the Office of the Securities and Exchange Commission.

Over the past period, the Company has disclosed its significant information via the news system of the Stock Exchange and prepared the financial reports and other reports, namely, connected transactions, minor shareholding distribution, in accordance with requirements of the Stock Exchange of Thailand and the Office of the Securities and Exchange Commission.

#### 4. Disclosure and Transparency

The Company realizes the significance of the good corporate governance by disclosing material information which affect or may affect change in the Company's securities value or investment decision-making or benefits of shareholders in order for shareholders and general investors to rapidly and equally acknowledge news and information.

The Company has the guidelines on disclosure of significant information relating to the Company to the public with accuracy, completeness, punctuality and transparency in accordance with requirements stipulated by the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand through an easy access to information, namely, dissemination of information, both in Thai and English, on websites of the Stock Exchange of Thailand, the Office of the Securities and Exchange Commission, including the Company's website, with the practices as follows:

1. To ensure shareholders/investors' acknowledgement of the structure of ownership of business in which they have invested and their rights, compared with other shareholders, the Company discloses the most recent structure of major shareholders for those who utilize information to truly and clearly acknowledge shareholders; discloses shareholding of directors and executives, both direct and indirect, including information on structure of the business group and shareholding proportion, major risks in the Company's business operations.

2. The Board of Directors establishes a policy that the Company shall undertake activities with transparency and open for inspection with sufficient information disclosure to all relevant parties as well as monitoring to ensure disclosure of correct, complete, timely and reliable information, and everyone can equally access such information. In disclosing the Company's significant information, other than by way of dissemination under the specified criteria via the Stock Exchange of Thailand's channels, the Company also disseminates such information on the Company's website: [www.ch-karnchang.co.th](http://www.ch-karnchang.co.th), both Thai and English, such as, Annual Report, Annual Registration Statement (Form 56-1), Corporate Governance Policy, the Company's information, nature of business operations of the Company, financial statements, public relations news, shareholding structure, organization structure, business group structure, information relating to directors and executives, investor relations information, the Articles of Association, the meeting notice, the operational results, financial ratio, dividend payment record, together with other information, such as, corporate social responsibility activities. In this regard, the Company regularly updates the website for up-to-date information and news for convenient access and to the best interest of users.

3. In respect of investor relations, the Board of Directors is well aware of the significance of accurate, complete, transparent, thorough and timely disclosure of information relating to the Company. Therefore, the Company has set up an Investor Relations unit to be specifically responsible for disclosure of information to shareholders and investors, both financial and non-financial, such as, financial report, operational results, financial ratio, dividend history and other information which may impact the Company's securities value. Such information and news in support of their decision making are published for investors and relevant parties through various channels and media of the Stock Exchange of Thailand, the Office of the Securities and Exchange Commission, including the Company's website at [www.ch-karnchang.co.th](http://www.ch-karnchang.co.th) in both Thai and English languages.

Those interested to receive information in support of investment may contact Khun Sawanya Trivisvavet at Investor Relations, Telephone 0-2275-0026 ext. 2317-2319.

The provision of the Company's related information to securities analysts is also another main duty of the Investor Relations unit since the Company's information is made available in the Analyst Consensus to assist investors in making their decisions to invest. The Investor Relations staff are then assigned to provide such information to ensure correct understanding and maintain good relationships with securities analysts. Staff may review and correct the Analyst Consensus, as opposed to guiding or distorting the Analyst Consensus by securities analysts, or may revise only such facts which have been outdated or disclosed to the public, in which case, such revision is not treated as guiding investment.

Other than public disclosure, the Company also participates in various activities to serve as a disclosure channel to directly meet with investors and hear their opinions as well as create good relationships with investors via activities, such as, Roadshow, Opportunity Day, Company Visit, Analyst meeting, exhibition booths, etc.

In addition, the Company has set out a policy to rotate high level executives from the President, Executive Vice President, Vice President: Finance, and the Company Secretary to provide information and answer questions to investors, so that they would be personally aware of opinions and requirements of Thai and foreign investors. As for internal communication, the Investor Relations unit prepares IR Report, by collecting and summarizing questions and opinions of investors towards the Company's business operations for submission to the management on a monthly basis in order to present useful suggestions or feedbacks of investors to the management for further improvement of the operations. Consequently, such activities in various forms contributed to achievements of the Investor Relations, as follows:

#### **Investor Relations Awards**

- In 2017, the Company was presented with the Outstanding Investor Relations Awards in the category of companies listed on the Stock Exchange of Thailand with market capitalization ranging from Baht 30,000 - 100,000 Million in SET Awards 2017 Event.

- In 2018, the Company was presented with the Best Investor Relations Awards in the category of companies listed on the Stock Exchange of Thailand with market capitalization ranging from Baht 30,000 - 100,000 Million in SET Awards 2018 Event.

4. The Company discloses its financial information and reports the responsibilities of the Board of Directors towards the financial report, together with the auditor's report, the management discussion and analysis, general information and significant information in the Annual Report correctly, timely and in accordance with the regulations of the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand.

5. The Company did disclose the roles and duties of the Board and various subcommittees, number of meetings and attendances of each director in 2018.

6. The Board of Directors and the management have prepared the report on securities holding and change in securities holding in accordance with the rules of the Office of the Securities and Exchange Commission. The Board of Directors has also set out a policy requiring directors and executives to make a report on each change in their share acquisition-disposition/securities holding to the Board of Directors' meeting.

Other than the report on securities trading of executives in accordance with the requirements of the SEC, in regard to other executives along with staff who are authorized to access the Company's material information which may influence securities price movements, securities trading by usage of inside information, such as, information on capital increase or decrease, dividend payment, the Company's operational results, joint investments, etc., is considered as taking advantage of general investors. In this respect, the Company prevents any insider trading of securities by requiring its executives to report on their securities trading in accordance with the rules as required by the Stock Exchange, whereby all insiders should refrain from trading securities or should wait until the public has been informed of such information for a reasonable period of time.

7. The Board of Directors has set out a policy regarding report on interest of directors and executives by requiring directors and executives to report the Company of their personal interest or their related persons\*, which is related to the business operation and management of the Company or its subsidiaries, in accordance with the criteria, conditions and methods as required and announced by the Capital Market Supervisory Board. Such report also includes a disclosure of information on directorship or executive position in other legal entities and information on their shareholding in other legal entities in excess of 10 percent of the total number of voting shares by both reporters and their related persons (spouse, child/adopted minor child and related legal entity) for submission to the Company Secretary for reference, and copies of such reports shall be submitted to the Chairman of the Board of Directors and the Chairman of Audit Committee within seven business days from the date of receipt thereof.

8. In regard to the policy on payment of remuneration for directors and executives, the Company establishes a clear and transparent policy on remuneration for directors and executives, subject to review by the Nomination and Remuneration Committee. The remuneration shall be at the same level as that in the same industry and sufficient to retain the qualified directors and the President, and remuneration for executives, excluding the President, shall be in accordance with the principles and policies determined by the Executive Board corresponding to the Company's operational results and performance of the executives, as per the details of Remuneration for Directors and Executives on pages 84 to 86.

9. The Company establishes a whistleblowing policy for the purpose of development of the Company's sustainable growth and prosperity. Such arrangement is a key mechanism which will help enable management, staff or stakeholders to report on acts in violation of the code of ethics, fraudulent acts, and other ethical issues, without identifying any whistleblower's name. The Company will also assure whistleblowers that the whistleblowing process is independent, reliable and dependable, together with a monitoring process for fact-findings or conclusion, including fair whistleblower protection measures.

10. The Company establishes the policy on significant connected transactions which shall be subject to consideration and approval of the Board of Directors in compliance with the requirements of the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand. In the case of execution of connected transactions, the Company shall disclose details of persons with whom the Company executes such connected transactions, relationship, transaction description, price conditions/policies and transaction value.

11. The Company formulates its objectives/goals in the long run to become the leading construction and regional infrastructure investment development business that provides quality and full services.

## 5. The Board of Directors' Responsibilities

The Board of Directors acknowledges its role and responsibilities to set policies and directions of the Company's operations under the laws, its business objectives, the Articles of Association, as well as resolutions of shareholders' meetings. The Board of Directors monitors and supervises the management to efficiently and effectively perform in compliance with the specified policies in order to protect the Company's interests, maximize its economic value and create wealth for shareholders based on the CG Code. The Board of Directors monitors and supervises management to ensure that the strategies have been applied to the business for sustainable growth. In respect of the significance of the role and duties of the Board of Directors towards the Company and shareholders, the Board of Directors shall consist of qualified persons who have leadership, vision, knowledge, abilities and experience in various fields, honesty and integrity as well as independence on decision-making for the optimum benefits to the Company and shareholders as a whole.

**The Board of Directors complies with the best practices of the Stock Exchange in various aspects, as follows:**

### 1. Structure of the Board of Directors

The Board of Directors consists of 10 qualified members, with useful skills, knowledge and experience to efficiently perform their duties, comprising: six executive directors, four independent directors, constituting a counterbalance from non-executive director. The Company has four independent directors, which represents more than one-third of the total number of directors. The Chairman of the Board of Directors is an independent director by the definition of the Stock Exchange of Thailand and has no relationship with management and is not the President, so as to separate the policy-making and supervisory duty from the regular managerial duty. The Board of Directors clearly determines power and duties of the Chairman of the Board of Directors and the President.



The Company determines qualifications of “independent directors” stricter than the minimum requirements of the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand.

The Board of Directors establishes the policy on limitation to the number of listed companies in which each director will hold office as director which shall not exceed five companies, without any exemption, since, after considering the matter, it is deemed that such number enables all directors to devote their time to regularly attend meetings. In this regard, the Board of Directors has not established the policy on limitation to the number of term of office as director since directors have a good understanding of the Company’s business and provide suggestions which are useful for both the Company and shareholders. Furthermore, the Board of Directors also appoints the Company Secretary in accordance with the guidelines for the CG Code to provide suggestions relating to various laws and regulations as required by the Board of Directors and to supervise activities of the Board of Directors as well as coordinating to ensure compliance with the Board of Directors’ resolutions.

The Board of Directors establishes the policy on holding of office as director in other companies by the President, whereby the Board of Directors’ meetings shall be notified of reasons and details of companies in which he/she holds such office, which shall not exceed five listed companies.

## **2. Subcommittees**

The Company establishes five subcommittees to closely monitor and supervise the operation and regularly report to the Board of Directors, namely, the Executive Board, the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance and Risk Management Committee, and the Corporate Social and Environmental Responsibility Committee. In this regard, the Board of Directors determines duties and responsibilities of each subcommittee. Furthermore, all subcommittees have reported to the Board of Directors on their respective self-performance evaluation results, as follows:

1) The Executive Board has performed its duties to provide useful suggestions and advice to management and consider scrutinizing works proposed to the Board, as well as providing beneficial opinions and instructions in terms of financial management.

2) The Audit Committee has performed its duties to review the reliability of the Company’s financial reports prior to submission to the Stock Exchange of Thailand, audit the internal control system, as well as considering the disclosure of connected transactions to ensure the accurate and complete information, and provide useful suggestions and advice to management in terms of good corporate governance.

3) The Nomination and Remuneration Committee has performed its duties to consider nomination criteria and procedures for qualified persons to hold the position of the Company’s directors and consider determining criteria on consideration of remuneration for directors and President.

4) The Corporate Governance and Risk Management Committee has performed its duties to provide suggestions, follow up performance under the CG Code, monitor and review the Company’s overall risk management, strategies for risk management.

5) The Corporate Social and Environmental Responsibility Committee has performed its duties to provide suggestions, follow up performance to ensure achievement of the goals and the social and environmental policy as well as considering and following up progress of corporate social and environmental implementation, together with evaluation of success.

## **3. Roles, Duties and Responsibilities of the Board of Directors**

1) The Board of Directors comprises personnel having knowledge, ability, skills and experiences in various fields to exercise their judgment independently with leadership, who determine vision, missions, strategies, goals, business plans and budget of the Company, and supervise the management to take actions in compliance with the business plans and forecast budget with efficiency and effectiveness so as to optimize the economic value to the business, including monitoring the operational results to meet the objectives and comply with the policies, rules, laws and other relevant regulations.

2) The Board of Directors establishes a corporate governance policy and has such policy reviewed at least once a year.



3) The Board of Directors has a duty to consider granting approval of important matters relating to the Company's operations, such as, vision and missions of the Company, strategies, financial target, action plan and budget, as well as supervising, controlling, monitoring to ensure management's compliance with the specified policies and plans with efficiency and effectiveness so as to enhance the optimum economic value to the business, and ensure that the operational results meet the objectives and comply with the policies, rules, laws, and relevant regulations. The Company did have its vision and missions reviewed and approved at least every five years. Subsequently, the Board of Directors' Meeting No. 7/2014 on December 18, 2014 resolved to grant approval for the Board of Directors to consider reviewing the Company's vision, missions or strategies in every previous accounting year in order for the Board of Directors to oversee and monitor the implementation of the Company's strategies.

4) The Company prepares its code of ethics since the year 2003, with the approval by the Board of Directors. The code of ethics contains proper conduct and practices for directors, executives and staff, and guidelines for conduct and treatment towards the Company, colleagues, third parties and society, in accordance with the best practices. In the past, all directors, executives and staff have been informed and well understood of the proper and ethical conduct and complied with such practices in the performance of their duties in line with the Company's missions, with honesty, integrity and equality, to build up confidence of shareholders and all groups of stakeholders, including the public and society.

The Company has the guidelines in support of compliance with the code of ethics, as well as following up performance, whereby the ethical compliance survey forms shall be sent yearly to all directors, executives and staff, and the results of the survey shall be then concluded as standard for strict adherence to the code of ethics.

In addition, the Company has determined to review its code of ethics on a regular basis, should it be found that any practices in its code of ethics do not cover its business operation, the amendment thereof shall be made promptly. Other than the provision for the annual survey on compliance with the Company's code of ethics for directors, executives and staff, in which they must sign to signify their responsibility for compliance with the Company's code of ethics, the Company also continues to encourage high and middle executives to undergo corporate governance training, in order to enhance their knowledge, understanding, vision and good attitude towards management in accordance with the CG Code, to create leadership and to succeed to an office in management, as well as to further perform duties and push ahead the organization with morals and ethics.

5) The Board of Directors establishes the Internal Audit Office which shall report directly to the Audit Committee, with the duty to follow up and review the Company's operations, together with the operating system in various departments of the Company to ensure efficiency in compliance with the annual audit plan as approved by the Audit Committee. Last year, the Company has no records of violation of any rules and regulations of the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand.

6) The Company establishes the Compliance Unit to perform the duty to provide suggestions and monitor to ensure the Company's compliance with laws, the Articles of Association, relevant rules and regulations, including disclosure and information memoranda.

7) The Board of Directors and the Audit Committee shall provide an opinion relating to adequacy of the internal control system in the Annual Report.

8) The Board of Directors properly considers the transactions which may have a conflict of interests or connected transactions or related party transactions under the best practices subject to review by the Audit Committee to ensure compliance with the rules of the Stock Exchange of Thailand and the Office of the Securities and Exchange Commission, as well as the disclosure of information on the execution of such transactions which may have a conflict of interests to the public. In this regard, the Company establishes the policy, rules and regulations, and procedures for approval of the transactions which may have a conflict of interests for executives, staff and the relevant persons for compliance with the significant principles, as follows:

(1) Compliance with the rules set out by the Stock Exchange of Thailand in the execution of connected transactions to propose the connected transactions to the Audit Committee for consideration and approval prior to seeking approval of the Board of Directors under the CG Code.

(2) Disclosure of information on the transactions which may have conflict of interest or connected transactions or related party transactions pursuant to the rules set out by the Office of the Securities and Exchange Commission/Stock Exchange of Thailand, in the Annual Registration Statement (Form 56-1) and the Annual Report, as well as disclosing the information of such transactions in the financial statements in accordance with the accounting standards.

(3) In the consideration of the execution of the transactions which may have a conflict of interests, the Board of Directors shall carefully consider such transactions to ensure the benefits of the Company and shareholders as a whole, whereby the interested directors shall not attend the meeting nor vote on such agenda.

9) In respect of risk management, the Board of Directors follows up and acknowledges the Company's risk management plan from management's report on operational results in every the Board of Directors' meeting and from the Report of the Corporate Governance and Risk Management Committee. In this regard, the Company determines and assesses its business risks by establishing the efficient risk preventive measures and risk management systems for the entire organization.

### **Risk Management Policy**

1. The Board of Directors, all executives, staff and units own the risks and have the duties to be responsible for, assess, follow up, and support the risk management process with efficiency.

2. All units of the Company shall have a risk management process, as well as having a systematic and continuous assessment and follow-up, subject to regular review at least once a year in line with business changes.

3. The risk assessment shall form an integral part of the annual work plan of all units, by considering all risks of the entire organization, taking into account such risk factors, both inside and outside the organization, including proper risk management.

4. The Corporate Governance and Risk Management Committee has the duties to assess the risk management and propose its opinion to the Board of Directors.

5. The organization culture will focus on common understanding and awareness of risks. The body of knowledge shall be established for staff at all levels to have access for study and research and sharing of experiences, which would pave the way for development and improvement of the risk management process to become an efficient mechanism in the strategic administration.

#### **10) Segregation of Roles and Duties between the Board of Directors and Management**

The Company has the roles and duties between the Board of Directors and management clearly segregated, namely, the Board of Directors shall have the duty to set out the Company's policies and supervise management's operations while the Company's management shall have the duty to handle various administration affairs to ensure compliance with the policies set out by the Board of Directors. Therefore, the Chairman of the Board of Directors and the President shall be two different persons, and the Chairman of the Board of Directors shall be an independent director.

The Board of Directors consists of the Chairman of the Board of Directors and directors. The Company's management consists of the Chairman of the Executive Board, the President, Senior Executive Vice President: Operation Group, Senior Executive Vice President: Administration Group, Executive Vice President: Construction 1, Executive Vice President: Construction 2, Executive Vice President: Construction 3, Executive Vice President: Construction 4, Executive Vice President: Engineering, Executive Vice President: Business Development, Executive Vice President: Purchasing, Executive Vice President: Accounting and Finance, Executive Vice President: Human Resource and General Administration, and Executive Vice President: Internal Audit Office.

11) The Board of Directors has monitored and supervised to ensure the Company's strategic implementation by setting out policy formulation process which is clear and ready for implementation, jointly meeting among high level executives, management and workers, planning process and plan implementation process in close cooperation with each other to convey knowledge and understanding in plans/action plans to all related personnel, namely, those who have a duty to be responsible for doing various projects, those who have a duty to conduct inspection and evaluation, appointing a working group to follow up performance, in which case, if it is found that performance fails to meet the target, trying to modify the action plans to ensure achievement of the set target.

#### 4. Board of Directors' Meetings

The Company schedules the Board of Directors' meetings in advance for directors to manage their time to attend the meetings, except for special agenda, the Chairman of the Board of Directors or the directors in the number specified by law may convene additional meetings as necessary. The Board of Directors regularly meets every two months. The President Office shall deliver the notice of the meeting, together with agenda and supporting documents, at least seven days prior to the meeting date for the Board's review prior to attending each meeting.

The agenda shall be determined by mutual discussion between the Chairman of the Board of Directors and the President. In 2018, the Board of Directors convened a total of seven meetings, one of which was convened with non-executive director without the management's presence in order to allow directors to independently discuss and share opinions as well as efficiently following up performance of the management. Moreover, the Executive Board meets on a monthly basis. Most of the directors were able to attend the meetings, except where they were engaged by urgent business. In every meeting, the Chairman of the Board of Directors shall serve as the chairman of the meeting to ensure each item shall be carefully considered and all directors shall be allowed to express their opinions and take part in discussions. In addition, the high level executives will attend the meeting to clarify the information in the capacity as persons directly relevant to the matters to the satisfaction prior to voting on each item. In this regard, the minutes of the meetings are recorded in writing and systematically kept for inspection.

Moreover, the Board of Directors sets out a policy to prohibit directors and executives who are connected persons or interested persons in relation to any items to be considered from attending the meeting or voting on such item. In considering a connected person and interested person, the Board of Directors shall take into account such report on interests which all directors and executives shall have a duty to submit in accordance with the Board of Directors' policy requiring directors and executives to report their personal interests in order to disclose such information to the Chairman of the Board of Directors and the Chairman of the Audit Committee. In addition, the Board of Directors establishes a policy relating to minimum quorum of a Board of Directors' meeting to pass resolutions, whereby the directors present at the meeting shall not be less than two-thirds of all directors.

Meeting attendance of each director (attendances/total number of meetings) may be summarized as follows:

| Directors                         | Board of Directors | Executive Board | Audit Committee | Nomination and Remuneration Committee | Corporate Governance and Risk Management Committee | Corporate Social and Environmental Responsibility Committee |
|-----------------------------------|--------------------|-----------------|-----------------|---------------------------------------|--|---|
| 1. Mr. Aswin Kongsiri             | 7/7                |                 |                 |                                       |  |   |
| 2. Mr. Plew Trivisvavet           | 7/7                | 12/12           |                 | 2/2                                   | 4/4  |   |
| 3. Mr. Vitoon Tejatussanasoontorn | 7/7                |                 | 4/4             | 2/2                                   | 4/4  |   |
| 4. Mr. Thawansak Sukhawun         | 7/7                |                 | 4/4             | 2/2                                   | 4/4  |   |
| 5. Mr. Pavich Tongroach           | 7/7                |                 | 4/4             |                                       |  | 2/2   |
| 6. Mr. Narong Sangsuriya          | 7/7                | 12/12           |                 | 2/2                                   | 4/4  |   |
| 7. Miss Supamas Trivisvavet       | 7/7                | 12/12           |                 |                                       | 3/4*   |   |
| 8. Mr. Prasert Marittanaporn      | 7/7                | 12/12           |                 |                                       |  | 2/2   |
| 9. Mr. Ratn Santaannop            | 7/7                | 12/12           |                 |                                       |  |   |
| 10. Mr. Anukool Tuntimas          | 7/7                | 12/12           |                 |                                       |  | 2/2   |

**Remark:** \* The Board of Directors' Meeting No. 2/2018 held on April 27, 2018 resolved to approve the appointment of Miss Supamas Trivisvavet to hold the position of Corporate Governance and Risk Management Committee Member.

## 5. Self-Evaluation of the Board of Directors

The Board of Directors has a policy that its overall performance shall be evaluated at least once a year. In addition, the Board of Directors has evaluated performance of the President every year in accordance with the criteria specified by the Nomination and Remuneration Committee. In this regard, the Board of Directors also requires that evaluation subjects shall be reviewed to ensure that they are suitable for and in line with the roles, duties, responsibilities, and the guidelines of the Corporate Governance Code.

In this regard, the evaluation results are divided into six subjects, namely, structure and qualifications of the Board of Directors; roles, duties and responsibilities of the Board of Directors; the Board of Directors' meetings; directors' performance of duties; relationship with management; and self-development of directors and development of executives. In 2018, the Company delivered the board evaluation form to each director for evaluating the overall performance of the Board of Directors as a whole so that the evaluation results would be proposed to the Board of Directors to consider improving its performance. Most of the directors' opinions can be summarized as follows:

### 1) Structure and Qualifications of the Board of Directors

Most directors were of the view that the structure and qualifications of the Board of Directors were proper and suitable to the nature of business operations of the Company. The Board of Directors comprised personnel with sufficient knowledge, ability and experiences in a variety of fields to perform their overall duties efficiently. In this regard, the Board of Directors appointed another five subcommittees, namely, 1. the Audit Committee with the duty to help supervise and monitor the business as well as considering the appropriateness and justifications of various transactions for the optimum benefit of the Company; 2. the Nomination and Remuneration Committee with the duty to consider criteria and procedures for nomination of qualified persons to be appointed as the Company's directors based on transparency, fairness, without influence of any persons; 3. the Corporate Governance and Risk Management Committee with the duty to establish policies and directions of operations in respect of the good corporate governance of the Company, including risk management; 4. the Corporate Social and Environmental Responsibility Committee with the duty to establish guidelines and policies on corporate social and environmental activities; and 5. the Executive Board with the duty to supervise and provide suggestions to the management, and proceed with other matters as assigned by the Board of Directors.

### 2) Roles, Duties and Responsibilities of the Board of Directors

Most directors were of the view that the roles, duties and responsibilities of the Board of Directors were proper, namely, the Board of Directors gave priority and contributed sufficient time to consider significant matters relating to directions of the Company's business operations, review the corporate governance policy of the Company, as well as ensuring compliance with various policies, review of the code of business ethics and compliance. The Board of Directors, at the same time, set a policy to prevent a conflict of interests. As for connected transactions and transactions which might have a conflict of interest, the Board of Directors also followed the procedures by taking into account the optimum benefit of the Company. Furthermore, the Board of Directors has regularly reviewed the internal control system to ensure good and sufficient internal control system and appropriate risk management, as well as following up and monitoring the performance of duties of the management in accordance with the policies as assigned by the Board of Directors.

### 3) Board of Directors' Meetings

Most directors were of the view that the Board of Directors' meetings were proper, namely, the Company gave prior notice of annual schedule of the meetings to directors so that they would be able to manage their time to attend every meeting. The number of meetings and agenda were suitable, thereby supporting the Board of Directors to perform duties efficiently and enabling it to supervise and monitor the Company's business operations with success. Moreover, directors also received supporting documents prior to each meeting and had sufficient time to study additional information in preparation for each meeting. The supporting documents contained sufficient information for decision making and they could ask for additional information in support of decisions to the benefit of the Company. Furthermore, the atmosphere at each Board of Directors' meeting allowed all directors to express constructive opinions without any influence of any persons. In addition, directors could fully discuss significant issues at each meeting.

#### 4) Directors' Performance of Duties

Most directors were of the view that directors' performance of duties was satisfactory, namely, they were well prepared and sufficiently study information prior to each meeting and regularly attend the meetings. In addition, directors independently provided their opinions and impartially considered various matters and were independent on voting, including useful suggestions for the Company's operations; and understood the significance of each matter and properly contributed their time to consider such matter; and opened for different opinions among them without any conflict.

#### 5) Relationship with Management

Most directors were of the view that the relationship with management was proper. Directors could straightforwardly discuss with the President and maintain good relationship with management, whereby the President could request directors' advice as and when necessary and the Board of Directors did not interfere in the performance of duties of the management. Moreover, the Board of Directors also participated in solving problems as appropriate in case the management's performance of duties did not meet the operational plans and forecast budget.

#### 6) Self-Development of Directors and Development of Executives

Most directors were of the view that the self-development of directors and development of executives were satisfactory, namely, directors understood their roles, duties and responsibilities, had sufficient knowledge and understanding of the Company's business, paid attention to significant information or news relating to economic and industrial conditions, changes in rules and regulations and the state of competition, which would allow directors to efficiently perform their duties. In this regard, all directors were trained to ensure their understanding of performance of duties in the capacity of directors. Furthermore, in case of new directors, the Board of Directors would have the management provide documents or briefing for the new directors to understand the business and performance of duties as directors. In addition, the Board of Directors also set out the succession plan to ensure continuity of performance of duties of the Company's high level executives.

Procedures/process of performance evaluation are as follows:

1. The Nomination and Remuneration Committee reviews the self-evaluation form to ensure its accuracy and completeness in accordance with the criteria stipulated by the regulatory unit;
2. The Company Secretary delivers a self-evaluation form to each director to evaluate the overall performance of the Board of Directors;
3. The Secretary to the Nomination and Remuneration Committee summarizes and reports the results of evaluation to the Nomination and Remuneration Committee;
4. The Nomination and Remuneration Committee reports the results of evaluation to the Board of Directors for acknowledgment and improvement of their performance to be more efficient.

### 6. Individual Performance Evaluation of Directors

The Chairman of the Board of Directors has conducted the performance evaluation of all directors since 2013 onwards in accordance with the criteria as specified by the Nomination and Remuneration Committee, to consider guiding the improvement and development of work performance of the Company's directors. In this regard, the evaluation results shall be divided into six subjects, namely, qualifications of directors; roles, duties and responsibilities of directors; the Board of Directors' meetings; directors' performance of duties; relationship with management; and self-development of directors. Procedures/process of performance evaluation are as follows:

1. The Nomination and Remuneration Committee reviews the self-evaluation form to ensure its accuracy and completeness in accordance with the criteria stipulated by the regulatory unit;
2. The Company Secretary delivers self-evaluation forms of all directors to the Chairman of the Board of Directors to evaluate the individual performance of each director;

3. The Secretary to the Nomination and Remuneration Committee summarizes and reports the results of evaluation to the Nomination and Remuneration Committee;

4. The Nomination and Remuneration Committee reports the results of evaluation to the Board of Directors for acknowledgment and improvement of their performance to be more efficient.

## 7. Evaluation of Performance of Subcommittees

The Board of Directors arranges for evaluation of performance of five subcommittees, namely, the Executive Board, the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance and Risk Management Committee, and the Corporate Social and Environmental Responsibility Committee, the results of which were used as guidance for improvement, correction and development of their performance. In this regard, the evaluation results are divided into six subjects, namely, structure and qualifications of the subcommittees, roles, duties and responsibilities of the subcommittees, the subcommittees' meetings, the subcommittee members' performance of duties, relationship with management, and self-development of subcommittee members and executives. The opinions of committee members can be summarized as follows:

1) Structure and Qualifications of the Subcommittees: The results of evaluation are proper. All subcommittee members are of the opinion that the total number of all subcommittee members is appropriate to the nature of business operations of the Company, thereby allowing the subcommittees to perform the overall duties efficiently; and the subcommittees comprise personnel with sufficient knowledge and experience in a variety of fields, which enable them to perform the overall duties efficiently. In addition, the subcommittees also have the duties in providing assistance in the corporate governance, nominating qualified persons to hold offices as directors, with transparency and justice, without undue influence of any person, including appropriate and competitive remuneration sufficient to retain qualified directors, setting out policies and directions of the implementation in respect of the corporate governance of the Company, code of ethics, as well as risk administration and management, taking care of and providing suggestions to the management, for the benefit of the Company's business operations under the good corporate governance.

2) Roles, Duties and Responsibilities of the Subcommittees: The subcommittees' results of evaluation are proper, which can be summarized as follows:

- The Executive Board has provided guiding policies, supervised, made suggestions and advice for the President and the management; has set up business plan, budget and managerial power of the Company as assigned by the Board of Directors; has inspected and followed up the compliance with the Company's policies and plans with efficiency; has conducted feasibility studies on new projects; and has reported on the Company's operational results to the Board of Directors.
- The Audit Committee has ensured that the financial statements have been prepared in accordance with the generally accepted accounting standards; the internal audit tasks have been supervised and monitored for ensuring the appropriate and effective internal audit system; the execution of transactions which may have a conflict of interest has been considered under the specified procedures and for the utmost benefit to the Company; the Company has complied with the securities and exchange law and other applicable laws; and the nomination of candidates for appointment, determination of remuneration, and assessment of the auditor's performance are appropriate.
- The Nomination and Remuneration Committee has ensured that the appropriate criteria for nomination of directors have been determined; the qualified candidates have been considered and nominated for appointment as the Company's directors; the appropriate and transparent criteria for consideration of remuneration for directors have been determined; remuneration for directors has been considered under the specified criteria for submission to shareholders; the results of the President's performance have been assessed under the specified criteria; and remuneration for the President has been considered in line with the results of assessment.

- The Corporate Governance and Risk Management Committee has conducted studies and followed up movement, tendency and practice in respect of the good corporate governance; has improved and made suggestions on the Company's corporate governance policy; has followed up and evaluated the results under the Company's good corporate governance; has considered policies and work plans relating to risk management; has monitored and reviewed the Company's overall risk management, strategies for risk management; and has reported on risks and actions taken to minimize risks to the Board of Directors.
- The Corporate Social and Environmental Responsibility Committee has conducted studies and followed up movement as well as monitored progress of social and environmental operations; has improved and made suggestions on the Company's environmental policy; has searched information or followed up significant news in respect of environment, and changes in laws and regulations; and has considered setting out policies and action plans in respect of social and environmental operations.

3) The Subcommittees' Meetings: The results of evaluation are proper. Subcommittee members are given prior notice of the annual schedule of the subcommittees' meetings so as to enable them to manage time to attend every meeting; the number of the subcommittees' meetings is suitable to support the performance of its duties efficiently and to supervise and monitor the Company's business operations successfully; the agenda of the subcommittees' meetings are suitable to support the performance of its duties efficiently; subcommittee members are also given supporting documents prior to each meeting and sufficient time to read such information in preparation for each meeting; the supporting documents contain sufficient information for subcommittee members' decision making; the subcommittees can request any other necessary information in support of their decisions for the benefit to the Company; the atmosphere at each subcommittees' meeting allows all subcommittee members to express constructive opinions without undue influence of any person; and subcommittee members can fully discuss significant issues at each subcommittees' meeting.

4) Subcommittee Members' Performance of Duties: The results of evaluation are proper. Subcommittee members are well prepared and sufficiently study information prior to each subcommittees' meeting; subcommittee members have regularly attended the subcommittees' meetings; subcommittee members independently provide their opinions; subcommittee members impartially consider various matters and are independent in making decisions or passing resolutions without undue influence of any individual; subcommittee members have provided useful suggestions for the Company's operations; subcommittee members understand the significance of each matter and properly contribute their time to consider such matters without wasting time on minor issues; and subcommittee members accept different opinions among them without conflict.

5) Relationship with Management: The results of evaluation are proper. Subcommittee members may straightforwardly discuss with the President; the subcommittees maintain a good relationship with management; the President can request subcommittee members' advice as necessary; the subcommittees do not intervene with management's performance of duties; and the subcommittees participate in solving problems as appropriate in case management's performance does not meet the specified plans and budget.

6) Self-Development of Subcommittee Members and Executives: The results of evaluation are proper. Subcommittee members understand their roles, duties and responsibilities; subcommittee members have sufficient knowledge and understanding relating to the Company's business to ensure efficiency in their performance; subcommittee members have paid attention to significant information or news relating to economic and industrial conditions, changes in rules and regulations and the status of competition, which allows subcommittee members to efficiently perform their duties; all subcommittee members undergo training to ensure their understanding of the performance of duties in their capacity as members; subcommittee members are well prepared and sufficiently study information prior to each subcommittees' meeting; subcommittee members have regularly attended the subcommittees' meetings; subcommittee members independently provide their opinions; subcommittee members impartially consider various matters and are independent in making decisions or passing resolutions without undue influence of any individual; subcommittee members have provided useful suggestions for the Company's operations; subcommittee members understand the significance of each matter and properly contribute their time to consider such matters without wasting time on minor issues; and subcommittee members accept different opinions among them without conflict.



#### Procedures/process of performance evaluation are as follows:

1. The Subcommittees prepare a self-evaluation form in accordance with the good corporate governance principles of the Thai Institute of Directors Association and the guidelines for operations of the subcommittee;
2. The secretary to the subcommittees summarizes and reports the results of performance evaluation of the subcommittees for improvement of their performance to be more efficient.
3. The Secretary to the Nomination and Remuneration Committee summarizes and reports the results of evaluation of the subcommittees to the Nomination and Remuneration Committee.
4. The Nomination and Remuneration Committee reports the results of evaluation to the Board of Directors for acknowledgement and improvement of their performance to be more efficient.

#### 8. Assessment of Performance in Compliance with the Company's Code of Ethics

The Board of Directors sets out the Company's code of ethics as principles and goals of the Company's business operations, and guidelines for performance of all directors, executives and staff. Directors, executives and staff will assess their performance in compliance with the Company's code of business ethics every year. In this regard, the results of assessment can be summarized as a whole that directors and executives have complied with the Company's code of ethics, as follows:

1. Compliance with the code of ethics: Understanding and adhering to the guidelines as specified in the Company's code of ethics.
2. Guidelines for business operations: Strictly complying with the laws applicable to the Company and the trading business under the desirable morality, including the Company's policies.
3. Conflict of interests: Not disclosing any confidential information of the Company to any third party; refraining from any act which will give rise to a conflict of interests between their own interest and the Company's interest; not involving in nor holding any share in any business which may have a conflict of interests with the Company.
4. Insider trading: Not disclosing any insider information which has not yet been disclosed to the public, which may affect the prices or trading of securities of the Company and its related companies.
5. Commitments to shareholders: Making an effort in best to create value added to the organization to ensure its capability to accommodate the business growth and expand its business with continuity and create value added to the shareholders in the long run.
6. Responsibilities for executives and staff: Setting out guidelines and practices for taking care of working environment to ensure safety for their life and properties at all times.
7. Commitments to communities, society and environment: Providing cooperation in making benefits for the communities, society and environment on an occasional and ready basis.
8. Disclosure of information and confidentiality: Complying with the policy to efficiently manage the Company's information; and disseminating necessary, correct and proper information to the public on an occasional basis; and not disclosing the Company's information which has not yet been disclosed to the public, including any personal information, nor using any information as known from performance of duties for their own interest.
9. The Company's assets: Setting out practices in taking care of the Company's assets to prevent them from loss, damage or misuse.
10. Gifts and parties: Setting out practices regarding giving of gifts and holding of parties by refraining from receiving any item or benefit from counterparts, contractual parties or persons who have connection with the Company's business, except during festival or according to custom, in which case, at the reasonable value as shall be considered by recipient.

## 9. Evaluation of Performance of the President

Independent directors and non-executive directors have continued to evaluate performance of the President every year from 2012 in accordance with the criteria as specified by the Nomination and Remuneration Committee. The Board of Directors has authorized the Nomination and Remuneration Committee to consider proposing remuneration and other benefits as appropriate for the President to use in the annual performance evaluation for the Board of Directors' consideration and approval. In this regard, the criteria for evaluation can be divided into three chapters, as follows:

### Chapter 1 : Success of Business Goals

### Chapter 2 : Performance Measurement, comprising:

- 1) Leadership
- 2) Determination of Strategies
- 3) Compliance with Strategies
- 4) Financial Planning and Performance
- 5) Relationship with the Board of Directors
- 6) Relationship with Third Parties
- 7) Management and Relationship with Personnel
- 8) Succession
- 9) Knowledge in terms of Products and Services
- 10) Personal Characteristics

### Chapter 3 : Development of CEO

## 10. Remuneration for Directors and Executives

### Remuneration for directors :

The Company establishes a clear and transparent policy on remuneration for directors and the President in line with duties and responsibilities of each director as chairman or member of subcommittee, subject to review by the Nomination and Remuneration Committee. The remuneration shall be at the same level as that in the same industry and sufficient to retain the qualified directors.

### Remuneration for President :

The Company formulates policies on remuneration for President. The Nomination and Remuneration Committee shall consider remuneration of the President in line with the Company's operational results in the short term and long term, and performance of the President for submission to the Board of Directors for consideration each year.

### Remuneration for executives :

Remuneration for executives shall be in accordance with the principles and policies determined by the Board of Directors corresponding to the Company's operational results and performance of the executives.

## 11. Development of Directors and Executives

### - Training for Directors and Executives

The Board of Directors has a policy to support and facilitate training and learning for its directors and executives to ensure their continued improvement and performance, involving both internal and external training courses. All directors must attend training for understanding of performance of their duties in their capacity as directors. The Board of Directors and the high level executives realize the significance of participation in training or seminars in various courses or development of their knowledge and skills. The Board of Directors attends training courses organized by the Thai Institute of Directors Association (IOD), namely, Director Certification Program (DCP), Directors Accreditation Program (DAP), The Role of Chairman (RCP), Audit Committee Program, Role of Compensation Committee (RCC).

In this regard, the Company has regularly sent directors and executives to attend training courses organized by the IOD and other institutions. In 2018, directors and executives attended various training courses, as follows:

| Names of Directors and Executives | Training Date             | Course / Organized by  |
|-----------------------------------|---------------------------|--|
| 1. Mr. Aswin Kongsiri             | October 30-31, 2018       | Board Matters and Trends Agenda BMT 6/2018, organized by the Thai Institute of Directors Association (IOD)   |
| 2. Mr. Plew Trivisvavet           | February 6, 2018          | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited  |
|                                   | September 11, 2018        | IFRS 9, organized by Krungthai Bank Public Company Limited   |
| 3. Miss Supamas Trivisvavet       | February 6, 2018          | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited  |
| 4. Mr. Prasert Marittanaporn      | February 6, 2018          | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited  |
|                                   | September 11, 2018        | IFRS 9, organized by Krungthai Bank Public Company Limited   |
| 5. Mr. Ratn Santaannop            | February 6, 2018          | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited  |
| 6. Mr. Anukool Tuntimas           | August 2017-February 2018 | Thailand Insurance Leadership Program (TIL) Class 7, organized by Office of Insurance Commission   |
|                                   | February 6, 2018          | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited  |
|                                   | July 4, 2018              | Self-Regulation Driving, organized by Thai Journalist Association  |
|                                   | September 11, 2018        | IFRS 9, organized by Krungthai Bank Public Company Limited   |
|                                   | June 21-26, 2018          | Leadership Communication Batch#8 (Certificate Program 2018), organized by Thailand Management Association (TMA)  |
| 7. Mr. Sittidej Trivisvavet       | February 6, 2018          | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited  |
|                                   | September 1, 2018         | Organizational Changes in Thailand 4.0, organized by CH. Karnchang Public Company Limited  |
|                                   | September 11, 2018        | IFRS 9, organized by Krungthai Bank Public Company Limited   |
| 8. Mr. Watchara Sanghattawattana  | August 13, 2018           | EEC Mega Infrastructure Project Development: An Innovation Approach by New Space Technology Frontier, organized by Geo-Informatics and Space Technology Development Agency (Public Organization): GISTDA |
|                                   | September 11, 2018        | IFRS 9, organized by Krungthai Bank Public Company Limited   |
| 9. Mr. Pichai Cheybumroong        | February 6, 2018          | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited  |
|                                   | September 1, 2018         | Organizational Changes in Thailand 4.0, organized by CH. Karnchang Public Company Limited  |
| 10. Mrs. Rinrada Tangtrongkid     | February 6, 2018          | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited  |
|                                   | May 21, 2018              | e-Tax Invoice and e-Receipt, organized by Dharmniti Seminar and Training Co., Ltd.   |
|                                   | September 11, 2018        | IFRS 9, organized by Krungthai Bank Public Company Limited   |
|                                   | September 28, 2018        | Innovation-Driven New Investing Strategies to keep pace with the World Business, organized by the Stock Exchange of Thailand   |

| Names of Directors and Executives | Training Date      | Course / Organized by  |
|-----------------------------------|--------------------|--|
| 11. Mr. Wiboon Ungapipathanachai  | February 6, 2018   | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited                                  |
|                                   | June 13, 2018      | Direct and Indirect Utilization of Statement of Cash Flows, organized by NYC Management Co., Ltd.                                    |
|                                   | July 18, 2018      | Financial Information Analysis and Financial Forecasting for Managerial Decision Making, organized by NYC Management Co., Ltd.       |
|                                   | August 30, 2018    | Customs Duty Accountants Need to Know, organized by NYC Management Co., Ltd.   |
|                                   | September 11, 2018 | IFRS 9, organized by Krungthai Bank Public Company Limited   |
|                                   | September 11, 2018 | 63 Accounting Techniques and Taxes for Foreign Exchange Rate-Related Business, organized by Dharmniti Seminar and Training Co., Ltd. |
|                                   | October 30, 2018   | TFRS 15: Revenue from Contracts with Customers, organized by NYC Management Co., Ltd.  |
| 12. Mr. Pornnarong Siriyothin     | February 6, 2018   | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited                                  |
|                                   | July 19, 2018      | Seminar on Japanese Construction Technology, organized by Advanced Construction Technology Center                                    |
|                                   | September 11, 2018 | IFRS 9, organized by Krungthai Bank Public Company Limited   |
| 13. Mr. Prapon Chanpradubfa       | February 6, 2018   | Thai Economy and Global Economy Trends for 2018, organized by Krungthai Bank Public Company Limited                                  |
|                                   | July 19, 2018      | Seminar on Japanese Construction Technology, organized by Advanced Construction Technology Center                                    |
| 14. Mr. Pairat Prom-In            | September 11, 2018 | IFRS 9, organized by Krungthai Bank Public Company Limited   |

#### - Orientation for New Directors

The Company also arranges for orientation for newly-appointed directors, whereby the Board of Directors assigns the Company Secretary to meet newly-appointed directors by convening a meeting with the relevant directors and/or executives and/or officers for clarification and answer to questions, as well as preparing documents and briefing for new directors, such as, information relating to the Company, business overview, shareholding structure, organization structure, listed company director's handbook, the CG Code, code of ethics, power and duties of the Board of Directors, the annual schedule of the Board of Directors' meetings. Meanwhile, the Company allows directors to attend any training course as suggested by the Office of the SEC and organized by the Thai Institute of Directors (IOD).

## 12. Succession Plan

The Board of Directors sets out a succession plan for executive level and in the primary line of work, by significantly taking into account the performance, potentials and readiness of each person. In this regard, the Company makes preparations for those potential successors in the development of their knowledge, competency and skills as required for their work positions for succession in the event that the Managing Director or executives in the key positions are not able to perform duties.

An executive who has been assigned to succeed an office shall not only be qualified and experienced in an appropriate field, but also accept transfer of knowledge and experience by rotation to other related work units, as well as attending additional necessary training courses to be well prepared in the performance of duties in a higher position in the future, and to ensure smooth succession and continued management.

The Company sets up a human resource management system with sufficient allocation, control and following up of the assessment in respect of nomination process for qualified and knowledgeable persons as required; appropriate and fair remuneration; determination of duties and responsibilities, performance of personnel; performance standard; personnel development; and efficient communication, to ensure staff knowledge and skills, by applying a performance evaluation system in support of consideration of remuneration as appropriate for staff ability and performance.



## 9.2 Subcommittees

(1) The Company's management structure comprises the Board of Directors and five subcommittees, namely, the Executive Board, the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance and Risk Management Committee, and the Corporate Social and Environmental Responsibility Committee. The names of members of subcommittees, including authority and duties of the respective committees are as follows:

### A. Executive Board

The Board of Directors appoints the Executive Board to help give suggestions and advice to management and make other arrangements as assigned by the Board of Directors. As at December 31, 2018, the Executive Board consists of six members, namely:

| Names                        | Positions                       |
|------------------------------|---------------------------------|
| 1. Mr. Plew Trivisvavet      | Chairman of the Executive Board |
| 2. Miss Supamas Trivisvavet  | Executive Director              |
| 3. Mr. Narong Sangsuriya     | Executive Director              |
| 4. Mr. Prasert Marittanaporn | Executive Director              |
| 5. Mr. Ratn Santaannop       | Executive Director              |
| 6. Mr. Anukool Tuntimas      | Executive Director              |

The Executive Board meets monthly for consideration of various matters within the scope of the authority assigned by the Board of Directors and for screening matters to be proposed to the Board of Directors for consideration and approval.

### Executive Board's Authority

The Board of Directors authorizes the Executive Board to have the following authority:

- 1) Providing policy guidelines, appointing, prescribing powers and duties, supervising, monitoring, coordinating and prescribing powers and duties of special working groups or work management groups, as well as considering and approving various proposals submitted by the management groups or the special working groups;
- 2) Approving proposals submitted by various working groups for the purposes of managing work and conducting business in accordance with the Company's objectives;
- 3) Conducting feasibility studies on new projects and having power to consider approving participation in various biddings, including operation of various projects as it deems appropriate, as well as entering into any juristic acts related thereto until completion;
- 4) Conducting feasibility studies on investment in new projects and having power to consider granting approval for the Company to invest or jointly invest with other persons, legal entities, groups of persons in various forms for conducting business in compliance with the objectives within the amount of not exceeding Baht 3,000 Million per project, including investment in other manners, such as, purchase of shares, exchange of shares with other legal entities as it deems appropriate, as well as entering into any juristic acts related thereto until completion;



- 5) Prescribing, considering, approving regulations, rules, work management and business operation policy guidelines or any actions binding the Company;
- 6) Providing advice, consultation and determining policy guidelines and authorities of the President and special working groups;
- 7) Having power to approve, appoint, employ, remove, impose disciplinary action, determine salary, wages, benefits, bonus, allowances, and other remunerations, including expenses and facilities of the Company's officers or staff in the position of department directors or higher, including Assistant Managing Director, Deputy Managing Director or equivalent or various special working groups for specific operation;
- 8) Proceeding with other matters in accordance with the policy as assigned by the Board of Directors;
- 9) Having power to appoint any person or group of persons to operate the Company's business under control of the Executive Board or authorize such person or group of persons to take any action as the Executive Board deems appropriate, and change, amend, repeal and revoke such authority;
- 10) Having power to appoint the Chairman of the Advisory Committee or advisors or Advisory Committee for Executive Board as appropriate, and determine remuneration, allowances, benefits, facilities and other expenses of the Chairman of the Advisory Committee or advisors or the Advisory Committee as appropriate;
- 11) The Executive Board or the Chairman of the Executive Board has power to convene the Executive Board's meetings and/or determine rules and regulations of the meetings as it deems appropriate;
- 12) In the case that the Chairman of the Executive Board cannot perform duties, the Chairman of the Executive Board shall appoint a substitute to perform duties on his or her behalf on each occasion, whereby the substitute shall have authorities equal to the Chairman of the Executive Board;
- 13) Considering and approving for authorization of executives to operate and manage business in accordance with the relevant rules, regulations and requirements;
- 14) Having power to approve and withdraw money from all accounts of the Company, and use credits provided by all banks or financial institutions for the Company, including apply for opening accounts and/or apply for credits in various forms with all banks or financial institutions, as well as placing securities of the Company as collateral against such debts, regardless of whether or not it requires registration.

## B. Audit Committee

The Board of Directors appoints the Audit Committee to help supervise and monitor the Company's business. Mr. Vitoon Tejtassanasoontorn, an independent director who has knowledge in accounting and finance, was appointed as Chairman of the Audit Committee. As at December 31, 2018, the Audit Committee consists of three independent directors, namely:

| Names                             | Positions                       |
|-----------------------------------|---------------------------------|
| 1. Mr. Vitoon Tejtassanasoontorn* | Chairman of the Audit Committee |
| 2. Mr. Thawansak Sukhawun         | Audit Committee Member          |
| 3. Mr. Pavich Tongroach           | Audit Committee Member          |

With a three-year term of office.

**Remark:** \* Serving as Audit Committee member with the knowledge and experience in review of the Company's financial statements.

The Audit Committee regularly meets at least every three months with the external auditor, internal auditor, management team and executives who are accountable for accounting and finance for review of financial statements on a quarterly basis and reports to the Board of Directors, or in case the management team would execute any connected transactions or transactions relating to acquisition or disposition of assets, which shall take into account appropriateness, justification of such transactions and the utmost benefits of the Company, the Chairman of the Audit Committee may convene additional meeting. In 2018, the Audit Committee convened a total of four meetings.

### Audit Committee's Authority

The Board of Directors authorizes the Audit Committee to have the authority as follows:

- 1) Reviewing to ensure that the Company's financial reports are accurate and adequate;
- 2) Reviewing to ensure that the Company's internal control and internal audit systems are suitable and effective, considering the independence of the internal audit unit as well as providing opinions on consideration for appointment, transfer, termination of employment of head of the internal audit unit or any other unit responsible for the internal audit;
- 3) Reviewing to ensure the Company's performance in compliance with the securities and exchange law, requirements of the Stock Exchange and the laws relating to the Company's business;
- 4) Considering, selecting, submitting for appointment and termination of person who is independent to serve as the Company's auditor, proposing remuneration of such person as well as meeting with the auditor without the management team at least once a year;
- 5) Considering connected transactions or transactions which may have conflict of interest in compliance with the laws and requirements of the Stock Exchange in order to ensure that such transactions are justified and of the utmost benefit to the Company;
- 6) Preparing reports of the Audit Committee to be disclosed in the Company's Annual Report, whereby such reports must be signed by the Chairman of the Audit Committee and be comprised of at least the following information:
  - (a) opinions on correctness, completeness, and reliability of the Company's financial reports;
  - (b) opinions on adequacy of the Company's internal control system;
  - (c) opinions on compliance with the securities and exchange law, requirements of the Stock Exchange or laws relating to the Company's business;
  - (d) opinions on appropriateness of the auditor;
  - (e) opinions on transactions which may have conflict of interest;
  - (f) number of meetings of the Audit Committee and attendance of each Audit Committee member;
  - (g) overall opinions or observations by the Audit Committee from the performance of duties in accordance with the charter;
  - (h) other matters that should be informed to shareholders and general investors within the scope of the authority and responsibilities assigned by the Board of Directors.
- 7) Performing any other activities as assigned by the Board of Directors of the Company and approved by the Audit Committee.

### C. Nomination and Remuneration Committee

The Board of Directors appoints the Nomination and Remuneration Committee to nominate and consider remuneration for directors and the President to ensure transparency and fairness. Mr. Vitoon Tejatussanasoontorn, an independent director, was appointed as Chairman of the Nomination and Remuneration Committee in line with the CG Code stipulating that chairmen of subcommittees should be an independent director. As at December 31, 2018, the Nomination and Remuneration Committee consists of four members, namely:

| Names                             | Positions   |
|-----------------------------------|---|
| 1. Mr. Vitoon Tejatussanasoontorn | Chairman of the Nomination and Remuneration Committee |
| 2. Mr. Thawansak Sukhawun         | Nomination and Remuneration Committee Member          |
| 3. Mr. Plew Trivisvavet           | Nomination and Remuneration Committee Member          |
| 4. Mr. Narong Sangsuriya          | Nomination and Remuneration Committee Member          |

With a three-year term of office.





In 2018, the Nomination and Remuneration Committee convened two meetings for nomination of qualified persons to be proposed and appointed as directors to replace those who were due to retire by rotation and for consideration of remuneration for directors for 2018 and bonus for 2017 for submission to the 2018 Annual Ordinary General Meeting of Shareholders for consideration and approval, and consideration of remuneration for the President for submission to the Board of Directors for consideration and approval.

#### **Nomination and Remuneration Committee's Authority**

The Board of Directors authorizes the Nomination and Remuneration Committee to have the authority as follows:

- 1) Considering the nomination criteria and procedures, as well as selecting and proposing qualified persons to hold the position of the Company's directors to the Board of Directors so as to nominate them to the shareholders' meeting, or proposing the nomination to the Board of Directors for appointment;
- 2) Considering, selecting and proposing qualified persons to hold the position of the President to the Board of Directors for appointment;
- 3) Considering and determining criteria on consideration for remuneration for directors and the President;
- 4) Considering, determining and proposing remuneration for directors to the shareholders' meeting for approval;
- 5) Considering and reviewing rates of salary and other remuneration for the President and proposing the same to the Board of Directors for approval;
- 6) Proceeding with other matters as assigned by the Board of Directors.

#### **D. Corporate Governance and Risk Management Committee**

The Board of Directors appoints the Corporate Governance and Risk Management Committee to supervise and monitor performance of the directors and the management to ensure compliance with the CG Code and to oversee and support the risk management to achieve success in the organizational level. As at December 31, 2018, the Corporate Governance and Risk Management Committee consists of five members, namely:

| <b>Names</b>                      | <b>Positions</b>   |
|-----------------------------------|--|
| 1. Mr. Vitoon Tejatussanasoontorn | Chairman of the Corporate Governance and Risk Management Committee |
| 2. Mr. Thawansak Sukhawun         | Corporate Governance and Risk Management Committee Member          |
| 3. Mr. Plew Trivisvavet           | Corporate Governance and Risk Management Committee Member          |
| 4. Mr. Narong Sangsuriya          | Corporate Governance and Risk Management Committee Member          |
| 5. Miss Supamas Trivisvavet       | Corporate Governance and Risk Management Committee Member          |

With a three-year term of office.

The Corporate Governance and Risk Management Committee met to follow up and evaluate the results of compliance with the CG Code and the risk management plan of the Company. In 2018, the Corporate Governance and Risk Management Committee convened four meetings.

## Corporate Governance and Risk Management Committee's Authority

The Board of Directors authorizes the Corporate Governance and Risk Management Committee to have the authority as follows:

### Corporate Governance

- 1) Determining and proposing policies and directions of operations in respect of the good corporate governance of the Company, including the code of business ethics, to the Board of Directors for consideration and approval for further compliance at all levels;
- 2) Supervising and monitoring the business operation of the Company and performance of the Board of Directors, the management and personnel of the Company to ensure compliance with Clause 1);
- 3) Evaluating and reviewing policies, directions, code of ethics, and best practices or practical guidelines in respect of the good corporate governance of the Company to ensure compliance with the international practices and recommendations of various institutions, as well as proposing the same to the Board of Directors for further consideration and approval;
- 4) Following up on movement, tendencies, as well as comparing performance in respect of the good corporate governance of the Company with the practices of other leading companies;
- 5) Overseeing and supporting performance in compliance with the good corporate governance policies to ensure continual effectiveness and appropriateness to the Company's business;
- 6) Giving advice to the Company, the Board of Directors, the management and working groups on the matters relating to the good corporate governance;
- 7) Reporting on the corporate governance of the Company to the Board of Directors on a regular basis, and immediately reporting to the Board of Directors for consideration in case there is any matter materially affecting the Company, as well as providing opinions on the practices and suggestions for improvement and resolution as appropriate;
- 8) Disclosing information relating to the good corporate governance of the Company to related parties and in the Annual Report, provided that it shall always be proposed to the Board of Directors for prior approval;
- 9) Establishing any working group as it deems appropriate.

### Risk Management

- 1) Determining policies and scope of risk management operations of the Company, as well as giving advice to the Board of Directors and the management on risk management;
- 2) Overseeing and supporting the risk management to ensure successful implementation by emphasizing the significance of and taking into account risk factors in support of the decision making as appropriate;
- 3) Considering the Company's material risks in line with the Company's business, e.g., in terms of investment, finance, security, law, rules and regulations, by suggesting measures to prevent and minimize risks to stay at an acceptable level, as well as following up, evaluating and improving the working plans for minimizing risks on a continual basis as appropriate to the condition of the business operation;
- 4) Reporting risk assessment results and operations for minimizing risks to the Board of Directors on a regular basis, and promptly reporting to the Board of Directors for consideration in case there is any matter materially affecting the Company;
- 5) Establishing any working group as it deems appropriate.

## E. Corporate Social and Environmental Responsibility Committee

The Board of Directors appoints the Corporate Social and Environmental Responsibility Committee to supervise the Company's operations in respect of the corporate social and environmental responsibility by focusing on the impact on its shareholders and stakeholders. As at December 31, 2018, the Corporate Social and Environmental Responsibility Committee consists of three members, namely:

| Names                        | Positions   |
|------------------------------|---|
| 1. Mr. Pavich Tongroach      | Chairman of the Corporate Social and Environmental Responsibility Committee |
| 2. Mr. Prasert Marittanaporn | Corporate Social and Environmental Responsibility Committee Member          |
| 3. Mr. Anukool Tuntimas      | Corporate Social and Environmental Responsibility Committee Member          |

With a three-year term of office.

The Corporate Social and Environmental Responsibility Committee met to follow up progress of the social and environmental activities of the Company. In 2018, the Corporate Social and Environmental Responsibility Committee convened two meetings.

### Corporate Social and Environmental Responsibility Committee's Authority

The Board of Directors authorizes the Corporate Social and Environmental Responsibility Committee to have the authority as follows:

- 1) Considering establishing the corporate social and environmental guidelines and policies for submission to the Board of Directors;
- 2) Considering and approving the Company's strategies to meet the CSR target and policies;
- 3) Considering the action plans and the annual budget for arrangement of the CSR activities for submission to the Executive Board and the Board of Directors;
- 4) Considering and following up the progress of the arrangement of the CSR activities as well as assessing the result and the quality of the CSR projects;
- 5) Proceeding with other matters as assigned by the Board of Directors.

### President's Authority

The Board of Directors authorizes the President to have the authority as follows:

- (1) Having authority to supervise and monitor all businesses of the Company to ensure compliance with the resolutions and policies of the Board of Directors and the Executive Board;
- (2) Having power to approve, appoint, remove, engage, impose disciplinary actions, determine salary, bonus, pension, welfare and other remuneration, including expenses and facilities of the Company's officers or staff in the position of division general manager or lower (excluding Senior Executive Vice President, Executive Vice President, and division manager or equivalent) and, if applicable, substitute any work groups, the Board of Directors/committees, management team, groups of persons or executives as appropriate;
- (3) Having power to approve any juristic acts binding upon the Company in the amount not exceeding Baht 60,000,000 (Sixty Million Baht Only) per transaction;
- (4) Having power to sign and affix the Company's seal on cheques and withdraw money from all accounts of the Company and utilize credit facilities available to the Company by all banks or financial institutions in the amount not exceeding Baht 60,000,000 (Sixty Million Baht Only) or equivalent per transaction;

- (5) Authorizing from time to time the Company's staff in the executive positions (Senior Executive Vice President, Executive Vice President, division manager or equivalent) to perform duties on behalf of the President in certain matters (such as purchase order, procurement, payment order) as appropriate;
- (6) Having power to issue, amend, add, update regulations, orders and work rules of the Company, such as, assignment, appointment, removal, and discipline of staff and employees, determination of salary and other monies, including various aid and welfare;
- (7) Having duty to prepare and approve balance sheets, financial statements and income statements of the Company for submission to the Board of Directors;
- (8) Conducting feasibility study for new projects and having power to consider approving projects as assigned by the Executive Board;
- (9) Appointing a person acting in place of the President from time to time in the event that the President is unable to perform his/her duties, whereby such acting person shall have the same authority as the President;
- (10) Having power to appoint any persons or groups of persons to engage in the Company's business under the supervision of the President, or, if applicable, authorizing such persons to make arrangements as the President deems appropriate and having power to change, amend, revoke and repeal such authorization;
- (11) Proceeding with other matters as assigned by the Board of Directors or the Executive Board from time to time.



### 9.3 Nomination and Appointment of Directors and Top Management

#### (1) Nomination of Independent Directors

The Nomination and Remuneration Committee nominates directors who are qualified in terms of useful skills and experience for the Company and meet the qualifications of independent director. The Company has adjusted the definition of the Company's independent directors to become stricter than the definition set out by the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand, as follows:

#### Qualifications of Independent Directors

1. Holding shares of not exceeding 0.5 percent of the total number of voting shares of the Company, its parent company, subsidiary, associated company, major shareholder or controller of the Company, including shares held by any related persons;
2. Not being or having been a director having involvement in the management, an employee, a staff member, an advisor receiving a regular salary or a controller of the Company, its parent company, subsidiary, associated company, subsidiary at the same level, major shareholder or controller of the Company, unless such independent director has no longer been in such capacity for not less than two years prior to the date of appointment, provided that such prohibited characteristics shall not apply to the independent director who has been a public servant or an advisor to a government authority which is the Company's major shareholder or controller;
3. Not being a person having relationship by blood or by legal registration in the capacity as parent, spouse, sibling and offspring, including spouse of the offspring, executive, major shareholder, controller or person to be nominated as executive or controller of the Company or its subsidiary;

4. Not having or having had any business relationship with the Company, its parent company, subsidiary, associated company, major shareholder or controller of the Company in a manner which may prevent the exercise of his or her independent judgment; and not being or having been a substantial shareholder or controller of any person having a business relationship with the Company, its parent company, subsidiary, associated company, major shareholder or controller of the Company, unless such independent director has no longer been in such capacity for not less than two years prior to the date of appointment;

The aforesaid business relationship shall include any transaction which is an ordinary course of business for the business operation of lease taking or lease out of immovable property, any transaction relating to assets or services or grant or receipt of financial assistance through receiving or extending any loan, guarantee, providing assets as collateral, including any other similar action, which causes the Company or contractual party to be subject to indebtedness payable to the other party in the amount of three percent or more of the Company's net tangible assets or in the amount of Baht Twenty Million or more, whichever is lower;

Such indebtedness shall be calculated in accordance with the calculation method for value of the connected transaction under the Notification of the Capital Market Supervisory Board governing Rules on Connected Transactions, mutatis mutandis. However, the consideration of such indebtedness shall include the indebtedness incurred during the course of one year prior to the date on which the business relationship with the same person occurs;


5. Not being or having been an auditor of the Company, its parent company, subsidiary, associated company, major shareholder, or controller of the Company; and not being a substantial shareholder, controller, or partner of an audit firm which employs the auditor of the Company, its parent company, subsidiary, associated company, major shareholder, or controller of the Company, unless such independent director has no longer been in such capacity for not less than two years prior to the date of appointment;
6. Not being or having been a professional service provider, including legal advisor or financial advisor which receives an annual service fee exceeding Baht Two Million from the Company, its parent company, subsidiary, associated company, major shareholder, or controller of the Company; and not being a substantial shareholder, controller, or partner of such professional service provider, unless such independent director has no longer been in such capacity for not less than two years prior to the date of appointment;
7. Not being a director appointed as representative of the Company's director, major shareholder or shareholder who is a related person of the major shareholder;
8. Not engaging in any business of the same nature as and in material competition with the business of the Company or its subsidiary; or not being a substantial partner in a partnership or a director having involvement in the management, an employee, a staff member, an advisor receiving a regular salary or holding more than one percent of the total number of voting shares of another company engaging in any business of the same nature as and in material competition with the business of the Company or its subsidiary;
9. Not having any other characteristics preventing provision of independent opinions on the Company's operations.

## **(2) Nomination of Directors and Top Management**

### **2.1 Nomination of Directors**

#### **2.1.1 Criteria**

The Nomination and Remuneration Committee considers nominating persons to be appointed as directors to replace those directors who vacate office, both resignation prior to the end of term and retirement by rotation, in accordance with the following criteria:

- 
1. Having qualifications in compliance with the Public Limited Companies Act, the Securities and Exchange Act, rules of the SEC and rules of the Stock Exchange.
  2. Having knowledge, ability and experience in a variety of fields which will be beneficial and create value to the Company.
  3. Having characteristics supporting and promoting the corporate governance to create value to the Company, such as, independence, willingness to share opinions, initiative, and performance of duties with responsibility, due care, integrity and full-time contribution, etc.
  4. In case of a director who retires by rotation, there should be consideration from his past records as to whether he performed duties as director with due care, integrity and full-time contribution.
  5. In the nomination of directors, there should be consideration of the required qualifications taking into account necessary skills for the Board and qualifications in line with the Company's business strategies.

The Nomination and Remuneration Committee shall nominate such qualified persons to the Board of Directors for consideration for submission to the shareholders' meeting for appointment as directors.

#### 2.1.2 Nomination Procedures

The Board of Directors sets out the procedures for nomination of directors. The Nomination and Remuneration Committee proceeds in accordance with the following procedures:

1. Nominating qualified candidates to fill the vacancy.
2. Considering qualifications of candidates nominated by minor shareholders according to the Company's policy to allow shareholders to propose their nominations in advance (if any).
3. Proposing the nominations to the Board of Directors for consideration and appointment (in case of interim vacancy).
4. Considering proposing the nominations to the Board of Directors for consideration and approval for submission to the annual ordinary general meeting of shareholders for appointment.

Pursuant to the Articles of Association, at every annual general meeting, at least one-third of the number of directors shall vacate their office. If the number of directors is not a multiple of three, then the number nearest to one-third must retire from office. Therefore, directors have a term of three years, and a retiring director may be re-elected. In this regard, the Company does not fix the number of terms of holding office as director or the number of other listed companies in which the directors will hold office as directors, but considers the suitability of appointment of directors who are due to retire by rotation to resume office.

Pursuant to the Articles of Association, the criteria and procedures for appointment of directors by shareholders are as follows:

1. Each shareholder has one vote for one share held.
2. The group election of all directors to be appointed on such occasion shall be by a single vote or if deemed appropriate by the shareholders' meeting, the election may be on an individual basis, the vote for any candidate by each individual shareholder, whether as individual or group election, shall reflect the number of all shares held by such shareholder at the time of the vote in accordance with Clause 1 and no shareholder shall apportion a partial vote to any specific candidate.
3. In case of an election on an individual basis, the candidates with the highest number of votes in descending order shall be elected as directors up to the number of directors to be elected or vacancies at that time. If more than one candidate has equal votes for the final vacancies, the appointment shall be made by drawing of lots.

## 2.2 Nomination of President and Executives

1. With respect to an executive in the position of the President, he/she will be nominated by the Nomination and Remuneration Committee, which would consider selecting a qualified person, namely, who has knowledge, skills and experiences useful for the administration to meet the objectives or goals specified by the Board of Directors, as well as insight into the Company's business, whereby the Nomination and Remuneration Committee would nominate such person to the Board of Directors for consideration and appointment.
2. As for an executive at the managerial level or higher, the management would nominate such person to the Executive Board for consideration and appointment.

Besides, in nomination of directors, President, and high-ranking executives of the Company, the Company has emphasized and nominated persons who has experience, qualifications and skills essential for the business management under the policies stipulating that the structure of the Board of Directors shall be composed of those who have knowledge in various fields, whether it would be professional skills, expertise in specific fields, and gender, etc., Currently, the Company has analyzed vital skills as required by the Company for nomination of directors and also analyzed the existing skills of the members of the current Board of Directors, with the results that the current Board of Directors, including the President, already have experience, qualifications and skills as required by the Company in all respects. Details are shown as follows:

Skill Matrix

| Positions/Qualifications  | Engineer | Technology | Industrial Condition | Foreign Marketing | Policy | Strategy | Management | Corporate Governance | Risk Management | Accounting / Finance | Law | Audit |
|---|----------|------------|----------------------|-------------------|--------|----------|------------|----------------------|-----------------|----------------------|-----|-------|
| 1. Independent Directors and Chairman of the Board of Directors |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 2. Directors and Chairman of the Executive Board                |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 3. Independent Directors  |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 4. Independent Directors  |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 5. Independent Directors  |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 6. Directors  |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 7. Directors  |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 8. Directors  |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 9. Directors  |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |
| 10. President   |          |            |                      |                   |        |          |            |                      |                 |                      |     |       |



## 9.4 Supervision of Operations of Subsidiaries and Associated Companies

(1) The Board of Directors has its governance mechanism to monitor and supervise the management and responsibility for operations of subsidiaries and associated companies in order to protect interests in the Company's investments. The Company's representatives shall be assigned to hold office as directors, executives, or controllers in such companies according to the shareholding proportion. The Company specifies that the assignment of such representatives shall be subject to approval by resolution of the Board of Directors' meeting, and such persons who are appointed as directors in subsidiaries or associated companies shall have the duty to ensure the best interests of such subsidiaries or associated companies; provided that such appointed persons shall



obtain approval from the Board of Directors of the Company prior to passing a resolution or exercising the voting right on significant matters at the same level as that shall be approved by the Board of Directors in the Company's operations. The Company sets out the scope of power, duties and responsibilities of directors and executives as the Company's representatives in such companies to control or participate in the determination of significant policies on their business operations, with the governance mechanism for accurate and full disclosure of financial position and operational results; execution of connected transactions between such companies and related persons; acquisition or disposition of assets; or execution of any other significant transactions of such companies. Rules and regulations relating to disclosure and execution of transactions above shall be similar to those of the Company.

Moreover, in case of a subsidiary, the Company has set up rules that persons who are appointed by such subsidiary shall monitor to ensure that such subsidiary has its articles of association regarding connected transactions, acquisition or disposition of assets, or any other material transactions of such subsidiary to ensure completeness and correctness, and using the criteria relating to the disclosure of information and the execution of the aforesaid transactions in the same manner as those of the Company, as well as monitoring to keep and make information and accounting records of such subsidiary available for the Company's review and use in support of the preparation of the consolidated financial statements in due course.

The Company determines that its subsidiaries and associated companies are required to notify the Company of their execution of connected transactions and transaction on acquisition or disposition of assets, as well as other transactions which are material to the subsidiaries' operations. Prior to execution of such transactions, each subsidiary shall obtain approval for execution of such transaction from the Company, in order to allow the Company to control and specify directions of the subsidiary's business operations. In the event that the subsidiaries and associated companies have the investment expansion plan or have conducted the feasibility study on any new project, the subsidiaries and associated companies shall propose such investment plan, project development schedule, and report on progress of the process and details of the investment plan, to enable the Company to assess the feasibility of the project, fund usage plan, and to closely follow up the progress, including material problems and obstacles which may arise from the development of the project.

(2) The Company has no any shareholders' agreement between the Company and other shareholders in respect of management of subsidiaries and associated companies which are material to the operations of the Group or administration or sharing of returns other than such normal returns from its shareholding.



## 9.5 Control of Inside Information Usage

The Company determines its control of inside information usage in accordance with the CG Code, as follows:

### 1) Policy and monitoring of directors and executives

The Company must keep directors and executives informed of the SEC's applicable notifications requiring directors and executives to report on every change in their securities holdings to the SEC pursuant to Section 59 of the Securities and Exchange Act B. E. 2535 (1992) within three business days from the date of such change in securities holdings. The Company Secretary must be informed thereof to keep records of such change and summarize the number of securities holdings by directors and executives on an individual basis for submission to the Board of Directors for acknowledgement in the next meeting. In addition, punishments in case of any violation or non-compliance with such rules are also informed. In this regard, the directors and executives have acknowledged and strictly comply with the policies and relevant laws regarding inside information usage.

2) Measures relating to protection of inside information

1. Not using inside information for personal interests or others.
2. Identifying and restricting persons who are authorized to access inside information, whereby the authorized persons shall not disclose such information to other persons until such information has been disclosed to the public in accordance with various regulations.
3. Disclosing information which has a material effect on the operations via the Stock Exchange's channel prior to disclosure to any specific groups of investors.
4. Insiders should refrain from trading securities or should wait until the public has been informed of such information with a reasonable period of time to study such information.

3) Protection and prevention of inside information usage

1. The Company has policies and procedures for controlling the use of inside information by directors, executives and staff to prevent any occurrence of the use of inside information for personal interests or the interests of others. The work rules and regulations of the Company prohibit staff from disclosing the Company's confidential information to any third parties or abusing their positions for personal gains or others. Any violation is deemed a disciplinary misconduct.
2. The Company has a control system for use of the Company's information by adopting such information security systems as the restriction of access to the Company's information by setting authorization level of staff's access to the Company's information as appropriate for their responsibilities.
3. The Company prohibits executives who have access to inside information from taking any actions contrary to Section 241 of the Securities and Exchange Act, including relevant rules and regulations.

In this regard, the Company's management has been conducted based on the CG Code by realizing the significance of and responsibility for shareholders and stakeholders of the Company in order to reinforce the confidence of shareholders, investors and all related parties, together with the general practical guidelines regarding prevention of misuse of inside information by related persons, namely, the Board of Directors, management, and staff in work units related to such information (including their spouse and minor child), whereby the Company sets out the practical guidelines for all directors and executives so as to prevent misuse of inside information as follows:

1. Avoiding or refraining from trading the Company's securities during 21 days prior to disclosure of the quarterly and annual financial statements and during 24 hours after such disclosure;
2. Refraining from trading of the Company's securities, if they have access to any undisclosed information which may have an impact on the Company's securities price, until a lapse of 24 hours from the disclosure of all such information to the public;
3. Not allowing any executives who know or should have known that the Company will disseminate the material information which may have an impact on change in market price of the Company's securities, to purchase or sell the securities from the date on which he/she knows or should have known such information until the end of the day following the date of such disclosure and dissemination.



## 9.6 Remuneration for Auditor

### (1) Audit Fee

The Company and subsidiaries paid the audit fee to:

- the Company's auditor, in the previous accounting period, amounting to Baht.....
- the audit firm of which the auditor is a member, persons or businesses related to the auditor and the audit

firm of which the auditor is a member, in the 2018 accounting period, amounting to Baht 11,090,000, and which is the same auditor as the one of the previous year.

### (2) Non-audit fee

- None -



## 9.7 Application of the Corporate Governance Code for Listed Companies 2017

The Board of Directors has understood the roles, duties, benefits and principles of the Corporate Governance Code for Listed Companies 2017. After the promulgation of such Corporate Governance Code, the Corporate Governance and Risk Management Committee, as a subcommittee with the duty to supervise and monitor to ensure the Company's compliance with the Corporate Governance Code to promote and support the Company's business operations conducive to the sustainable value creation, reported to all directors of the Board of Directors on the promulgation of the Corporate Governance Code for Listed Companies 2017 as guidelines stipulated and announced by the Office of the Securities and Exchange Commission (SEC). The Board of Directors then assigned the management to inform all staff of the Company for acknowledgment and strict compliance therewith and also required that such compliance shall be evaluated at least once a year. In this regard, the Board of Directors then authorized the Corporate Governance and Risk Management Committee to consider and evaluate the application of the same for proposal to the Board of Directors for further consideration.

The Board of Directors' Meeting No. 7/2018 held on December 24, 2018 resolved to grant approval for the Board of Directors to consider reviewing the Company's corporate governance policy by applying the principles under the Corporate Governance Code for Listed Companies 2017 as appropriate for the Company's business context, and jointly evaluated the compliance with such Corporate Governance Code, thereby coming to an understanding on benefits and principles of the Corporate Governance Code which greatly created the sustainable value for the Company's business, as well as drawing up a plan to develop and add guidelines in aspects which the Company should have to improve and remedy to make it suitable for the Company's circumstances. Meanwhile, any principles which could not yet be or have not yet been applied were already provided with reasons as part of the resolutions of the Board of Directors.



An overview of the Company's compliance with the Corporate Governance Code for Listed Companies 2017 was in detail as follows:

| Principles of the Corporate Governance Code  | Scope   |
|--|---|
| 1. Establishing Clear Leadership Role and Responsibilities of the Board, contributing to the sustainable value creation for the business | The Board of Directors acknowledged and studied the CG Code and then authorized the Corporate Governance and Risk Management Committee to evaluate the compliance with such principle to rest assured that it obtained a satisfactory outcome of compliance.  |
| 2. Defining Objectives and Goals that Promote Sustainable Value Creation   | The Board of Directors followed up and ensured implementation of the Company's strategies for the interests of all shareholders and stakeholders on a sustainable basis.  |
| 3. Enhancing the Board Effectiveness   | The Board of Directors was composed of 10 qualified persons, namely, six executive directors and four independent directors, to meet the requirements of stakeholders, as well as carrying out operations conducive to exercising their discretion independently.   |
| 4. Ensuring Effective CEO and People Management  | The Company had the process for nomination and development of the President, high level executives, to ensure that they had knowledge, skills, experience and qualifications necessary for driving the organization into achievement of the goals, had the appropriate remuneration structure, and also followed up, took care of and developed its personnel to ensure that the Company had adequate personnel who had knowledge, skills, experience and motivates as appropriate. |
| 5. Nurturing Innovation and Responsible Business   | The Company supported creating innovations which had value for the business alongside benefiting stakeholders of all groups, and also operated the socially and environmentally responsible business.   |
| 6. Strengthening Effective Risk Management and Internal Control System   | The Company had the work-related risk management system in compliance with applicable laws, the Articles of Association, resolutions of the shareholders' meeting, together with policies or guidelines as specified, and also had the process for approval of significant transactions, such as, execution of transactions which materially affected the Company, or execution of transactions which might give rise to a conflict of interest.                                    |
| 7. Ensuring Disclosure and Maintaining Financial Integrity   | The Company prepared the financial reports and disclosed material information with accuracy, adequacy, punctuality, and equality via appropriate channels; protected confidential information and information which had an influence on the securities prices, to ensure that the disclosed information reflected the practices or contributed to the sustainable value creation for the business.  |
| 8. Ensuring Engagement and Communication with Shareholder  | The Board of Directors gave priority to the fundamental rights of shareholders in such a way as allowing the shareholders to send their questions and nominate qualified persons as directors in advance, etc., and to receive information and news of the Company rapidly, completely and adequately via easily accessible channels.   |



## 9.8 Compliance with the Corporate Governance Code in other Matters

The Company has mostly complied with the Corporate Governance Code for Listed Companies 2017, except for the following:

1. Determination of the number of terms of holding of office as director and independent director.

The Board of Directors does not clearly determine any number of terms of holding of office as director. In regard to the determination of a term of consecutive holding of office as independent director of not exceeding nine years, the Board of Directors considers and deems that the appointment of independent directors to resume office as directors will be useful for the Company and shareholders since the directors consecutively holding such office will have knowledge and experiences in the Company's business operations, thereby maximizing value to shareholders.

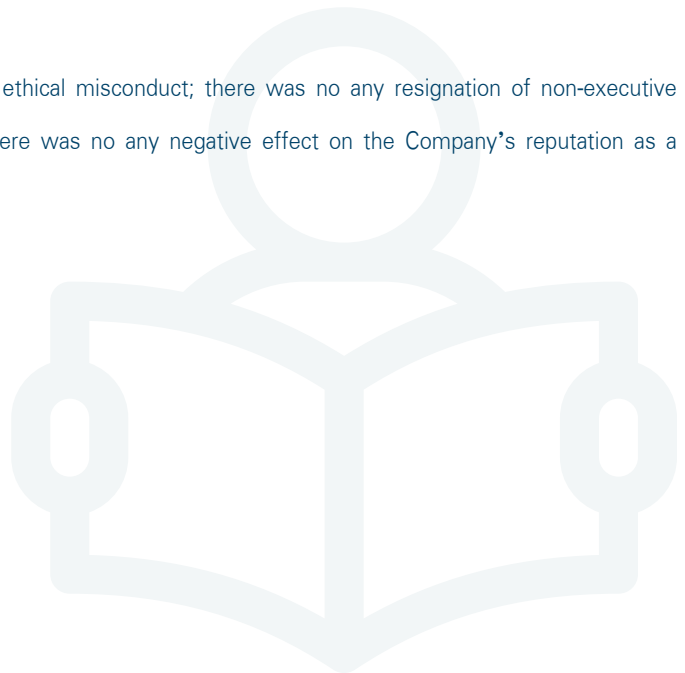
2. The Board of Directors has not mostly comprised independent directors (namely, more than 50 percent) since the Company has independent directors representing more than one-third of the total number of directors who are experienced, expert and independent in performance of the duties.

3. The Nomination and Remuneration Committee has not yet completely or mostly comprised independent directors, and currently comprises independent directors equal to 50 percent.

4. There is no any female independent director on the Board of Directors since there have currently been independent directors in a variety of fields.

5. The Board of Directors acknowledges the signing for anti-corruption campaign by participating in the private concerted efforts against corruption. However, it is deemed appropriate for the Executive Board and/or management to consult on such matter with Thai Contractors Association and companies in the construction industry in order to consider their participation in the campaign.

Last year, there was no any fraudulent offence or ethical misconduct; there was no any resignation of non-executive director due to the Company's corporate governance; and there was no any negative effect on the Company's reputation as a result of failure of the Board of Directors' fiduciary duties.





## 10. Corporate Social Responsibility

The Company operates its business under the corporate social and environmental responsibility and takes into account the utmost benefits of all stakeholders. In 2017, the Company has prepared the Sustainable Development Report to disclose its economic, social and environmental information. This Sustainable Development Report has been prepared in Thai and English versions in CD and available for download at [www.ch-karnchang.co.th/#/mission/growth-together](http://www.ch-karnchang.co.th/#/mission/growth-together).





## 11. Internal Control and Risk Management



### 11.1 Summary of Opinions of the Board of Directors regarding the Company's Internal Control System

The Board of Directors continuously realizes the significance of the internal control system to prevent and minimize potential risks, by assigning the Audit Committee comprising independent directors to review the evaluation of the internal control system. The Internal Audit Department shall report directly to the Audit Committee and review the operation systems in various departments of the Company in accordance with the annual audit plan as approved by the Audit Committee, for the purpose of ensuring that the work performance is efficient and effective, that the Company's resources are used cost-efficiently, that the financial reporting is properly controlled to ensure correctness, reliability and timeliness, that it complies with the policy in accordance with the provisions of the laws and regulations of the relevant authorities and agencies, and that the efficiency of the internal control system is regularly reviewed, to ensure the best interest of the shareholders on the basis of fair returns to all stakeholders. In addition, the Audit Committee also has the duty to consider selecting and nominating the auditor, including the audit fee; and consider disclosing the Company's correct and complete information in case of connected transactions and transactions which may have conflict of interest.

In 2018, the Audit Committee convened four meetings, in which the Company's management and the auditor of EY Office Limited attended each and every meeting, and a meeting with the auditor without the management's presence for consideration of the financial statements for 2018 so as to independently make inquiries on audit plan and other matters found during the audit.

The Company recognizes the significance of the use of the risk management in its administration, by assigning the Corporate Governance and Risk Management Committee to monitor and review the Company's overall risk management to stay at an acceptable level. The Company's management considers the risk factors currently being encountered or expected to be encountered by the Company, analyzes the impact and the possibility of such risks, establishes measures

to prevent and manage such risks to stay at an acceptable level in compliance with the Company's policy, and then submits the same to the Corporate Governance and Risk Management Committee for consideration of appropriateness and sufficiency. The risk management system shall also be reviewed and evaluated for its effectiveness every year and every interval in which the risk level has changed, subject to regular monitoring on a quarterly basis by the Internal Audit Department, and the results of such monitoring shall be reported to management and the Corporate Governance and Risk Management Committee for acknowledgement and further reported to the Board of Directors for acknowledgement as a whole.

In the Board of Directors' Meeting No. 1/2019 on February 28, 2019, the Board of Directors has evaluated the adequacy and suitability of the Company's internal control system as per the evaluation report by the Audit Committee in various aspects as per the internal control adequacy evaluation form, comprising five elements, namely, corporate internal control; risk assessment; operational control; information technology and communications system; and monitoring system, together with the report on risk management results by the Corporate Governance and Risk Management Committee. They are of the opinion that the Company's internal control system is adequate and suitable to the business operation without any material fault, which would prevent the Company's and the subsidiaries' assets from misuse or unauthorized use by the executives. The Company's financial reports are correct and reliable in accordance with the generally accepted accounting principles and the financial reporting standards. The Company operates its business in full compliance with the securities and exchange law and other relevant laws.

The Board of Directors, the Audit Committee and the auditor are of the common opinion that the Company's business operation is in accordance with the good corporate governance principles with transparency, and the internal control system is suitable, effective, and can prevent the Company's assets from misuse or unauthorized use by the executives or staff.





## 11.2 The Head of Internal Audit Unit

The Head of Internal Audit Unit is Mr. Wiboon Ungapipathanachai, Executive Vice President: Internal Audit Office. The Audit Committee is of the view that Mr. Wiboon Ungapipathanachai has knowledge, abilities and work experience and is qualified to efficiently perform duties as the Head of Internal Audit Unit. The appointment, removal and transfer of a person holding office as Head of Internal Audit Unit shall be subject to the Audit Committee's approval.

The Head of Compliance Unit is Mrs. Thipwaree Athagrisna, Vice President: Legal Department/Compliance Manager, who shall be responsible for compliance matters in cooperation with the Office of President, and in coordination with the Company Secretary.





The Audit Committee of CH. Karnchang Public Company Limited, by the appointment of the Company's Board of Directors, comprises three qualified independent directors, namely, Mr. Vitoon Tejatussanasoontorn, Chairman of the Audit Committee, Mr. Thawansak Sukhawun and Mr. Pavich Tongroach, Audit Committee Members, and Executive Vice President: Internal Audit Department as secretary to the Audit Committee.

The Audit Committee has performed under the scope, duties and responsibilities as assigned by the Company's Board of Directors, in accordance with the regulations of the Stock Exchange of Thailand, as well as relevant suggestions on various matters, which were fully cooperated by the Company's Management, internal auditors and auditor. In 2018, the Audit Committee held four meetings with the executives, internal auditors and auditor as appropriate, including a meeting with the auditor without the Management for independent discussion on material information in preparation of financial statements and sharing of opinions, which may be summarized as follows:

**1. The Audit Committee has reviewed the quarterly financial statements and the financial statements for 2018,**

by making inquiries and taking into consideration the clarifications of the executives and the auditor in respect of accuracy and completeness of the financial statements and sufficiency of information disclosure. The Audit Committee is of the opinion in line with the auditor that the said financial statements are fairly accurate in all material aspects and comply with generally accepted accounting standards.

**2. The Audit Committee has reviewed the compliance with the provisions of laws and the Company's internal control system,**

and is of the opinion according to the assessment that the internal control system is sufficient, proper and effective without any material fault in order to support the operations to achieve the specified goal. The Company properly maintains its property and work operations in compliance with the law on securities and exchange and the relevant rules and regulations on business. The authorization and approval are systematically conducted in accordance with the good internal control system, and the corporate governance is transparent, as well as being amended to efficiently conform to the changed situation.

**3. The Audit Committee has reviewed the internal audit,**

by taking into consideration the mission, scope of work, duties, responsibilities and independence of the Internal Audit Department in order to conform to the guidelines on internal audit of the Stock Exchange of Thailand. The Audit Committee is of the opinion that the Company's internal audit system is sufficient and proper, including the consideration for approval of the appointment of Vice President: Internal Audit Department and secretary to the Audit Committee. The Audit Committee is of the opinion that the Company's internal audit system is sufficient, proper and efficient in accordance with the international standards.

**4. The Audit Committee has reviewed the risk management**

in order to connect with the internal control system to manage general risks. The Company has specified objectives and criteria for assessment of the overall risks and risk levels, risk assessment and rating, determination of management plan on existing risks, and preparation of report on risk assessment and management plan on existing risks. The Audit Committee is of the opinion that the Company's risk management system is efficient and effective, by determining objectives for indicating, assessing, managing and monitoring risks on a quarterly basis, risk appetite and risk tolerance, as well as regularly reviewing the risks to be in line with the current situation.

**5. The Audit Committee has reviewed the good corporate governance,**

by reviewing the Company's operations in compliance with the law on securities and exchange, rules and regulations of the Office of the Securities and Exchange Commission, requirements of the Stock Exchange of Thailand, and other laws relating to the Company's business operations, including obligations which may arise from agreements executed with third parties, and found that the Company has duly and properly complied with the relevant laws and requirements in a timely manner.

**6. The Audit Committee has reviewed and provided an opinion on the connected transactions or transactions which may have conflict of interest,**

including disclosure of such transactions in accordance with the regulations of the Stock Exchange of Thailand and the Office of the Securities and Exchange Commission. The auditor is of the opinion that the transactions with material aspects executed with the related companies have already been disclosed and shown in the financial statements and notes to the financial statements. The Audit Committee is of the opinion in line with the auditor, as well as providing an opinion that such transactions are reasonable and for the optimum benefit to the Company's business operations, and the information disclosure is accurate and complete.

**7. The Audit Committee has considered selecting, nominating the auditor and proposing the audit fee,**

by taking into account the performance of the auditor in the previous year, reliability, capability to provide service and consultation on accounting standards, auditing and certification of the financial statements in a timely manner, and has then provided an opinion to the Company's Board of Directors to seek approval of the Shareholders' Meeting for appointment of either Ms. Siraporn Ouannunkun or Mr. Chatchai Kasemsrithanawat or Ms. Chonlaros Suntiasvaraporn of EY Office Limited as the Company's auditor for 2019, with the audit fee in the amount not exceeding Baht 3,733,000 per year.

Given the performance of duties under the scope of responsibilities as assigned by the Board of Directors to independently provide opinions and suggestions in the equal interests of all stakeholders, the Audit Committee is of the view that the Company's financial reports are correct and reliable in line with the generally accepted accounting standards and financial reporting standards, with sufficient risk management, proper internal control system and effective internal audit. The Company's operation is in accordance with the good corporate governance principles and in full compliance with the laws and requirements relating to the Company's business operations in all respects.



(Mr. Vitoon Tejatussanasoontorn)  
Chairman of the Audit Committee



## 12. Connected Transactions

12.1 Connected Transactions between the Company, Subsidiaries, Associated and Related Companies (Only connected transactions with a value of Baht 500,000 or higher are shown) in 2018 and 2017 can be summarized, as follows:

| Name of Interested or Related Party/Company            | Relationship  | Nature of Transaction  | Transaction Value of 2018 (Baht)  | Transaction Value of 2017 (Baht)      | Necessity / Justification   |
|--|---|--|---|---------------------------------------|---|
| 1. Bangkok Expressway and Metro Public Company Limited | <ul style="list-style-type: none"> <li>- This is an associated company.</li> <li>- On December 30, 2015, Bangkok Metro Public Company Limited and Bangkok Expressway Public Company Limited were amalgamated into a new company named Bangkok Expressway and Metro Public Company Limited.</li> <li>- The Company holds shares representing 30.89 percent in Bangkok Expressway and Metro Public Company Limited.</li> <li>- An executive director of the Company, namely, Mr. Plew Trivisavet, serves as director in Bangkok Expressway and Metro Public Company Limited.</li> <li>- An executive of the Company, namely, Mr. Phongsarit Tantisuwanitchkul, serves as director in Bangkok Expressway and Metro Public Company Limited.</li> <li>- A director of Bangkok Expressway and Metro Public Company Limited, namely, Mrs. Payao Marittanaporn, is the spouse of Mr. Prasert Marittanaporn, a director of the Company.</li> </ul> | <p>1.1 The Company</p> <ul style="list-style-type: none"> <li>- Bangkok Metro Public Company Limited engaged the Company to manage the Project for supply and installation of the M&amp;E Systems for the MRT Purple Line, Bang Yai - Rat Burana (Bang Yai - Bang Sue Section), Contract 4, Concession for Supply of M&amp;E Systems and O&amp;M Services (Khlong Bang Phai Station - Tao Poon Station), with a value of Baht 15,689 Million.</li> </ul> | <p>Revenues from construction services</p> <p>22,478,393</p> <p>Construction revenue received in advance</p> <p>899,352,447</p> | <p>513,465,685</p> <p>836,830,841</p> | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> <li>- The contractor will arrange for a loan throughout the construction period of the Project, provided that all construction costs and finance costs shall be borne by the employer, and the repayment shall be made upon delivery of all works.</li> </ul> |
|  |   |  |   |                                       |   |
|  | <p>1.2 The Company</p> <ul style="list-style-type: none"> <li>- Bangkok Metro Public Company Limited engaged the Company to provide maintenance services on Civil Infrastructure and E&amp;M Systems for the M.R.T. Chaloem Ratchamongkhon Line Project, with a value of Baht 4,048 Million.</li> </ul>   | <p>Revenues from construction services</p> <p>216,172,307</p> <p>Trade accounts receivable</p> <p>118,622,554</p> <p>Unbilled receivables</p> <p>107,948,621</p>   | <p>126,039,631</p> <p>15,158,333</p> <p>99,721,847</p>  |                                       | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> </ul>   |
|  |   |  |   |                                       |   |

| Name of Interested or Related Party/Company   | Relationship | Nature of Transaction  | Transaction Value of 2018 (Baht)   | Transaction Value of 2017 (Baht)         | Necessity / Justification   |
|---|--------------|--|--|--|---|
| 1. Bangkok Expressway and Metro Public Company Limited (continued)<br>Operation of concession business for mass transit in Bangkok by the metro and operation of concession business for expressway construction and management |              | 1.3 The Company<br>Bangkok Metro Public Company Limited engaged the Company to provide maintenance services on Civil Infrastructure and E&M Systems for the MRT Purple Line Project, Bang Yai - Rat Burana, Bang Yai - Bang Sue Section, with a value of Baht 1,590 Million.                           | Revenues from construction services<br>103,133,922<br>Trade accounts receivable<br>81,962,000<br>Construction revenue received in advance<br>220,867,606 | 144,143,793<br>17,833,333<br>155,668,195 | - This transaction is an ordinary course of business.<br>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.<br>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects. |
|   |              | 1.4 The Company<br>Bangkok Metro Public Company Limited engaged the Company to supply and install equipment for improvement of the communication system for the MRT Blue Line Project (one station) with the MRT Purple Line Project, Bang Yai - Bang Sue Section, with a value of Baht 1,020 Million. | Revenues from construction services<br>14,063,149<br>Construction revenue received in advance<br>-   | 215,883,823<br>14,063,149                | - This transaction is an ordinary course of business.<br>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.<br>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects. |
|   |              | 1.5 The Company<br>The Company received dividend from its shareholding in Bangkok Expressway and Metro Public Company Limited.   | Dividend income<br>603,475,837   | 549,854,619                              | - The Company has earned a return on investment at the same rate as other shareholders of Bangkok Expressway and Metro Public Company Limited.  |
|   |              |  |  |  |   |
|   |              |  |  |  |   |

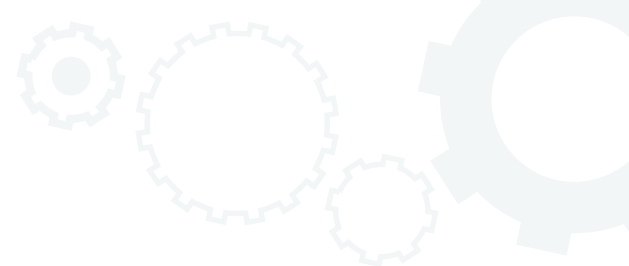
| Name of Interested or Related Party/Company                        | Relationship | Nature of Transaction  | Transaction Value of 2018 (Baht)   | Transaction Value of 2017 (Baht)                     | Necessity / Justification   |
|--|--------------|--|--|--|---|
| 1. Bangkok Expressway and Metro Public Company Limited (continued) |              | 1.6 The Company<br>- Bangkok Expressway and Metro Public Company Limited engaged the Company to carry out repair of structure of the Si Rat Expressway, Period 4, Phase 1, Sector A, with a value of Baht 25.9 Million.  | Revenues from construction services<br>24,240,582<br>Trade accounts receivable<br>-<br>Retention receivable<br>1,293,492<br>Construction revenue received in advance<br>-<br>1,627,467                     | 1,629,264<br>896,347<br>113,560<br>1,627,467         | - This transaction is an ordinary course of business.<br>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.<br>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.<br>- This transaction provides a credit term of 30-45 days. |
|  |              | 1.7 The Company<br>- Bangkok Expressway and Metro Public Company Limited engaged the Company to carry out design and construction of the Si Rat - Outer Ring Road Expressway, with a value of Baht 22,500 Million, and construction of a connection between the Si Rat - Outer Ring Road Expressway and the Si Rat Expressway in the north (heading to Chaeng Watthana), with a value of Baht 275 Million. | Revenues from construction services<br>186,461,378<br>Trade accounts receivable<br>2,118,600<br>Retention receivable<br>13,612,500<br>Construction revenue received in advance<br>41,461,540<br>11,222,919 | 181,314,611<br>34,427,250<br>1,100,000<br>11,222,919 | - This transaction is an ordinary course of business.<br>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.<br>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.<br>- This transaction provides a credit term of 30-45 days. |
|  |              | 1.8 CH. Karnchang-Tokyu Construction Co., Ltd.<br>- The company received dividend from its shareholding in Bangkok Expressway and Metro Public Company Limited.  | Dividend income<br>17,892,233  | 16,399,194   | - CH. Karnchang-Tokyu Construction Co., Ltd. has earned a return on investment at the same rate as other shareholders of Bangkok Expressway and Metro Public Company Limited.   |



| Name of Interested or Related Party/Company   | Relationship | Nature of Transaction  | Transaction Value of 2018 (Baht)                          | Transaction Value of 2017 (Baht) | Necessity / Justification   |
|---|--------------|--|---|----------------------------------|---|
| 1. Bangkok Expressway and Metro Public Company Limited (continued)<br>Operation of concession business for mass transit in Bangkok by the metro and operation of concession business for expressway construction and management |              | 1.9 The Company<br>Bangkok Expressway and Metro Public Company Limited engaged the Company to carry out repair of structure of the Si Rat Expressway, Period 3, Phase 5, Sector D (Asoke-Srinagarindra), with a value of Baht 33.2 Million.  | Revenues from construction services<br>7,199,234          | 26,576,830                       | - This transaction is an ordinary course of business.   |
|   |              |  | Trade accounts receivable<br>1,826,153                    | -                                | - This project is of a nature in which the Company has experience and could be completed within the scheduled period.               |
|   |              |  | Retention receivable<br>214,369                           | 1,660,421                        | - The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects. |
|   |              |  | Unbilled receivables<br>903,984                           | -                                | - This transaction provides a credit term of 30-45 days.  |
|   |              | - Bangkok Expressway and Metro Public Company Limited engaged the Company to carry out repair of structure of the Si Rat Expressway, Period 4, Phase 2, Sector C (Prachachuen - Chaeng Watthana) and certain part of Sector B (Urupong - Phayathai), with a value of Baht 31.9 Million.  |   |                                  |   |
|   |              | 1.10 The Company<br>Bangkok Expressway and Metro Public Company Limited engaged the Company for the project management, including supply, installation, testing M&E Systems and commissioning of the MRT Blue Line Extension Project, including installation and supply of Facilities necessary for Through Operation with the M.R.T. Chaloeem Ratchamongkhon Line Project, with the value of Baht 21,099 Million. | Revenues from construction services<br>7,125,497,615      | 5,368,175,262                    | - This transaction is an ordinary course of business.   |
|   |              |  | Trade accounts receivable<br>521,210,442                  | 1,170,138,204                    | - This project is of a nature in which the Company has experience and could be completed within the scheduled period.               |
|   |              |  | Construction revenue received in advance<br>2,265,659,457 | 1,805,599,019                    | - The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects. |
|   |              |  |   |                                  | - This transaction provides a credit term of 30-45 days.  |
|   |              |  |   |                                  |   |
|   |              | 1.11 The Company<br>CH: Karnchang Public Company Limited acquired 180,000,000 and 37,209,700 ordinary shares in Bangkok Expressway and Metro Public Company Limited in 2018 and 2017, respectively.  | Investments in associated companies<br>1,404,885,990      | 281,497,719                      | - This transaction is an ordinary course of business.   |
|   |              |  |   |                                  | - This is an investment in a company with stability and good operational results.   |



| Name of Interested or Related Party/Company   | Relationship | Nature of Transaction   | Transaction Value of 2018 (Baht)                     | Transaction Value of 2017 (Baht) | Necessity / Justification  |
|---|--------------|---|--|----------------------------------|--|
| <b>1. Bangkok Expressway and Metro Public Company Limited (continued)</b>   |              |   |  |                                  |  |
| Operation of concession business for mass transit in Bangkok by the metro and operation of concession business for expressway construction and management |              | 1.12 The Company<br>The Company sold 40 million ordinary shares in Bangkok Expressway and Metro Public Company Limited. | Gain on sales of investments in associated companies |                                  | - The Company has earned a return on sales of investments at market price. |
|   |              |   | 208,049,279  | -                                |  |



| Name of Interested or Related Party/Company  | Relationship   | Nature of Transaction  | Transaction Value of 2018 (Baht)   | Transaction Value of 2017 (Baht)                     | Necessity / Justification   |
|--|--|--|--|--|---|
| 2. Nam Ngum 2 Power Company Limited<br>Production and distribution of electricity in Thailand and overseas | <ul style="list-style-type: none"> <li>- This is a related company.</li> <li>- SouthEast Asia Energy Limited holds shares representing 75 percent.</li> <li>- Three executive directors of the Company, namely, Mr. Plew Trivisvavet, Mr. Narong Sangsuriya, and Mr. Prasert Marittanaporn, serve as directors in Nam Ngum 2 Power Company Limited.</li> <li>- A director of Nam Ngum 2 Power Company Limited, namely, Mr. Thanawat Trivisvavet, a son of Mr. Plew Trivisvavet, serve as director of the Company.</li> </ul> | 2.1 CH. Karnchang (Lao) Co., Ltd.<br>- Nam Ngum 2 Power Company Limited engaged CH. Karnchang (Lao) Co., Ltd., in which 100 percent of shares are held by the Company, for improvement of voltage and construction of the 230/500 kV Nabong Substation, with a value of Baht 799,850,000 and USD 53,481,457. | Revenues from construction services<br>429,858,535<br>Trade accounts receivable<br>-<br>48,917,071<br>Construction revenue received in advance<br>6,803,373<br>201,507,018 | Revenues from construction services<br>1,350,070,637 | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul> |
|  |  | 2.2 CH. Karnchang (Lao) Co., Ltd.<br>- Nam Ngum 2 Power Company Limited engaged CH. Karnchang (Lao) Co., Ltd., in which 100 percent of shares are held by the Company, for repair of the Nam Ngum 2 Dam, with a value of Baht 54 Million.  | Revenues from construction services<br>-<br>5,140,625  | 5,140,625  | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> </ul>   |

| Name of Interested or Related Party/Company   | Relationship   | Nature of Transaction   | Transaction Value of 2018 (Baht)   | Transaction Value of 2017 (Baht) | Necessity / Justification   |
|---|--|---|--|----------------------------------|---|
| 3. TTW Public Company Limited<br>Operation of concession business for water production and distribution in Samut Sakhon Province and certain areas of Nakhon Pathom Province for the Provincial Waterworks Authority. | <ul style="list-style-type: none"> <li>- This is a related company.</li> <li>- The Company holds shares representing 19.40 percent.</li> <li>- An executive director of the Company, namely, Mr. Plew Trivisvavet, serves as director in TTW Public Company Limited.</li> <li>- An executive of the Company, namely, Mr. Phongsarit Tantisuwanitchkul, serves as director in TTW Public Company Limited.</li> <li>- A director of TTW Public Company Limited, namely, Mrs. Payao Marittanaporn, is the spouse of Mr. Prasert Marittanaporn, a director of the Company.</li> <li>- A director of TTW Public Company Limited, namely, Miss Walainut Trivisvavet, the spouse of Mr. Anukool Tantimas, serves as director of the Company.</li> </ul> | 3.1 The Company<br>- The Company received dividend from its shareholding in TTW Public Company Limited.   | Dividend income<br>464,446,440   | 464,446,440                      | - The Company has earned a return on investment at the same rate as other shareholders of TTW Public Company Limited.   |
|   |  | 3.2 The Company<br>- TTW Public Company Limited engaged the Company for construction of the Second Water Treatment Plant, to enhance the water production capacity in Samut Sakhon - Nakhon Pathom, with a value of Baht 3,206.6 Million. | Revenues from construction services<br>55,002,146<br>Construction revenue received in advance<br>17,188,896  | 671,542,840<br>72,191,042        | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> </ul> |
|   |  | 3.3 The Company<br>- TTW Public Company Limited engaged the Company to carry out construction of the raw water intake relocation project by way of construction of a new building, with a value of Baht 138.1 Million.                    | Revenues from construction services<br>17,026,780<br>Construction revenue received in advance<br>3,001,108   | 37,785,879<br>20,027,888         | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> </ul> |
|   |  | 3.4 The Company<br>- TTW Public Company Limited engaged the Company to carry out construction of the tap water distribution and intake system improvement project, with a value of Baht 38 Million.                                       | Revenues from construction services<br>20,813,541<br>Trade accounts receivable<br>6,088,642<br>Retention receivable<br>2,428,985<br>Construction revenue received in advance<br>10,589,208 | -<br>-<br>-<br>-<br>-            | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> </ul> |

| Name of Interested or Related Party/Company   | Relationship  | Nature of Transaction  | Transaction Value of 2018 (Baht)                                   | Transaction Value of 2017 (Baht) | Necessity / Justification   |
|---|---|--|--|----------------------------------|---|
| 4. Expert Transport Co., Ltd.<br>Operation of business of large vehicles for transportation | <ul style="list-style-type: none"> <li>- This is a related company.</li> <li>- Mahasiri Siam Co., Ltd., as a major shareholder in the Company, holds shares representing 90.00 percent.</li> <li>- Three executive directors of the Company, namely, Mr. Plew Trivisavet, Mr. Narong Sangsuriya, and Mr. Prasert Marittanaporn, serve as directors in Expert Transport Co., Ltd.</li> <li>- An executive of the Company, namely, Mr. Sittidej Trivisavet, serves as director in Expert Transport Co., Ltd.</li> </ul> | 4.1 The Company<br>- The Company leased out area and rendered public utilities services for Expert Transport Co., Ltd. | Service fee income<br>5,817,167<br>Other receivables<br>11,466,134 | 5,855,038<br>5,762,994           | <ul style="list-style-type: none"> <li>- Expert Transport Co., Ltd. took on lease for a total area of 1,073.82 square meters at the rental and service fee rate of Baht 451,004.40 per month, for a lease term of three years from January 1, 2018 to December 31, 2020.</li> <li>- The rate is close to market rate, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul> |
|   |   | 4.2 The Company<br>- The Company charged public utilities fees from Expert Transport Co., Ltd.                         | Rental expenses<br>567,200<br>Other payables<br>32,750             | 771,400                          | <ul style="list-style-type: none"> <li>- The Company used public utilities services from Expert Transport Co., Ltd.</li> <li>- This transaction is an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul>   |

| Name of Interested or Related Party/Company   | Relationship  | Nature of Transaction  | Transaction Value of 2018 (Baht)                                 | Transaction Value of 2017 (Baht) | Necessity / Justification  |
|---|---|--|--|----------------------------------|--|
| 5. Bang Pa-in Land Development Co., Ltd.<br>Operation of Bang Pa-in Industrial Estate | <ul style="list-style-type: none"> <li>- This is a related company.</li> <li>- CK. Office Tower Co., Ltd., as a shareholder in the Company, holds shares representing 25 percent.</li> <li>- Mahasiri Siam Co., Ltd., as a major shareholder in the Company, holds shares representing 25 percent.</li> <li>- Two executive directors of the Company, namely, Mr. Plew Trivisvavet and Miss Supamas Trivisvavet, serve as directors in Bang Pa-in Land Development Co., Ltd.</li> </ul> | 5.1 The Company<br>- The Company rendered transportation services and other services, such as, lease of water tank trailers, shovels, backhoe, for Bang Pa-in Land Development Co., Ltd. | Service fee income<br>-  | 49,999                           | <ul style="list-style-type: none"> <li>- The rate is close to market rate, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul>   |
|   |   | 5.2 The Company<br>- The Company leased out area and rendered public utilities services for Bang Pa-in Land Development Co., Ltd.  | Service fee income<br>979,478<br>Other receivables<br>3,302      | 1,083,260<br>13,891              | <ul style="list-style-type: none"> <li>- Bang Pa-in Land Development Co., Ltd. took on lease from the Company for a total area of 173.79 square meters at the rental and service fee rate of Baht 72,991.80 per month, for a lease term of three years from January 1, 2018 to December 31, 2020.</li> <li>- The rate is close to market rate, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul> |
|   |   | 5.3 The Company<br>- The Company took on lease of area and used public utilities services and purchased supply from Bang Pa-in Land Development Co., Ltd.                                | Rental and utilities fees<br>583,042<br>Other payables<br>79,580 | 616,409<br>103,371               | <ul style="list-style-type: none"> <li>- The Company took on lease of area and paid electricity cost to Bang Pa-in Land Development Co., Ltd. for the construction of the Cogeneration Power Project Phase 2.</li> <li>- The rate is close to market rate, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul>   |

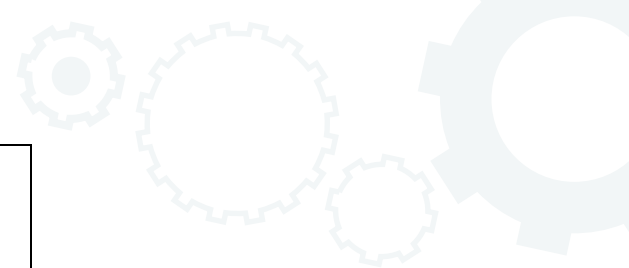
| Name of Interested or Related Party/Company          | Relationship | Nature of Transaction  | Transaction Value of 2018 (Baht)   | Transaction Value of 2017 (Baht)   | Necessity / Justification   |
|--|--------------|--|------------------------------------|------------------------------------|---|
| 5. Bang Pa-in Land Development Co., Ltd. (continued) |              | 5.4 The Company<br>- Bang Pa-in Land Development Co., Ltd. engaged the Company to carry out design and construction of dikes and drainage system for the Bang Pa-in Industrial Estate Restoration Project, with a value of Baht 665.4 Million. | Retention receivable<br>19,417,363 | Retention receivable<br>28,417,363 | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul> |

| Name of Interested or Related Party/Company                                      | Relationship  | Nature of Transaction  | Transaction Value of 2018 (Baht) | Transaction Value of 2017 (Baht) | Necessity / Justification  |
|--|---|--|----------------------------------|----------------------------------|--|
| 6. Bangkok Metro Networks Limited  |   |  |                                  |                                  |  |
| Operation of service business for common areas and public utilities in the metro | - This is a related company.  | 6.1 The Company  | Service fee income               |                                  |  |
|  | - Bangkok Expressway and Metro Public Company Limited (CH. Kamchang Public Company Limited's associated company) holds shares representing 69.67 percent. | - The Company leased out area and rendered public utilities services for Bangkok Metro Networks Limited. | 7,876,505                        | 7,885,899                        | - Bangkok Metro Networks Limited took on lease from the Company, as follows:   |
|  | - An executive of the Company, namely, Mr. Phongsarit Tantisuvanitchkul, serves as director in Bangkok Metro Networks Limited.                            |  | Other receivables                |                                  | 1) 1,225.40 square meters at the rental and service fee rate of Baht 441,914.80 per month, for a lease term of three years and three months from February 10, 2013 to May 9, 2016; |
|  |   |  | 79,852                           | 69,449                           | 2) 725 square meters at the rental and service fee rate of Baht 580,000 per month, for a lease term of three years from July 10, 2016 to July 9, 2019.                             |
|  |   |  |                                  |                                  | - The rate is close to market rate, representing an ordinary course of business.   |
|  |   |  |                                  |                                  | - This transaction provides a credit term of 30-45 days.   |



| Name of Interested or Related Party/Company   | Relationship  | Nature of Transaction  | Transaction Value of 2018 (Baht)  | Transaction Value of 2017 (Baht) | Necessity / Justification  |
|---|---|--|---|----------------------------------|--|
| <b>7. Xayaburi Power Company Limited</b><br>Operation of study, survey, and design business for the Hydroelectric Power Dam Construction Project in the Mekong River, Xayaburi, with the Government of the Lao People's Democratic Republic | <ul style="list-style-type: none"> <li>- This is a related company. The Company holds shares representing 50.00 percent</li> <li>- As at December 31, 2012, the Company has reduced its shareholding to 30.00 percent in the first quarter of 2013.</li> <li>- In 2015, the Company sold all investments in Xayaburi Power Company Limited to CK Power Public Company Limited.</li> <li>- An executive director of the Company, namely, Mr. Plew Trivisavet, serves as director in Xayaburi Power Company Limited.</li> <li>- A director of Xayaburi Power Company Limited, namely, Mr. Thanawat Trivisavet, is the son of Mr. Plew Trivisavet, a director of the Company.</li> </ul> | <b>7.1</b> CH. Kamchang (Lao) Co., Ltd.<br>- Xayaburi Power Company Limited engaged CH. Kamchang (Lao) Co., Ltd., in which 100 percent of shares are held by the Company, to carry out the construction of the Xayaburi Hydroelectric Power Project, with a value of approximately Baht 71,225 Million and USD 711 Million, inclusive of costs for additional works. | Revenues from construction services<br>5,851,727,767<br>Trade accounts receivable<br>665,227,420<br>Unbilled receivables<br>-<br>Construction revenue received in advance<br>497,550,561<br>2,663,893,240 | 12,896,965,888<br>914,174,000    | <ul style="list-style-type: none"> <li>- CH. Kamchang (Lao) Co., Ltd. is capable to carry out the works properly and is well-prepared to promptly start the works. In addition, the project value is reasonable, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul>   |
|   |   | <b>7.2</b> The Company<br>- The Company leased out area and rendered public utilities services for Xayaburi Power Company Limited.   | Service fee income<br>3,264,154<br>Other receivables<br>55,180  | 3,486,860<br>102,513             | <ul style="list-style-type: none"> <li>- Xayaburi Power Company Limited took on lease from the Company for a total area of 239.72 square meters at the rental and service fee rate of Baht 215,743.50 per month, for a lease term of three years from April 19, 2018 to April 18, 2021.</li> <li>- The rate is close to market rate, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul> |

| Name of Interested or Related Party/Company   | Relationship | Nature of Transaction   | Transaction Value of 2018 (Baht)   | Transaction Value of 2017 (Baht)         | Necessity / Justification   |
|---|--------------|---|--|--|---|
| 7. Xayaburi Power Company Limited (continued) |              | <p>7.3 The Company</p> <p>- The Company extended the loan to Xayaburi Power Company Limited in the amount of Baht 13,547 Million.</p> | <p>Interest income</p> <p>762,274,641</p> <p>Loan receivable and accrued interest receivable</p> <p>14,072,892,983</p> | <p>691,577,866</p> <p>12,183,818,342</p> | <p>- The Company provided the sponsor support for Xayaburi Power Company Limited under the Sponsors Support Agreement which the Company and shareholders in Xayaburi Power Company Limited executed with the banks (financial institution creditors loan-lending to the Xayaburi Hydroelectric Power Project) in the amount of Baht 13,547 Million, at the interest rate during construction not exceeding MLR plus 0.25 percent per annum, and at the interest rate not exceeding MLR upon commercial operation of the Xayaburi Hydroelectric Power Project by 2019, which the repayment of all loans is scheduled to be made by 2031.</p> |



| Name of Interested or Related Party/Company   | Relationship  | Nature of Transaction  | Transaction Value of 2018 (Baht)    | Transaction Value of 2017 (Baht) | Necessity / Justification  |
|---|---|--|-------------------------------------|----------------------------------|--|
| 8. Bangpa-in Cogeneration Limited<br>Operation of power plant business, including businesses relating to electricity and other powers | <ul style="list-style-type: none"> <li>- This is a subsidiary of CK Power Public Company Limited.</li> <li>- CK Power Public Company Limited is an associated company of CH Karnchang Public Company Limited, which the Company holds shares representing 27.22 percent.</li> </ul> | 8.1 The Company  | Service fee income                  | 604,248                          | <ul style="list-style-type: none"> <li>- The Company is capable to manage the Project properly and reasonably, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> <li>- The value of the Project Management Agreement was Baht 259,000, from January 1, 2015 to February 28, 2016.</li> <li>- The value of Other Service Agreement was Baht 50,000, from January 1, 2016 to December 31, 2017.</li> </ul>   |
|   |   | - Bangpa-in Cogeneration Limited engaged the Company to manage the Project and provide other services, at the monthly rates of Baht 259,000 and Baht 50,000, respectively.         | Other receivables                   | 123,862                          |  |
|   |   |  | -                                   |                                  |  |
|   |   | 8.2 The Company  | Service fee income                  | 814,854                          | <ul style="list-style-type: none"> <li>- Bangpa-in Cogeneration Limited took on lease from the Company for a total area of 140.91 square meters at the rental and service fee rate of Baht 59,182.20 per month, for a lease term of one year from January 1, 2018 to December 31, 2018 and with a renewal for another two months until February 28, 2019.</li> <li>- The rate is close to market rate, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul> |
|   |   | - The Company leased out area and rendered public utilities services for Bangpa-in Cogeneration Limited.   | 801,010                             |                                  |  |
|   |   |  | Service fee income                  | 604,248                          |  |
|   |   | - The Company leased out vehicles for Bangpa-in Cogeneration Limited.  | 604,248                             | 604,248                          | <ul style="list-style-type: none"> <li>- The rate is close to market rate, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul>   |
|   |   |  | Other receivables                   |                                  |  |
|   |   |  | 60,653                              |                                  |  |
|   |   | 8.3 The Company  | Revenues from construction services |                                  | <ul style="list-style-type: none"> <li>- This transaction is an ordinary course of business.</li> <li>- This project is of a nature in which the Company has experience and could be completed within the scheduled period.</li> <li>- The Company has earned a return at market price at a rate not lower than the rate of return generally received in other projects.</li> </ul>  |
|   |   | - Bangpa-in Cogeneration Limited engaged the Company to carry out construction of the Bangpa-in Cogeneration Power Project Phase 2 (BIC-2), with a value of Baht 4,310.10 Million. | 55,401,211                          | 760,094,030                      |  |
|   |   |  | Trade accounts receivable           |                                  |  |
|   |   |  | -                                   | -                                |  |

| Name of Interested or Related Party/Company  | Relationship  | Nature of Transaction   | Transaction Value of 2018 (Baht)                                       | Transaction Value of 2017 (Baht) | Necessity / Justification  |
|--|---|---|--|----------------------------------|--|
| 9. Krung Thon Engineers Company Limited<br>Operation of construction business  | - This is a partner of CH. Kamchang-Krung Thon Engineers Joint Venture, in which CH. Kamchang Public Company Limited's proportion represents 60 percent.  | 9.1 CH. Kamchang-Krung Thon Engineers Joint Venture<br>- The Joint Venture engaged Krung Thon Engineers Company Limited to carry out installation of the conduit system for the Phra Ong Chao Chaivanuchit Canal Conduit System Project, with a value of Baht 1,464.50 Million. | Trade accounts and retention payable<br>408,000                        | 408,000                          | - This transaction is an ordinary course of business.<br>- This project is of a nature in which Krung Thon Engineers Company Limited has experience and could be completed within the scheduled period.  |
| 10. Silasaicrete Co., Ltd.<br>Silasaicrete Limited Partnership registered for conversion into Silasaicrete Co., Ltd. on June 15, 2018. | - This is a related company.<br>- CK. Office Tower Co., Ltd. and Bang Pa-in Land Development Co., Ltd., as shareholders in the Company, are partners of Silasaicrete Limited Partnership.<br>- On November 8, 2017, CK. Office Tower Co., Ltd. transferred its investments in the amount of Baht 5 Million to Exclusive Management Co., Ltd.<br>- On November 8, 2017, Bang Pa-in Land Development Co., Ltd. transferred its investments in the amount of Baht 4 Million to Para Management Co., Ltd. | 10.1 The Company<br>- The Company leased out area and rendered public utilities services for Silasaicrete Co., Ltd.<br><br>10.2 The Company<br>- The Company purchased rock for use as construction materials from Silasaicrete Co., Ltd.                                       | Service fee income<br>110,000  | 120,000                          | - Silasaicrete Limited Partnership took on lease from the Company for a total area of 20 square meters at the rental and service fee rate of Baht 10,000 per month, for a lease term of one year from April 1, 2018 to March 31, 2018.<br>- The rate is close to market rate, representing an ordinary course of business.<br>- This transaction provides a credit term of 30-45 days. |
|  |   |   | Cost of construction materials<br>9,833<br>Trade accounts payable<br>- | 254,530<br>16,742                | - The rate is close to market rate, representing an ordinary course of business.<br>- This transaction provides a credit term of 30-45 days.   |

| Name of Interested or Related Party/Company  | Relationship   | Nature of Transaction  | Transaction Value of 2018 (Baht)  | Transaction Value of 2017 (Baht)          | Necessity / Justification   |
|--|--|--|---|---|---|
| 11. CK Power Public Company Limited<br>Operation of business as a holding company, holding shares in companies operating core businesses in the production and distribution of electricity | <ul style="list-style-type: none"> <li>- This is an associated company.</li> <li>- The Company holds shares representing 27.22 percent.</li> <li>- Four executive directors of the Company, namely, Mr. Plew Trivisvavet, Mr. Narong Sangsuriya, Mr. Prasert Marittanaporn, and Miss Supamas Trivisvavet, serve as directors in CK Power Public Company Limited.</li> <li>- A director of CK Power Public Company Limited, namely, Mr. Thanawat Trivisvavet, is the son of Mr. Plew Trivisvavet, and the brother of Miss Supamas Trivisvavet, directors of the Company.</li> </ul> | 11.1 The Company <ul style="list-style-type: none"> <li>- The Company leased out area and rendered public utilities services for CK Power Public Company Limited.</li> </ul>   | <div>Service fee income</div> <div>11,683,964</div> <div>Other receivables</div> <div>370,184</div> | <div>9,352,989</div> <div>1,231,129</div> | <ul style="list-style-type: none"> <li>- CK Power Public Company Limited took on lease from the Company as follows: <ol style="list-style-type: none"> <li>1) 642.50 square meters at the rental and service fee rate of Baht 269,850.00 per month, for a lease term of three years from September 1, 2017 to August 31, 2020;</li> <li>2) 479.43 square meters at the rental and service fee rate of Baht 201,360.00 per month, for a lease term of three years from February 1, 2017 to March 31, 2020.</li> <li>3) 468.92 square meters at the rental and service fee rate of Baht 211,014.00 per month, for a lease term of three years from June 1, 2017 to May 31, 2020.</li> </ol> </li> <li>- The rate is close to market rate, representing an ordinary course of business.</li> <li>- This transaction provides a credit term of 30-45 days.</li> </ul> |
|  |  | 11.2 The Company <ul style="list-style-type: none"> <li>- The Company received dividend from its shareholding in CK Power Public Company Limited.</li> </ul>   | <div>Dividend income</div> <div>45,456,198</div>  | 127,216,529                               | <ul style="list-style-type: none"> <li>- The Company has earned a return on investment at the same rate as other shareholders of CK Power Public Company Limited.</li> </ul>  |
|  |  | 11.3 The Company <ul style="list-style-type: none"> <li>- CH. Karnchang Public Company Limited sold its 14 million shares and 100 million shares in CK Power Public Company Limited in 2018 and 2017, respectively.</li> </ul> | <div>Gain on sales of investments</div> <div>51,939,507</div>                                       | 188,154,808                               | <ul style="list-style-type: none"> <li>- The Company has earned a gain on sales of investments in CK Power Public Company Limited at market price.</li> </ul>   |

| Name of Interested or Related Party/Company  | Relationship   | Nature of Transaction   | Transaction Value of 2018 (Baht)                         | Transaction Value of 2017 (Baht) | Necessity / Justification   |
|--|--|---|--|----------------------------------|---|
| 12. Nakhon Ratchasima Solar Limited<br>Operation of power production and distribution business | <ul style="list-style-type: none"> <li>CH. Karnchang Public Company Limited formerly held shares representing 30 percent, and then sold all of its shares to CK Power Public Company Limited.</li> </ul> | 12.1 The Company<br><ul style="list-style-type: none"> <li>The Company extended loans to Nakhon Ratchasima Solar Limited.</li> </ul>                    | Loans to related company and accrued interest receivable |                                  | <ul style="list-style-type: none"> <li>This transaction is an ordinary course of business.</li> <li>The loans have been extended as per its proportion to enhance the liquidity of Nakhon Ratchasima Solar Limited.</li> <li>Nakhon Ratchasima Solar Limited will be required to repay the principal and interest upon its repayment of the long-term loans from financial institutions in full.</li> </ul>   |
|  |  |   | 3,874,608  | 6,705,936                        |   |
| 13. Blifinger Berger AG<br>Operation of construction business                                  | <ul style="list-style-type: none"> <li>This is a partner of Joint Venture BBCT, in which CH. Karnchang Public Company Limited's proportion represents 99.97 percent.</li> </ul>                          | 13.1 Joint Venture BBCT<br><ul style="list-style-type: none"> <li>Advance payment to related parties</li> <li>Amounts due to related parties</li> </ul> | Advance payment  |                                  | <ul style="list-style-type: none"> <li>The loans have been extended as per the proportion to the Joint Venture.</li> <li>This is a share of profit unpaid to the partner.</li> <li>The loans have been extended to the partner of Joint Venture BBCT.</li> <li>Joint Venture BBCT will make the loan repayment upon its receipt of compensation for increased costs from the Expressway Authority of Thailand (referred to Joint Venture BBCT) or upon the Company's demand, whichever occurs first.</li> </ul> |
|  |  |   | 3,986,901  | 3,986,901                        |   |
|  |  |   | Amounts due to related parties                           | 20,017,243                       |   |

| Name of Interested or Related Party/Company                              | Relationship  | Nature of Transaction   | Transaction Value of 2018 (Baht) | Transaction Value of 2017 (Baht) | Necessity / Justification  |
|--|---|---|----------------------------------|----------------------------------|--|
| 13. Bifinger Berger AG (continued)<br>Operation of construction business | <ul style="list-style-type: none"> <li>- This is a partner of Joint Venture BBOD, in which CH. Kamchong Public Company Limited's proportion represents 35 percent.</li> </ul> | 13.2 Joint Venture BBOD<br><ul style="list-style-type: none"> <li>- Advance payment to related parties</li> </ul> | Advance payment<br>4,120,900     | 4,120,900                        | <ul style="list-style-type: none"> <li>- The loans have been extended as per the proportion to the Joint Venture.</li> <li>- This is a share of profit unpaid to the partner.</li> <li>- As for the loans extended to the partner of Joint Venture BBOD, there is a condition for exemption from interest payment (since the auditor opined to suspend the interest calculation, as the interest was long overdue), with the repayment schedule upon Joint Venture BBOD's receipt of compensation for increased costs from the Expressway Authority of Thailand or upon the Company's demand, whichever occurs first.</li> </ul> |



## 12.2 Opinions of the Board and the Audit Committee

The Company's contracts with its related companies to carry out construction on a subcontract basis are undertaken at reasonable prices, whereby the costs of relevant projects under such contracts were reviewed and deemed appropriate by the Company's engineers and based on an ordinary course of business.

- Project management fees are derived from transactions where the Company arranged for personnel to various related companies and joint ventures for the purpose of project management, whereby the Company entered into contracts for management fees with those related companies and joint ventures, and such management fees covered salaries, bonuses, benefits and other management expenses.
- Service fees are derived from transactions where the Company leased out to joint ventures and subsidiaries equipment and machinery at the rental rates close to market rates, representing an ordinary course of business.
- Costs of goods are derived from transactions where the Company traded goods with related companies at the price close to market price, representing an ordinary course of business.
- Accounts receivable in the form of intercompany loans bear interest at an appropriate rate and subject to an ordinary course of business. Connected transactions are submitted to the meeting of the Board of Directors or the Executive Board, for consideration in respect of their suitability.

## 12.3 Measures or Procedures for Approval of Connected Transactions

The Company has complied with the relevant rules, regulations and requirements of the Securities and Exchange Commission. As for any transactions that might give rise to a conflict of interests and require approval of the Board of Directors and of the Audit Committee, the Company has already complied with such rules, regulations or requirements, whereby the grant of approval for the said connected transactions shall take into account the optimum benefits to the Company, fairness and justifications of the transactions as well as based on market prices in the ordinary course of business. In addition, the interested parties or those who might have a conflict of interests in such connected transactions shall not be allowed to participate in the consideration and approval of the connected transactions so as to ensure the fairness and the optimum benefits to the Company. As for any connected transactions falling under the criteria as specified in the regulations, notifications, orders, requirements or rules of the Stock Exchange of Thailand, the Company has complied with the applicable requirements of the Stock Exchange of Thailand.

## 12.4 Policy or Trend of Future Connected Transactions

The policy on consideration and approval of connected transactions with related businesses shall comply with the procedures that require consideration by the Board of Directors and the Audit Committee while those who have interests or might have a conflict of interests in connected transactions shall not be allowed to participate in the approval of such connected transactions. The criteria used by the Board of Directors and the Audit Committee as guidelines in the consideration is that related businesses are required to propose competitive products or services in terms of price and quality. On the contrary, should the Company be to render services to any related businesses, the Company is required to propose price and quality in line with standards or market price without giving any favorable benefit to the related businesses, which may result in transfer of benefits to those who might have a conflict of interests with the Company.

Future connected transactions in the form of loans tend to be loans among the Company, subsidiaries and joint ventures for the purpose of financial support in business operations so as to support and facilitate their operations, which will be deemed as an ordinary course of business. Consideration and approval for such transactions will be mainly based on the optimum benefits of the Company. However, for the loans between the Company, subsidiaries or joint ventures, and related companies in which the Company's major shareholders, directors or executives hold shares, the Company group has no policy to extend any intercompany loans in the future.

Part



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## 13. Financial Highlights

### Summary of Financial Information under the Consolidated Financial Statements

| Item                             | Amount (Million Baht) |           |           |
|----------------------------------|-----------------------|-----------|-----------|
|                                  | 2016                  | 2017      | 2018      |
| Total assets                     | 94,928.37             | 79,274.46 | 83,500.54 |
| Total liabilities                | 73,074.05             | 55,401.38 | 57,671.82 |
| Shareholders' equity             | 21,854.32             | 23,873.08 | 25,828.72 |
| Total revenues                   | 47,019.54             | 37,730.68 | 31,175.57 |
| Gross profit (loss)              | 3,238.23              | 2,834.73  | 2,320.28  |
| Net profit (loss)                | 2,002.40              | 1,810.01  | 2,494.31  |
| Earnings (loss) per share (Baht) | 1.18                  | 1.07      | 1.47      |

### Summary of Financial Information under the Separate Financial Statements

| Item                             | Amount (Million Baht) |           |           |
|----------------------------------|-----------------------|-----------|-----------|
|                                  | 2016                  | 2017      | 2018      |
| Total assets                     | 89,873.25             | 76,055.49 | 77,443.27 |
| Total liabilities                | 67,096.39             | 52,303.80 | 53,489.80 |
| Shareholders' equity             | 22,776.86             | 23,751.69 | 23,953.47 |
| Total revenues                   | 22,335.52             | 21,498.90 | 24,454.30 |
| Gross profit (loss)              | 1,436.24              | 1,418.97  | 1,699.32  |
| Net profit (loss)                | 983.58                | 779.23    | 1,240.04  |
| Earnings (loss) per share (Baht) | 0.58                  | 0.46      | 0.73      |



## 14. Management Discussion and Analysis



### 14.1 Analysis of Operations and Financial Position for 2018

#### 14.1.1 Overview

##### Operation Overview and Significant Changes

CH. Karnchang Public Company Limited operates its core business of two categories, namely, the construction business and the regional basic infrastructure investment and development business, in order to strengthen its competitive edge and sustainable and steady growth.

In 2018, the Company and its subsidiaries executed many project construction agreements which would help constantly generate the Company Group's revenue, namely:

1. The Agreement for Management of Construction and Improvement of Administrative Building in the area of Depot in Huai Khwang and Supply, Installation of the M&E Systems (Additional) of the MRT Blue Line Extension Project with Bangkok Expressway and Metro Public Company Limited, with the contract value of approximately Baht 558 Million, exclusive of value added tax;
2. The Supplementary Agreement No. 1 for Double Track Railroad Construction Project, Chira Junction - Khon Kaen Section, No. 1, with the State Railway of Thailand, for the construction of altered railway work under the design in the area of Ban Phai railway station from high embankment under the existing design by the agreement to elevated structures, with the total contract value under the Supplementary Agreement of Baht 896 Million, inclusive of value added tax;
3. The Agreement for Construction of the Project for Development of Ditches along Vibhavadi Rangsit Road (Phase 1), Highway No. 31, connecting to Phaholyothin Road, Highway No. 1, between km.4+990 - km.28+700, for several sites, one of them with the Office of Highways 13 (Bangkok), Department of Highways, with the contract value of approximately Baht 297 Million, inclusive of value added tax;
4. The Variation Order No. 2 to Design, Supply, Install and Test the Telecommunications Network System (Integrated Radio Distribution Network System to support all Mobile Phone Operators in Thailand to provide both voice and data services, as well as accommodating frequencies, technology or new mobile phone operators in the future) in undergrounded areas of four MRT stations for the MRT Blue Line Extension Project, namely, Wat Mangkon Station, Sam Yod Station, Sanam Chai Station, and Itsaraphap Station, (Variation Order No.2 Provision of Integrated Radio Distribution Network (IRDN)), with Bangkok Expressway and Metro Public Company Limited, with the contract value of approximately Baht 249 Million, exclusive of value added tax;
5. The Agreement for Acceleration of the Opening of Operation Service of the MRT Blue Line Extension Project, divided into 3 sections, i.e., Hua Lamphong Station - Lak Song Station Section, Tao Poon Station - Sirindhorn Station Section, and Sirindhorn Station - Tha Phra Station Section (Variation Order No.3 Acceleration of the Works), with Bangkok Expressway and Metro Public Company Limited, with the contract value of approximately Baht 650 Million, exclusive of value added tax;
6. The Agreement for the Repair of the Structure of the Si Rat Expressway, Period 4, Phase 2, in respect of Sector C (Prachachuen - Chaeng Watthana) and certain part of Sector B (Urupong - Phayathai), with Bangkok Expressway and Metro Public Company Limited, with the contract value of approximately Baht 32 Million, exclusive of value added tax;
7. The Memorandum of Amendment Agreement (No. 1) for the Project Management Agreement for Civil Infrastructure and Electrical and Mechanical Systems Maintenance of the MRT Blue Line Project (the MRT Chaloem Ratchamongkhon Line), with Bangkok Expressway and Metro Public Company Limited, to increase the scope of works, with the contract value of approximately Baht 2,778 Million, exclusive of value added tax;
8. The Agreement for Gas Distribution System Relocation of Pathum Thani - Phaya Thai Project by the side of Vibhavadi Rangsit Road with PTT Public Company Limited, with the contract value of approximately Baht 27 Million, exclusive of value added tax;



9. The Construction Contract of Underground Manholes and Duct Banks in conjunction with the MRT Orange Line Project, Thailand Cultural Centre - Min Buri (Suwinthawong) Section: Contract 1 of Mass Rapid Transit Authority of Thailand, and the Construction Contract of Underground Manholes and Duct Banks in conjunction with the MRT Orange Line Project, Thailand Cultural Centre - Min Buri (Suwinthawong) Section: Contract 2 of Mass Rapid Transit Authority of Thailand with Metropolitan Electricity Authority, with the work value under the Contract 1 of approximately Baht 65 Million, exclusive of value added tax, and the work value under the Contract 2 of approximately Baht 398 Million, exclusive of value added tax.

With respect to the basic infrastructure investment and development business, there were significant changes as follows:

- In June 2018, the Company acquired 130 million ordinary shares in Bangkok Expressway and Metro Public Company Limited, with the value of Baht 995 Million, and as such, the Company's shareholding percentage in such company increased from 29.98 percent to 30.83 percent.
- In September 2018, the Company acquired 50 million ordinary shares in Bangkok Expressway and Metro Public Company Limited, with the value of Baht 410 Million, and as such, the Company's shareholding percentage in such company increased from 30.83 percent to 31.16 percent.
- In November 2018, the Company increased its capital in CH. Karnchang-Tokyu Construction Company Limited (subsidiary) in its original proportion in the amount of Baht 55 Million.
- In November 2018, the Company sold 14 million ordinary shares in CK Power Public Company Limited, with the total value of approximately Baht 74 Million, and recognized gain from sales of investments in such associated company under the consolidated financial statements for 2018 in the amount of approximately Baht 52 Million, and as such, the Company's shareholding percentage in such company reduced from 27.41 percent to 27.22 percent.
- In December 2018, the Company sold 40 million ordinary shares in Bangkok Expressway and Metro Public Company Limited, with the total value of approximately Baht 340 Million, and recognized gain from sales of investments in such associated company under the consolidated financial statements for 2018 in the amount of approximately Baht 208 Million, and as such, the Company's shareholding percentage in such company reduced from 31.16 percent to 30.89 percent.

#### **Accounting Standard and Auditor's Observation**

In 2018, regarding key audit matter, the auditor was of the opinion that recognition of revenue from construction services was of great significance in audit of the Company and its subsidiaries since it represented a transaction which had a significant amount as compared with the total revenues of the Company and its subsidiaries, and was also subject to management's discretion. The auditor gave the detailed explanations on audit procedures for such transaction, among of them, for instance, were reading the construction contracts to consider the conditions relating to revenue recognition; making enquiries from responsible executives and gaining a understanding of the Company's and its subsidiaries' process for assessment of the percentage of work completion and estimates of construction project costs of the entire projects; checking estimates of construction project costs with the budget plan for each project; checking actual cost of construction services with its supporting documents, etc., (as per the details in the auditor's report for the financial statements for 2018).

In addition, in the auditor's report, attention should be drawn to Note 16 to the consolidated financial statements regarding the dispute over a competing road with Udon Rattaya Expressway involving a subsidiary of Bangkok Expressway and Metro Public Company Limited (an associated company). There was still uncertainty about the compensation to be received by the subsidiary from the Government agency. Therefore, in the financial statements for the year ended December 31, 2018, the subsidiary did not record the compensation, together with interest thereon and related expenses that may be incurred. In this regard, the auditor's opinion was not modified in respect of this matter.

As for additional information relating to business overview, its details are indicated in the sections entitled Business Policy and Overview and Nature of Business Operations; and as for additional information relating to economic and industrial conditions, its details are set forth in the section entitled Trend of Growth and Development of Construction Industry.

### 14.1.2 Operational Results and Profitability

| Consolidated Income Statement<br>Unit: Million Baht  | Year             |                  | Change            |                |
|--|------------------|------------------|-------------------|----------------|
|  | 2018             | 2017             | Amount            | Percent        |
| Revenues from construction services and sales of construction materials  | 29,295.94        | 35,922.81        | (6,626.87)        | (18.45)        |
| Other income   | 1,879.63         | 1,807.87         | 71.76             | 3.97           |
| <b>Total revenues</b>  | <b>31,175.57</b> | <b>37,730.68</b> | <b>(6,555.11)</b> | <b>(17.37)</b> |
| Cost of construction services and sales of construction materials  | 26,975.66        | 33,088.08        | (6,112.42)        | (18.47)        |
| Administrative expenses  | 1,984.82         | 2,131.26         | (146.44)          | (6.87)         |
| <b>Total expenses</b>  | <b>28,960.48</b> | <b>35,219.34</b> | <b>(6,258.86)</b> | <b>(17.77)</b> |
| Profit before share of profit (loss) from investments in associated companies,<br>finance cost and income tax expenses | 2,215.09         | 2,511.34         | (296.25)          | (11.80)        |
| Share of profit (loss) from investments in associated companies  | 1,657.63         | 822.93           | 834.70            | 101.43         |
| Finance cost   | (1,247.53)       | (1,392.65)       | 145.12            | (10.42)        |
| Income tax expenses  | (138.78)         | (90.89)          | (47.89)           | 52.69          |
| <b>Net profit</b>  | <b>2,486.41</b>  | <b>1,850.73</b>  | <b>635.68</b>     | <b>34.35</b>   |
| <b>Equity holders of the Company</b>   | <b>2,494.31</b>  | <b>1,810.01</b>  | <b>684.30</b>     | <b>37.81</b>   |
| Non-controlling interests of the subsidiaries  | (7.90)           | 40.72            | (48.62)           | (119.42)       |

Net profit attributable to equity holders of the Company for 2018 amounted to Baht 2,494.31 Million, an increase by Baht 684.30 Million, representing 37.81 percent

The Company and its subsidiaries had net profit attributable to equity holders of the Company for 2018 amounted to Baht 2,494.31 Million, an increase of Baht 684.30 Million from the previous year, representing 37.81 percent, mainly due to an increase in share of profit from investments in associated companies, and a decrease in administrative expenses and finance cost.

Revenues from construction services and sales of construction materials for 2018 amounted to Baht 29,295.94 Million, a decrease by Baht 6,626.87 Million, representing 18.45 percent

The Company and its subsidiaries had revenues from construction services and sales of construction materials in the total amount of Baht 29,295.94 Million, representing 93.97 percent of total revenues, a decrease by Baht 6,626.87 Million from the previous year, representing 18.45 percent, mainly due to the fact that the Xayaburi Hydroelectric Power Project reached its late project phase.

Cost of construction services and sales of construction materials for 2018 amounted to Baht 26,975.66 Million, a decrease by Baht 6,112.42 Million, representing 18.47 percent.

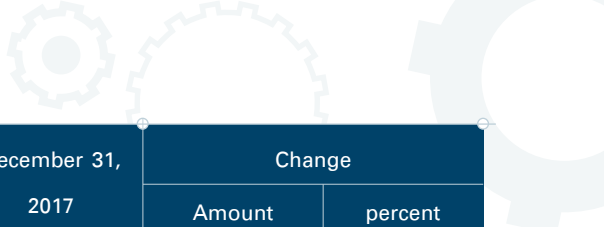
The Company and its subsidiaries had cost of construction services and sales of construction materials in the total amount of Baht 26,975.66 Million, a decrease by Baht 6,112.42 Million from the previous year, representing 18.47 percent. The Company and its subsidiaries had the gross profit in the amount of Baht 2,320.28 Million, a decrease by Baht 514.45 Million from the previous year, representing 18.15 percent; however, the gross profit margin of 2018 was equal to 7.92 percent, an increase from 7.89 percent from the previous year.

|  |  |
|--|--|
| <p>Other income for 2018 amounted to Baht 1,879.63 Million, an increase by Baht 71.76 Million, representing 3.97 percent.</p>  | <p>The Company and its subsidiaries had other income in the amount of Baht 1,879.63 Million, an increase by Baht 71.76 Million from that of the previous year, representing 3.97 percent, due to interest income from Xayaburi Power Company Limited and project management income.</p>  |
| <p>Administrative expenses for 2018 amounted to Baht 1,984.82 Million, a decrease by Baht 146.44 Million, representing 6.87 percent.</p>                                       | <p>The Company and its subsidiaries had administrative expenses in the amount of Baht 1,984.82 Million, a decrease by Baht 146.44 Million from that of the previous year, representing 6.87 percent, due to provision for allowance for doubtful accounts of a joint venture in 2017. However, in 2018, the National Legislative Assembly resolved to grant approval for the new draft Labor Protection Act, which was pending publication in the Government Gazette, by prescribing additional severance pay in case of employment termination by the employer for employees who have worked for 20 consecutive years or more, such employees shall be entitled to severance pay by not less than the most recent wage rate for 400 days. Such change was considered the project amendment for the project for benefits after employment termination, as a result, the Company and its subsidiaries would have the increased liabilities on provision for long-term employee benefits.</p> <p>The Company and its subsidiaries did not incur clear expenses for research and development of technology and innovations under the guidelines of the National Science and Technology Development Agency (NSTDA); however, the Company has supported and promoted development of its personnel to ensure their abilities in study and research for new knowledge, experimental development, using knowledge in science and technology to create new products or processes or improve the existing products or production processes to ensure achievement of the objective under the personnel development policy which would lead to new technology and innovations in their performance. As the Company has always continued to develop human resources, expenses therefor were incorporated into the personnel development policy.</p> |
| <p>Share of profit from investments in associated companies for 2018 amounted to Baht 1,657.63 Million, an increase by Baht 834.70 Million or representing 101.43 percent.</p> | <p>The Company and its subsidiaries had share of profit from investments in associated companies in the amount of Baht 1,657.63 Million, an increase by Baht 834.70 Million, as compared to that of the previous year, representing 101.43 percent, due to the fact that Bangkok Expressway and Metro Public Company Limited had gain on reclassification of investment, net of income tax, in the amount of Baht 698 Million, from reclassification of investment in CK Power Public Company Limited from an associated company to available-for-sale investments, as well as gain on sales of investments. In addition, CK Power Public Company Limited had the improved operational results due to an increase in the reservoir inflow of the Nam Ngum 2 Hydroelectric Power Project.</p>   |



| Share of Profit from Investments in Associated Companies<br>Unit: Million Baht | 2018            | 2017          | Change        | %             |
|--|-----------------|---------------|---------------|---------------|
| Bangkok Expressway and Metro Public Company Limited                            | 1,479.71        | 822.05        | 657.66        | 80.00         |
| CK Power Public Company Limited  | 178.40          | 1.21          | 177.19        | 14,643.80     |
| Kamala Senior Living Co., Ltd.   | (0.48)          | (0.33)        | (0.15)        | NA            |
| <b>Total</b>   | <b>1,657.63</b> | <b>822.93</b> | <b>834.70</b> | <b>101.43</b> |

|   |  |
|---|--|
| Finance cost for 2018 amounted to Baht 1,247.53 Million, a decrease by Baht 145.12 Million, representing 10.42 percent.       | The Company and its subsidiaries had finance cost in the amount of Baht 1,247.53 Million, an increase by Baht 145.12 Million as compared with that of the previous year, representing 10.42 percent, due to a decrease in the average interest rate and bank loan repayment.                               |
| Corporate income tax for 2018 amounted to Baht 138.78 Million, an increase by Baht 47.89 Million, representing 52.69 percent. | The Company and its subsidiaries had corporate income tax in the amount of Baht 138.78 Million, an increase by Baht 47.89 Million as compared with that of the previous year, representing 52.69 percent, mainly resulting from joint venture and subsidiaries in Thailand.                                |
| In 2018, return on equity was equal to 10.04 percent and return on assets was equal to 3.06 percent.                          | The Company and its subsidiaries had return on equity equal to 10.04 percent, an increase by 2.12 percent as compared with that of the previous year, and return on assets equal to 3.06 percent, an increase by 0.98 percent as compared with that of the previous year, due to the increased net profit. |



| Consolidated Statement of Financial Position<br>Unit: Million Baht | December 31,<br>2018 | December 31,<br>2017 | Change   |         |
|--|----------------------|----------------------|----------|---------|
|  |                      |                      | Amount   | percent |
| Assets   | 83,500.54            | 79,274.46            | 4,226.08 | 5.33    |
| Liabilities  | 57,671.82            | 55,401.38            | 2,270.44 | 4.10    |
| Shareholders' equity   | 25,828.72            | 23,873.08            | 1,955.64 | 8.19    |

|  |   |
|--|---|
| Total assets as at December 31, 2018 amounted to Baht 83,500.54 Million, an increase by 5.33 percent from the previous year.         | As at December 31, 2018, the Company and its subsidiaries had total assets amounting to Baht 83,500.54 Million, an increase by Baht 4,226.08 Million from the end of the previous year, representing 5.33 percent, mainly due to additional investments in Bangkok Expressway and Metro Public Company Limited, investments in property, plant and equipment, and additional loans to associated company. |
| Total liabilities as at December 31, 2018 amounted to Baht 57,671.82 Million, a decrease by 4.10 percent from the previous year.     | As at December 31, 2018, the Company and its subsidiaries had total liabilities amounting to Baht 57,671.82 Million, an increase by Baht 2,270.44 Million from the previous year, representing 4.10 percent, mainly due to an increase in trade and other payables, and advances received from employers and construction revenue received in advance.  |
| Shareholders' equity as at December 31, 2018 amounted to Baht 25,828.72 Million, an increase by 8.19 percent from the previous year. | As at December 31, 2018, the Company and its subsidiaries had shareholders' equity in the total amount of Baht 25,828.72 Million, an increase by Baht 1,955.64 Million from the previous year, representing 8.19 percent, resulting from the operational results of the Company and its subsidiaries, net of dividend payment.  |



| Cash Flow Statement<br>Unit: Million Baht                    | Year       |            |
|--|------------|------------|
|  | 2018       | 2017       |
| Net cash flows from (used in) operating activities           | 7,164.35   | 2,218.77   |
| Net cash flows from (used in) investing activities           | (1,876.53) | (1,677.99) |
| Net cash flows from (used in) financing activities           | (3,357.18) | (5,151.73) |
| Effect of exchange rate changes on cash and cash equivalents | (69.91)    | (106.13)   |
| Net increase (decrease) in cash                              | 1,860.73   | (4,717.08) |

In 2018, cash from operating activities amounted to Baht 7,164.35 Million; cash used in investing activities amounted to Baht 1,876.53 Million; and cash used in financing activities amounted to Baht 3,357.18 Million.

In 2018, the Company and its subsidiaries had net cash from operating activities amounting to Baht 7,164.35 Million, due to the operational results of the Company and its subsidiaries; cash used in investing activities amounting to Baht 1,876.53 Million, resulting from investments in associated companies and property, plant and equipment; and cash used in financing activities amounting to Baht 3,357.18 Million, resulting from bank loan repayment and dividend payment, and as such, net cash increased by Baht 1,860.73 Million.

#### 14.1.3 Ability in Asset Management

The asset value of the Company, its subsidiaries and jointly controlled entities under the consolidated financial statements reflected value close to fair value since the Company, its subsidiaries and jointly controlled entities arranged for the assessment of value of various assets. In addition, if it was expected which asset value would be impaired, the Company, its subsidiaries and jointly controlled entities would set aside a provision to ensure that asset value under the financial statements did not materially differ from fair value. As for investments of the Company and its subsidiaries, the provision for loss was set aside should the Company and its subsidiaries deem that investments had a tendency to be impaired. In this connection, the Company and its subsidiaries believed that the provision for impairment of investments as recorded was sufficient and investment value under the financial statements was close to fair value.

##### Trade accounts and other receivables

As at December 31, 2018, the Company and its subsidiaries had trade accounts receivable amounting to Baht 6,140.24 Million, divided into related companies trade accounts receivable representing 23.39 percent, such as, Bangkok Expressway and Metro Public Company Limited, Xayaburi Power Company Limited, TTW Public Company Limited, and non-related companies trade accounts receivable representing 76.61 percent, such as, the Mass Rapid Transit Authority of Thailand, the State Railway of Thailand, the Department of Highways, the Metropolitan Electricity Authority, and other receivables amounting to Baht 2,050.33 Million, therefore, the total receivables amounted to Baht 8,190.57 Million, an increase by Baht 2,728.70 Million from the end of 2017, representing 49.96 percent, due to the progress of the MRT Orange Line Project, thereby resulting in an increase in trade accounts receivable, together with interest compensation receivable of a subsidiary. The Company's trade accounts and other receivables were mostly from construction and sale of construction materials. Normally, the Company provided a credit term for 30-65 days, and for 2018, the average collection period of the Company and its subsidiaries equaled 85.05 days, an increase by 17.06 days from 2017, due to the gradual progress during the year of the MRT Orange Line Project, and as such, the total trade accounts receivable as at the end of the year was high as compared to revenues recognized in the year.

Trade accounts receivable were stated at the net realizable value. Allowance for doubtful accounts was provided by the Company and its subsidiaries for the estimated losses that might incur from uncollectible receivables. The allowance was generally based on collection history and analysis of debt aging (the analysis of debt aging was shown in Note 9 to Financial Statements).

#### **Short-term loans to related parties and interest receivable**

As at December 31, 2018, the Company and its subsidiaries had short-term loans to related parties and interest receivable under the consolidated financial statements amounting to Baht 267.90 Million, comprising loans extended to Joint Venture BBCE, CKCH Joint Venture, and Kamala Senior Living Co., Ltd., net of allowance for doubtful debts, in the amount of Baht 283.91 Million (allowance for doubtful debts under the separate financial statements amounting to Baht 3,726.25 Million), representing allowance for doubtful accounts for Joint Venture BBCE (see details in Note 6 d) to Financial Statements). The loans to Joint Venture BBCE were granted with a condition to waive interest under a resolution mutually passed by the Company and Bilfinger SE (formerly known as “Bilfinger Berger AG”), as joint venture partners, but they retained the right to claim such interest if the joint venture receives compensation for additional costs from the Expressway Authority of Thailand. The loan principal and interest were to be paid on the earlier of the date Joint Venture BBCE receives compensation for additional costs from the Expressway Authority of Thailand or the date when the Company called for the loan repayment.

#### **Unbilled receivables and construction revenue received in advance**

As at December 31, 2018, the Company and its subsidiaries had unbilled receivables amounting to Baht 3,103.91 Million, a decrease by Baht 1,490.96 Million from the end of 2017, due to acceleration of work delivery and payment collection. The construction revenue received in advance amounted to Baht 7,726.19 Million, an increase by Baht 4,346.96 Million, mainly resulting from construction revenue received in advance of the MRT Orange Line Project and the Xayaburi Hydroelectric Power Project.

#### **Construction in progress and construction supplies**

As at December 31, 2018, the Company and its subsidiaries had construction in progress and construction supplies amounting to Baht 763.51 Million, a decrease by Baht 2,612.19 Million from the end of 2017, due to the fact that in the previous year, certain projects were pending approval for change in work from the employer, which were approved for change during 2018.

#### **Long-term loans to associated company and interest receivable**

As at December 31, 2018, the Company and its subsidiaries had long-term loans to associated company amounting to Baht 12,314.76 Million and interest receivable amounting to Baht 1,758.13 Million, totaling Baht 14,072.89 Million. On May 16, 2016, the Board of Directors’ Meeting resolved to grant approval for the Company to provide sponsors support to Xayaburi Power Company Limited (CK Power Public Company Limited’s associated company). Thereafter, on May 17, 2016, the Company signed the Sponsors Loan Agreement with such company, under which the Company would extend loans in the amount of approximately Baht 13,547 Million to such company for use in construction of additional works of the Xayaburi Hydroelectric Power Project. Such loans are to carry the interest at the Minimum Loan Rate plus 0.25 percent (MLR + 0.25%) per annum during the project construction period and at the Minimum Loan Rate (MLR) during the period of the project’s Commercial Operation Date (within 2019). The loan repayment was scheduled to be made and due in full by no later than 2031, at the same rate as that of loans from the lending banks for this project. In this regard, Xayaburi Power Company Limited would repay such loans and interest from the remaining cash after fulfillment of all provisions in the long-term loan agreements of the lending banks (see details in Note 6 e) to Financial Statements).

## Investments in associated companies

As at December 31, 2018, the Company and its subsidiaries had investments in associated companies under the consolidated financial statements amounting to Baht 22,446.73 Million, an increase from the end of 2017 by Baht 2,639.78 Million, per the details as follows:

|   | 2018    | 2017    | 2018             | 2017             | Change          |              |
|---|---------|---------|------------------|------------------|-----------------|--------------|
|   | percent | percent | Million Baht     | Million Baht     | Million Baht    | %            |
| Bangkok Expressway and Metro Public Company Limited | 31.78   | 30.87   | 19,230.86        | 16,762.97        | 2,467.89        | 14.72        |
| CK Power Public Company Limited                     | 27.22   | 27.41   | 3,196.68         | 3,044.10         | 152.57          | 5.01         |
| Kamala Senior Living Co., Ltd.                      | 20.00   | 20.00   | 19.20            | (0.13)           | 19.32           | (15,456.80)  |
| <b>Total</b>  |         |         | <b>22,446.73</b> | <b>19,806.95</b> | <b>2,639.78</b> | <b>13.33</b> |

The increase in investments in associated companies was mainly caused by the Company's additional investments in Bangkok Expressway and Metro Public Company Limited during the year and the improved operational results of the associated companies (see details of change in investments in associated companies in Note 16 to Financial Statements).

### 14.1.4 Liquidity and Adequacy of Investments

|   |  |
|---|--|
| Current ratio as at December 31, 2018 was equal to 0.91 times, a decrease from 1.13 times of the previous year.         | The Company and its subsidiaries had current ratio under the consolidated financial statements as at December 31, 2018 equal to 0.91 times, a decrease as compared with 1.13 times of the end of the previous year; and quick ratio equal to 0.31 times, a decrease from 0.35 times of the end of the previous year, due to an increase in current liabilities of the Company and its subsidiaries. However, the Company was certain that the Company's liquidity was adequate for its operations, and the Company was able to service its debts and also complied with the material borrowing conditions, as well as securing additional financing. In addition, the Company and its subsidiaries had cash cycle at approximately 49.23 days, an increase from 44.11 days from the previous year (average collection period + average sale period - debt servicing period), representing an improved ability in financial management. |
| Debt to equity ratio as at December 31, 2018, was equal to 1.07 times, a decrease from 1.27 times of the previous year. | The Company and its subsidiaries had debt to equity ratio under the consolidated financial statements as at December 31, 2018 equal to 1.07 times, a decrease from 1.27 times from the end of the previous year. The debt to equity ratio was still lower than the specified conditions of issuance of debentures at not exceeding 3.00 times.   |
| Interest coverage for 2018 was equal to 3.68 times.   | The interest coverage was equal to 3.68 times, an increase by 0.60 times as compared with 2017, due to an increase in net profit; while finance cost decreased.  |

#### 14.1.5 Obligations

As at December 31, 2018, the Company's significant obligations were as follows:

- The Company provided security for credits for the subsidiary's construction project, namely, CH. Karnchang (Lao) Co., Ltd., which was extended by banks and financial institutions, in the total amount of Baht 23,728 Million.
- The Company and its subsidiaries had obligations relating to costs of various construction projects and services, which the Company and its subsidiaries entered into agreements in the amounts of Baht 19,525 Million, Euro 78 Million, USD 58 Million, and YEN 48 Million.
- Letters of guarantee were issued by banks in the name of the Company and its subsidiaries in connection with their obligations in the ordinary course of business in the total amount of Baht 25,292 Million.
- The Company and its subsidiaries incurred capital expenditures in the amount of approximately Baht 734 Million, YEN 215 Million, and SEK 1 Million, in connection with purchase of machinery and equipment.
- Subsidiaries were obligated to pay rentals under the office lease agreements, with the contract term during one to six years, in the total amount of Baht 109 Million.
- The Company was obligated to provide financial support to Xayaburi Power Company Limited (see details in Note 6 to Financial Statements).
- Subsidiaries were obligated to extend a fund to one associated company for use in development and management of the elderly residential project, in the remaining amount of Baht 253 Million.

#### 14.1.6 Factors Affecting Future Operations

In 2018, the government sector pushed forward the large-scale infrastructure projects, among of them, for instance, the hi-speed rail linked 3 airport project, the Thailand-Chinese High Speed Rail Project, the U-Tapao and Eastern Airport City Development Project, the Laem Chabang Port Project, the Map Ta Phut Industrial Port Project, Phase 3, etc., which were pending bidding process until 2019. Upon commencement of construction of these mega projects, this would propel economic movement against the economic slowdown and boost confidence in Thailand in the global eyes, and attract investment from the business sector around the world and upgrade Thailand's status to step into Thailand Industry 4.0 as mechanism in driving forward Thailand's economy in the future. In addition to the projects under bidding process, there were many projects pushed forwarded by the government sector to ensure continuity in infrastructure investment, such as, the MRT South Purple Line Project, Tao Poon - Rat Burana Section, the MRT West Orange Line Project, Bang Khun Non - Thailand Cultural Centre Section, Rama III - Dao Khanong Expressway, 9 routes of double track railroads, etc., all of these projects were considered significance to the transportation, both in Bangkok and Thailand as a whole.

## Report on Responsibilities of the Board of Directors towards the Financial Report

The Company's Board of Directors realizes the significance of its duties and responsibilities in supervising the Company's business to ensure good management in accordance with laws, detailed objectives and the Company's Articles of Association, as well as resolutions of the shareholders' meetings with integrity and prudence. The Board of Directors protects the benefits of the Company, shareholders and general investors by ensuring that the Company's financial report contains accurate and full accounting records that reflect the Company's actual financial position and operational results.

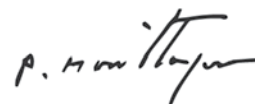
The Company's Board of Directors establishes the Audit Committee comprising independent directors fully qualified in accordance with the requirements of the Stock Exchange to review and ensure the accuracy and sufficiency of the financial report, including accurate and complete disclosure of connected transactions or transactions with possible conflict of interest, in compliance with the requirements of the Stock Exchange and relevant rules and regulations. In this regard, the Audit Committee has already reported their performance to the Company's Board of Directors.

The Company's Board of Directors is of the opinion that the financial statements for 2018 of the Company and the subsidiaries, which have been reviewed by the Audit Committee in conjunction with the management, and audited by the Company's auditor, reflect accurate financial position and operational results as appropriate in material aspects in accordance with generally accepted accounting principles.



(Miss Supamas Trivisvavet)

President



(Mr. Prasert Marittanaporn)

Director





CH. Karnchang Public Company Limited and its subsidiaries  
Report and consolidated financial statements  
31 December 2018

## Independent Auditor's Report

To the Shareholders of CH. Karnchang Public Company Limited

### Opinion

I have audited the accompanying consolidated financial statements of CH. Karnchang Public Company Limited and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2018, and the related consolidated statements of comprehensive income, changes in shareholders' equity and cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies, and have also audited the separate financial statements of CH. Karnchang Public Company Limited for the same period.

In my opinion, the financial statements referred to above present fairly, in all material respects, the financial position of CH. Karnchang Public Company Limited and its subsidiaries and of CH. Karnchang Public Company Limited as at 31 December 2018, their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

### Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Group in accordance with the Code of Ethics for Professional Accountants as issued by the Federation of Accounting Professions as relevant to my audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

### Emphasis of matter

I draw attention to Note 16 to the consolidated financial statements regarding the dispute over a competing road with Udon Ratthaya Expressway involving a subsidiary of Bangkok Expressway and Metro Public Company Limited (an associated company). There is still uncertainty about the compensation to be received by the subsidiary from the Government agency. Therefore, in the financial statements for the year ended 31 December 2018 the subsidiary did not record the compensation, together with interest thereon and related expenses that may be incurred. My opinion is not modified in respect of this matter.



## Key Audit Matters

Key audit matters are those matters that, in my professional judgement, were of most significance in my audit of the financial statements of the current period. These matters were addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

I have fulfilled the responsibilities described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report, including in relation to these matters. Accordingly, my audit included the performance of procedures designed to respond to my assessment of the risks of material misstatement of the financial statements. The results of my audit procedures, including the procedures performed to address the matters below, provide the basis for my audit opinion on the accompanying financial statements as a whole.

Key audit matter and how audit procedures respond to the matter are described below.

### *Recognition of revenue from construction services*

The Company and its subsidiaries disclosed their policies on recognition of revenue from construction services, estimation of construction project costs and provision for losses on construction projects in Note 4 and Note 5 to the financial statements. I identified the recognition of revenue from construction services and the estimates of possible losses from construction contracts to be areas of significant risk in audit. This is because the amount of revenue from construction services that the Company and its subsidiaries recognise in each period forms a significant portion of the Group's total revenue.

In addition, the process of measurement, the determination of appropriate timing of recognition and the estimates of possible losses are areas requiring management to exercise significant judgement to assess the percentage of completion of construction work, the probability of loss, and the measurement of possible losses. There are therefore risks with respect to the amount and timing of the recognition of revenue from construction services and the estimates of possible losses from construction contracts.

I examined the recognition of revenue from construction services and the provision for losses on construction projects by assessing and testing the effectiveness of the internal controls put in place by the Company and its subsidiaries over the procurement process, the estimation of project costs and revisions thereto, the recognition of revenue and the estimation of percentage of work completion and possible losses from construction contracts by making enquiry of responsible executives, gaining an understanding of the controls and selecting representative samples to test the operation of the designed controls. I also read the construction contracts to consider the conditions relating to revenue recognition, made enquiry of responsible executives, gained an understanding of the Company's and its subsidiaries' process to assess the percentage of completion and cost estimates for projects, checked estimates of project costs to the project budgets. I checked actual costs against supporting documents, tested the calculation of the percentage of completion based on actual construction costs incurred, performed analytical procedures on gross margins of construction projects and compared the percentage of completion as evaluated by the project engineer to the percentage of completion based on actual construction costs incurred. In addition, I evaluated the possible losses on projects assessed by the management through an analysis of the ratio of actual cost incurred against cost estimates for projects for each significant cost component.

## **Other Information**

Management is responsible for the other information. The other information comprise the information included in annual report of the Group, but does not include the financial statements and my auditor's report thereon. The annual report of the Group is expected to be made available to me after the date of this auditor's report.

My opinion on the financial statements does not cover the other information and I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated.

When I read the annual report of the Group, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance for correction of the misstatement.



## **Responsibilities of Management and Those Charged with Governance for the Financial Statements**

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Thai Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

### **Auditor's Responsibilities for the Audit of the Financial Statements**

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Thai Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Thai Standards on Auditing, I exercise professional judgement and maintain professional skepticism throughout the audit. I also:

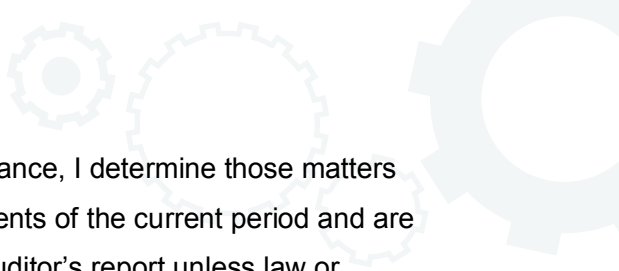
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide those charged with governance with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.





From the matters communicated with those charged with governance, I determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

I am responsible for the audit resulting in this independent auditor's report.

Chatchai Kasemsrithanawat  
Certified Public Accountant (Thailand) No. 5813

EY Office Limited  
Bangkok: 28 February 2019





CH. Karnchang Public Company Limited and its subsidiaries

Statement of financial position

As at 31 December 2018

(Unit: Baht)

|   |      | Consolidated financial statements |                 | Separate financial statements |                 |
|---|------|-----------------------------------|-----------------|-------------------------------|-----------------|
|   | Note | 2018                              | 2017            | 2018                          | 2017            |
| Assets  |      |                                   |                 |                               |                 |
| Current assets  |      |                                   |                 |                               |                 |
| Cash and cash equivalents                                     | 7    | 8,549,823,195                     | 6,689,094,815   | 6,098,630,676                 | 4,435,435,232   |
| Current investments   | 8    | 384,562,356                       | 2,208,352,112   | 333,524,777                   | 2,176,199,490   |
| Trade and other receivables                                   | 6, 9 | 8,190,564,808                     | 5,461,862,925   | 8,520,625,009                 | 7,215,797,747   |
| Short-term loans to related parties and interest receivable   | 6    | 267,895,726                       | 69,254,556      | 240,061,150                   | 2,733,836,184   |
| Unbilled receivables  | 10   | 3,103,911,063                     | 4,594,875,333   | 2,923,359,543                 | 3,920,720,647   |
| Construction in progress and construction supplies            | 11   | 763,507,847                       | 3,375,692,809   | 411,196,049                   | 1,021,350,140   |
| Advance payment to subcontractors                             |      | 4,517,489,586                     | 4,572,251,306   | 1,849,900,161                 | 2,050,285,090   |
| Current tax assets  |      | 367,164,945                       | 836,978,828     | 315,797,787                   | 765,852,807     |
| Other current assets  | 12   | 403,772,475                       | 587,158,271     | 387,037,846                   | 562,903,934     |
| Total current assets  |      | 26,548,692,001                    | 28,395,520,955  | 21,080,132,998                | 24,882,381,271  |
| Non-current assets  |      |                                   |                 |                               |                 |
| Restricted bank deposits                                      | 13   | 15,000,000                        | 15,221,213      | -                             | 221,213         |
| Long-term loans to associated company and interest receivable | 6    | 14,072,892,983                    | 12,183,818,342  | 14,072,892,983                | 12,183,818,342  |
| Long-term loans to related company and interest receivable    | 6    | 3,874,608                         | 6,705,936       | 3,874,608                     | 6,705,936       |
| Investments in subsidiaries                                   | 14   | -                                 | -               | 306,476,901                   | 251,476,901     |
| Investments in associated companies                           | 16   | 22,446,728,243                    | 19,807,074,282  | 23,552,001,032                | 22,342,355,042  |
| Other long-term investments                                   | 17   | 9,566,994,040                     | 9,721,809,580   | 9,526,864,039                 | 9,681,679,580   |
| Investment properties   | 18   | 569,552,594                       | 530,994,068     | 529,781,442                   | 492,363,219     |
| Property, plant and equipment                                 | 19   | 9,787,782,833                     | 8,317,537,190   | 7,987,869,015                 | 6,004,759,985   |
| Intangible assets   | 20   | 40,138,375                        | 47,469,713      | 39,551,340                    | 46,599,273      |
| Accounts receivable - claims for additional costs             | 28   | 2,515,620,262                     | 2,515,620,262   | 2,515,620,262                 | 2,515,620,262   |
| Less: Allowance for doubtful accounts                         | 28   | (2,515,620,262)                   | (2,515,620,262) | (2,515,620,262)               | (2,515,620,262) |
| Accounts receivable - claims for additional costs, net        |      | -                                 | -               | -                             | -               |
| Advances for future projects                                  |      | 101,847,617                       | 16,263,874      | 101,847,617                   | 16,263,874      |
| Withholding tax deducted at source                            |      | 88,089,548                        | 50,772,476      | 15,705,790                    | 551,140         |
| Deferred tax assets   | 30   | 176,686,576                       | 124,378,490     | 150,799,452                   | 97,634,116      |
| Other non-current assets                                      |      | 82,261,575                        | 56,894,781      | 75,472,265                    | 48,680,338      |
| Total non-current assets                                      |      | 56,951,848,992                    | 50,878,939,945  | 56,363,136,484                | 51,173,108,959  |
| Total assets  |      | 83,500,540,993                    | 79,274,460,900  | 77,443,269,482                | 76,055,490,230  |

The accompanying notes are an integral part of the financial statements.

CH. Karnchang Public Company Limited and its subsidiaries

Statement of financial position (continued)

As at 31 December 2018

(Unit: Baht)

|  |       | Consolidated financial statements |                | Separate financial statements |                |
|--|-------|-----------------------------------|----------------|-------------------------------|----------------|
|  | Note  | 2018                              | 2017           | 2018                          | 2017           |
| Liabilities and shareholders' equity                             |       |                                   |                |                               |                |
| Current liabilities  |       |                                   |                |                               |                |
| Bank overdrafts and short-term loans from financial institutions | 21    | 6,319,965,911                     | 8,265,387,333  | 5,897,699,110                 | 7,257,964,848  |
| Trade and other payables   | 6, 22 | 5,396,504,685                     | 4,037,673,142  | 5,020,752,647                 | 3,046,374,828  |
| Current portion of hire purchase creditors                       | 23    | 1,325,182                         | 13,251,679     | 1,325,182                     | 13,251,679     |
| Current portion of long-term loans                               | 24    | 325,000,000                       | 1,695,370,000  | 325,000,000                   | 1,695,370,000  |
| Current portion of debentures                                    | 25    | 4,500,000,000                     | 2,000,000,000  | 4,500,000,000                 | 2,000,000,000  |
| Advances received from employers and                             |       |                                   |                |                               |                |
| construction revenue received in advance                         | 6, 10 | 10,983,088,544                    | 7,663,045,242  | 8,271,747,298                 | 7,379,017,604  |
| Retention for construction                                       |       | 699,343,714                       | 875,766,677    | 534,065,289                   | 620,539,882    |
| Income tax payable   |       | 23,403,776                        | 21,493,630     | 23,403,776                    | 21,493,630     |
| Unbilled output tax  |       | 367,582,351                       | 249,823,843    | 359,239,119                   | 231,834,176    |
| Derivative financial liabilities                                 |       | 315,647,874                       | 198,347,157    | 200,885,974                   | 62,347,833     |
| Other current liabilities  |       | 105,934,029                       | 77,208,444     | 101,199,914                   | 59,146,843     |
| Total current liabilities  |       | 29,037,796,066                    | 25,097,367,147 | 25,235,318,309                | 22,387,341,323 |
| Non-current liabilities  |       |                                   |                |                               |                |
| Hire purchase creditors, net of current portion                  | 23    | 28,604                            | 1,353,786      | 28,604                        | 1,353,786      |
| Long-term loans, net of current portion                          | 24    | 515,443,288                       | 836,702,877    | 515,443,288                   | 836,702,877    |
| Debentures, net of current portion                               | 25    | 25,034,222,525                    | 26,481,932,951 | 25,034,222,525                | 26,481,932,951 |
| Provision for long-term employee benefits                        | 26    | 858,780,206                       | 725,164,302    | 535,246,240                   | 393,612,031    |
| Deferred tax liabilities   | 30    | 2,225,552,026                     | 2,258,862,604  | 2,169,542,475                 | 2,202,853,054  |
| Total non-current liabilities                                    |       | 28,634,026,649                    | 30,304,016,520 | 28,254,483,132                | 29,916,454,699 |
| Total liabilities  |       | 57,671,822,715                    | 55,401,383,667 | 53,489,801,441                | 52,303,796,022 |
| Shareholders' equity   |       |                                   |                |                               |                |
| Share capital  |       |                                   |                |                               |                |
| Registered   |       |                                   |                |                               |                |
| 1,693,899,970 ordinary shares of Baht 1 each                     |       | 1,693,899,970                     | 1,693,899,970  | 1,693,899,970                 | 1,693,899,970  |
| Issued and fully paid-up   |       |                                   |                |                               |                |
| 1,693,896,872 ordinary shares of Baht 1 each                     |       | 1,693,896,872                     | 1,693,896,872  | 1,693,896,872                 | 1,693,896,872  |
| Share premium  |       | 4,869,410,139                     | 4,869,410,139  | 4,869,410,139                 | 4,869,410,139  |
| Retained earnings  |       |                                   |                |                               |                |
| Appropriated - statutory reserve                                 | 27    | 174,889,997                       | 174,889,997    | 169,389,997                   | 169,389,997    |
| Unappropriated   |       | 13,365,043,548                    | 11,627,299,952 | 8,769,130,702                 | 8,291,085,259  |
| Other components of shareholders' equity                         |       | 5,317,771,265                     | 5,120,725,053  | 8,451,640,331                 | 8,727,911,941  |
| Equity attributable to owners of the Company                     |       | 25,421,011,821                    | 23,486,222,013 | 23,953,468,041                | 23,751,694,208 |
| Non-controlling interests of the subsidiaries                    |       | 407,706,457                       | 386,855,220    | -                             | -              |
| Total shareholders' equity                                       |       | 25,828,718,278                    | 23,873,077,233 | 23,953,468,041                | 23,751,694,208 |
| Total liabilities and shareholders' equity                       |       | 83,500,540,993                    | 79,274,460,900 | 77,443,269,482                | 76,055,490,230 |

The accompanying notes are an integral part of the financial statements.

**CH. Karnchang Public Company Limited and its subsidiaries**
**Statement of comprehensive income**
**For the year ended 31 December 2018**

(Unit: Baht)

|   |             | <b>Consolidated financial statements</b> |                       | <b>Separate financial statements</b> |                       |
|---|-------------|--|-----------------------|--------------------------------------|-----------------------|
|   | <b>Note</b> | <b>2018</b>                              | <b>2017</b>           | <b>2018</b>                          | <b>2017</b>           |
| <b>Profit or loss:</b>  |             |  |                       |                                      |                       |
| <b>Revenues</b>   |             |  |                       |                                      |                       |
| Revenues from construction services   |             | 29,292,299,525                           | 35,899,686,248        | 21,794,372,588                       | 18,839,662,451        |
| Sales of construction materials   |             | 3,637,352                                | 23,123,725            | 11,200,807                           | 11,509,934            |
| Other income  |             |  |                       |                                      |                       |
| Project management income   | 6           | 203,097,268                              | 147,903,284           | 203,097,268                          | 149,253,284           |
| Rental income   |             | 64,865,669                               | 52,368,439            | 108,059,744                          | 143,084,456           |
| Transportation income   |             | -  | 2,851,843             | 33,000                               | 32,630,229            |
| Interest income   | 6           | 816,485,634                              | 738,052,184           | 871,302,755                          | 854,602,913           |
| Dividend income   | 6           | 464,714,590                              | 464,637,240           | 1,141,146,626                        | 1,174,708,388         |
| Gain on sales of investments in subsidiary and associated companies   | 16          | 259,988,786                              | 303,144,371           | 240,160,000                          | 178,155,608           |
| Others  |             | 70,479,533                               | 98,914,760            | 84,927,722                           | 115,287,956           |
| <b>Total revenues</b>   |             | <b>31,175,568,357</b>                    | <b>37,730,682,094</b> | <b>24,454,300,510</b>                | <b>21,498,895,219</b> |
| <b>Expenses</b>   |             |  |                       |                                      |                       |
| Cost of construction services and sales of construction materials   |             | 26,975,661,929                           | 33,088,073,834        | 20,106,254,843                       | 17,432,201,300        |
| Administrative expenses   |             | 1,984,823,703                            | 2,131,263,058         | 1,758,396,025                        | 1,940,138,123         |
| <b>Total expenses</b>   |             | <b>28,960,485,632</b>                    | <b>35,219,336,892</b> | <b>21,864,650,868</b>                | <b>19,372,339,423</b> |
| <b>Profit before share of profit from investments in associated companies, finance cost and income tax expenses</b> |             | <b>2,215,082,725</b>                     | <b>2,511,345,202</b>  | <b>2,589,649,642</b>                 | <b>2,126,555,796</b>  |
| Share of profit from investments in associated companies  | 16          | 1,657,629,585                            | 822,928,521           | -                                    | -                     |
| <b>Profit before finance cost and income tax expenses</b>   |             | <b>3,872,712,310</b>                     | <b>3,334,273,723</b>  | <b>2,589,649,642</b>                 | <b>2,126,555,796</b>  |
| Finance cost  |             |  |                       |                                      |                       |
| (for construction segment and investment segment)   |             | (1,247,530,284)                          | (1,392,650,483)       | (1,210,755,296)                      | (1,281,363,623)       |
| <b>Profit before income tax expenses</b>  |             | <b>2,625,182,026</b>                     | <b>1,941,623,240</b>  | <b>1,378,894,346</b>                 | <b>845,192,173</b>    |
| Income tax expenses   |             |  |                       |                                      |                       |
| (for construction segment and investment segment)   | 30          | (138,780,460)                            | (90,892,692)          | (138,854,397)                        | (65,963,933)          |
| <b>Profit for the year</b>  |             | <b>2,486,401,566</b>                     | <b>1,850,730,548</b>  | <b>1,240,039,949</b>                 | <b>779,228,240</b>    |
| <b>Other comprehensive income:</b>  |             |  |                       |                                      |                       |
| <i>Other comprehensive income to be reclassified to profit or loss in subsequent periods:</i>                       |             |  |                       |                                      |                       |
| Gain (loss) on changes in value of available-for-sale investments, net of income tax                                |             | (140,869,640)                            | 1,114,091,545         | (140,869,640)                        | 1,114,091,545         |
| Unrealised loss from cash flow hedges, net of income tax  |             | (53,820,375)                             | (196,997,233)         | (135,401,970)                        | (66,194,105)          |
| Share of other comprehensive income from associates   |             | 396,275,909                              | 98,534,915            | -                                    | -                     |
| Other comprehensive income to be reclassified to profit or loss in subsequent periods - net of income tax           |             | 201,585,894                              | 1,015,629,227         | (276,271,610)                        | 1,047,897,440         |
| <i>Other comprehensive income not to be reclassified to profit or loss in subsequent periods</i>                    |             |  |                       |                                      |                       |
| Actuarial gain (loss), net of income tax  |             | 3,724,742                                | 15,409,022            | -                                    | (5,662,662)           |
| Share of other comprehensive income from associates   |             | 3,423,349                                | 10,829,128            | -                                    | -                     |
| Other comprehensive income not to be reclassified to profit or loss in subsequent periods - net of income tax       |             | 7,148,091                                | 26,238,150            | -                                    | (5,662,662)           |
| <b>Other comprehensive income for the year</b>  |             | <b>208,733,985</b>                       | <b>1,041,867,377</b>  | <b>(276,271,610)</b>                 | <b>1,042,234,778</b>  |
| <b>Total comprehensive income for the year</b>  |             | <b>2,695,135,551</b>                     | <b>2,892,597,925</b>  | <b>963,768,339</b>                   | <b>1,821,463,018</b>  |

The accompanying notes are an integral part of the financial statements.

**CH. Karnchang Public Company Limited and its subsidiaries**  
**Statement of comprehensive income (continued)**  
**For the year ended 31 December 2018**

(Unit: Baht)

|  | <b>Consolidated financial statements</b> |                      | <b>Separate financial statements</b> |                      |
|--|--|----------------------|--------------------------------------|----------------------|
| <b>Note</b>  | <b>2018</b>                              | <b>2017</b>          | <b>2018</b>                          | <b>2017</b>          |
| <b>Profit (loss) attributable to:</b>                |  |                      |                                      |                      |
| Equity holders of the Company                        | 2,494,309,044                            | 1,810,006,513        | <u>1,240,039,949</u>                 | <u>779,228,240</u>   |
| Non-controlling interests of the subsidiaries        | <u>(7,907,478)</u>                       | <u>40,724,035</u>    |                                      |                      |
|  | <u>2,486,401,566</u>                     | <u>1,850,730,548</u> |                                      |                      |
| <b>Total comprehensive income attributable to:</b>   |  |                      |                                      |                      |
| Equity holders of the Company                        | 2,696,784,314                            | 2,852,205,811        | <u>963,768,339</u>                   | <u>1,821,463,018</u> |
| Non-controlling interests of the subsidiaries        | <u>(1,648,763)</u>                       | <u>40,392,114</u>    |                                      |                      |
|  | <u>2,695,135,551</u>                     | <u>2,892,597,925</u> |                                      |                      |
| <b>Earnings per share</b>                            | <b>31</b>                                |                      |                                      |                      |
| Basic earnings per share                             |  |                      |                                      |                      |
| Profit attributable to equity holders of the Company | <u>1.47</u>                              | <u>1.07</u>          | <u>0.73</u>                          | <u>0.46</u>          |
| Weighted average number of ordinary shares (shares)  | <u>1,693,896,872</u>                     | <u>1,693,896,872</u> | <u>1,693,896,872</u>                 | <u>1,693,896,872</u> |

The accompanying notes are an integral part of the financial statements.

CH. Karnchang Public Company Limited and its subsidiaries  
Statement of changes in shareholders' equity  
For the year ended 31 December 2018

(Unit: Baht)

| Consolidated financial statements   |  |                   |                |  |   |  |  |  |                |  |       |  |
|---|--|-------------------|----------------|--|---|--|--|--|----------------|--|-------|--|
|   | Equity attributable to owners of the Company |                   |                |  |   |  |  |  |                |  |       |  |
|   | Other components of equity                   |                   |                |  |   |  |  |  |                |  |       |  |
|   | Other comprehensive income                   |                   |                |  |   |  |  |  |                |  |       |  |
|   | Share premium                                | Retained earnings | Unappropriated | Unrealised gain (loss) from cash flow hedges | Share of other comprehensive income from associates | Total other components of shareholders' equity | Total equity attributable to owners of the Company | Equity attributable to non-controlling interests of the subsidiaries | Total          | Equity attributable to non-controlling interests of the subsidiaries | Total |  |
| Issued and fully paid-up share capital  | Share premium                                | Appropriated      | Unappropriated | Unrealised gain (loss) from cash flow hedges | Share of other comprehensive income from associates | Total other components of shareholders' equity | Total equity attributable to owners of the Company | Equity attributable to non-controlling interests of the subsidiaries | Total          | Equity attributable to non-controlling interests of the subsidiaries | Total |  |
| Balance as at 1 January 2017  | 4,869,410,139                                | 174,889,997       | 10,637,165,554 | 20,247,382                                   | (61,270,120)  | 4,105,277,046                                  | 21,480,639,608                                     | 373,683,106  | 21,854,322,714 |  |       |  |
| Dividend paid (Note 35)   | -  | -                 | (846,623,406)  | -  | -   | -  | (846,623,406)                                      | -  | (846,623,406)  |  |       |  |
| Profit for the year   | -  | -                 | 1,810,006,513  | -  | -   | -  | 1,810,006,513                                      | 40,724,035   | 1,850,730,548  |  |       |  |
| Other comprehensive income for the year   | -  | -                 | 26,751,291     | (196,997,233)                                | 98,353,695  | 1,015,448,007                                  | 1,042,199,298                                      | (331,921)  | 1,041,867,377  |  |       |  |
| Total comprehensive income for the year   | -  | -                 | 1,836,757,804  | (196,997,233)                                | 98,353,695  | 1,015,448,007                                  | 2,852,205,811                                      | 40,392,114   | 2,892,597,925  |  |       |  |
| Decrease in non-controlling interests of the subsidiary from dividend payment of the subsidiary | -  | -                 | -              | -  | -   | -  | -  | (27,220,000)   | (27,220,000)   |  |       |  |
| Balance as at 31 December 2017  | 4,869,410,139                                | 174,889,997       | 11,627,299,952 | (176,749,851)                                | 37,083,575  | 5,120,725,053                                  | 23,486,222,013                                     | 386,855,220  | 23,873,077,233 |  |       |  |
| Balance as at 1 January 2018  | 4,869,410,139                                | 174,889,997       | 11,627,299,952 | (176,749,851)                                | 37,083,575  | 5,120,725,053                                  | 23,486,222,013                                     | 386,855,220  | 23,873,077,233 |  |       |  |
| Dividend paid (Note 35)   | -  | -                 | (761,994,506)  | -  | -   | -  | (761,994,506)                                      | -  | (761,994,506)  |  |       |  |
| Profit for the year   | -  | -                 | 2,494,309,044  | -  | -   | -  | 2,494,309,044                                      | (7,907,478)  | 2,486,401,566  |  |       |  |
| Other comprehensive income for the year   | -  | -                 | 5,429,058      | (53,820,375)                                 | 391,736,227   | 197,046,212                                    | 202,475,270  | 6,258,715  | 208,733,985    |  |       |  |
| Total comprehensive income for the year   | -  | -                 | 2,499,738,102  | (53,820,375)                                 | 391,736,227   | 197,046,212                                    | 2,696,784,314                                      | (1,648,763)  | 2,695,135,551  |  |       |  |
| Increase in non-controlling interests of the subsidiary from increase share capital             | -  | -                 | -              | -  | -   | -  | -  | 45,000,000   | 45,000,000     |  |       |  |
| Decrease in non-controlling interests of the subsidiary from dividend payment of the subsidiary | -  | -                 | -              | -  | -   | -  | -  | (22,500,000)   | (22,500,000)   |  |       |  |
| Balance as at 31 December 2018  | 4,869,410,139                                | 174,889,997       | 13,365,043,548 | (230,570,226)                                | 428,819,802   | 5,317,771,265                                  | 25,421,011,821                                     | 407,706,457  | 25,828,718,278 |  |       |  |

CH. Kamchang Public Company Limited and its subsidiaries  
Statement of changes in shareholders' equity (continued)  
For the year ended 31 December 2018

| Separate financial statements                |               |                   |                |  |   |                                  |  |  |  | (Unit: Baht) |
|--|---------------|-------------------|----------------|--|---|----------------------------------|--|--|--|--------------|
| Other components of equity                   |               |                   |                |  |   |                                  |  |  |  |              |
| Other comprehensive income                   |               |                   |                |  |   |                                  |  |  |  |              |
| Issued and<br>fully paid-up<br>share capital | Share premium | Retained earnings |                | Unrealised<br>gain (loss) from<br>cash flow hedges | Total other<br>components<br>of shareholders'<br>equity | Total<br>shareholders'<br>equity |  |  |  |              |
|  |               | Appropriated      | Unappropriated |  |   |                                  |  |  |  |              |
| 1,693,896,872                                | 4,869,410,139 | 169,389,997       | 8,364,143,087  | 12,158,814   | 7,680,014,501   | 22,776,854,596                   |  |  |  |              |
| -  | -             | -                 | (846,623,406)  | -  | -   | (846,623,406)                    |  |  |  |              |
| -  | -             | -                 | 779,228,240    | -  | -   | 779,228,240                      |  |  |  |              |
| -  | -             | -                 | (5,662,662)    | 1,114,091,545                                      | (66,194,105)  | 1,042,234,778                    |  |  |  |              |
| -  | -             | -                 | 773,565,578    | 1,114,091,545                                      | (66,194,105)  | 1,821,463,018                    |  |  |  |              |
| 1,693,896,872                                | 4,869,410,139 | 169,389,997       | 8,291,085,259  | 8,781,947,232                                      | (54,035,291)  | 23,751,694,208                   |  |  |  |              |
|  |               |                   |                |  |   |                                  |  |  |  |              |
| 1,693,896,872                                | 4,869,410,139 | 169,389,997       | 8,291,085,259  | 8,781,947,232                                      | (54,035,291)  | 23,751,694,208                   |  |  |  |              |
| -  | -             | -                 | (761,994,506)  | -  | -   | (761,994,506)                    |  |  |  |              |
| -  | -             | -                 | 1,240,039,949  | -  | -   | 1,240,039,949                    |  |  |  |              |
| -  | -             | -                 | -              | (140,869,640)                                      | (135,401,970)   | (276,271,610)                    |  |  |  |              |
| -  | -             | -                 | 1,240,039,949  | (140,869,640)                                      | (135,401,970)   | 963,768,339                      |  |  |  |              |
| 1,693,896,872                                | 4,869,410,139 | 169,389,997       | 8,769,130,702  | 8,641,077,592                                      | (189,437,261)   | 23,953,468,041                   |  |  |  |              |

The accompanying notes are an integral part of the financial statements.

**CH. Karnchang Public Company Limited and its subsidiaries**

**Cash flow statement**

**For the year ended 31 December 2018**

(Unit: Baht)

|  | <b>Consolidated financial statements</b> |                      | <b>Separate financial statements</b> |                      |
|--|--|----------------------|--------------------------------------|----------------------|
|  | <u>2018</u>                              | <u>2017</u>          | <u>2018</u>                          | <u>2017</u>          |
| <b>Cash flows from operating activities</b>  |  |                      |                                      |                      |
| Profit before tax  | 2,625,182,026                            | 1,941,623,240        | 1,378,894,346                        | 845,192,173          |
| Adjustments to reconcile profit before tax to net cash provided by (paid from) operating activities: |  |                      |                                      |                      |
| Depreciation and amortisation  | 705,524,270                              | 993,351,176          | 481,179,597                          | 421,079,631          |
| Reversal of allowance for impairment loss of investment properties                                   | -  | (13,735,685)         | -                                    | -                    |
| Withholding tax deducted at source written off   | 35,721                                   | 5,374,659            | 35,721                               | 5,374,659            |
| Dividend income  | (464,714,590)                            | (464,637,240)        | (1,141,146,626)                      | (1,174,708,388)      |
| Gain on sales of current investments   | (8,192,580)                              | (11,079,519)         | (7,913,289)                          | (11,079,519)         |
| Gain on sales of investments in subsidiary and associated companies                                  | (259,988,786)                            | (303,144,371)        | (240,160,000)                        | (178,155,608)        |
| Allowance for doubtful accounts  | -  | 283,913,264          | -                                    | 283,913,264          |
| Loss (gain) on sales/written off of plant and equipment  | 272,814,688                              | (16,688,884)         | (19,002,575)                         | (36,521,453)         |
| Transfer cost of construction services to building and equipment                                     | -  | (111,191,788)        | -                                    | (111,191,788)        |
| Unrealised loss (gain) on exchange   | (4,221,402)                              | 25,802,860           | (1,314,654)                          | (817,324)            |
| Loss (gain) from foreign exchange contracts  | 4,091,541                                | 1,452,805            | 4,091,541                            | (3,877,337)          |
| Unrealised gain on changes in value of investments in marketable securities                          | (1,056,784)                              | (1,909,011)          | (860,250)                            | (486,000)            |
| Amortisation of deferred front end fee and deferred debenture issuing cost                           | 12,806,409                               | 36,946,511           | 11,164,985                           | 13,516,428           |
| Share of profit from investments in associated companies   | (1,657,629,585)                          | (822,928,521)        | -                                    | -                    |
| Provision for long-term employee benefits  | 232,549,261                              | 175,117,030          | 154,837,760                          | 99,996,175           |
| Interest expenses  | 1,226,488,916                            | 1,343,704,217        | 1,191,355,351                        | 1,255,847,439        |
| Profit from operating activities before changes in operating assets and liabilities                  | 2,683,689,105                            | 3,061,970,743        | 1,811,161,907                        | 1,408,082,352        |
| Operating assets (increase) decrease   |  |                      |                                      |                      |
| Trade and other receivables  | (1,908,367,992)                          | 1,244,471,941        | (2,066,970,575)                      | (566,663,942)        |
| Unbilled receivables   | 1,524,558,150                            | (1,825,994,963)      | 997,361,104                          | (1,379,472,795)      |
| Construction in progress and construction supplies   | 1,052,184,962                            | (585,485,965)        | 610,154,091                          | (208,070,746)        |
| Advance payment to subcontractors  | 54,761,720                               | 1,637,530,688        | 200,384,929                          | 440,644,312          |
| Other current assets   | 182,134,060                              | (271,338,350)        | 174,614,353                          | (274,417,747)        |
| Advances for future projects   | (85,583,743)                             | 55,537,761           | (85,583,743)                         | 55,537,761           |
| Other non-current assets   | (28,164,911)                             | (44,919,529)         | (26,791,927)                         | (38,948,959)         |
| Operating liabilities increase (decrease)  |  |                      |                                      |                      |
| Trade and other payables   | 1,412,740,206                            | (2,369,144,289)      | 2,044,332,419                        | (1,859,356,126)      |
| Advances received from employers and construction revenue received in advance                        | 3,320,043,302                            | 3,102,822,908        | 892,729,694                          | 3,829,143,257        |
| Retention for construction   | (176,326,557)                            | (28,382,300)         | (86,474,593)                         | (49,542,803)         |
| Other current liabilities  | 147,448,492                              | 13,827,357           | 169,458,014                          | 44,557,451           |
| Cash paid for long-term employee benefits  | (94,277,430)                             | (39,229,545)         | (13,203,550)                         | (13,019,350)         |
| Cash flows from operating activities   | 8,084,839,364                            | 3,951,666,457        | 4,621,172,123                        | 1,388,472,665        |
| Cash paid for interest expenses  | (1,198,794,732)                          | (1,363,536,741)      | (1,163,661,168)                      | (1,275,507,795)      |
| Cash refund (paid for) corporate income tax  | 278,301,121                              | (369,361,486)        | 280,512,387                          | (313,944,514)        |
| <b>Net cash flows from (used in) operating activities</b>  | <b>7,164,345,753</b>                     | <b>2,218,768,230</b> | <b>3,738,023,342</b>                 | <b>(200,979,644)</b> |

The accompanying notes are an integral part of the financial statements.



CH. Karnchang Public Company Limited and its subsidiaries

Cash flow statement (continued)

For the year ended 31 December 2018

(Unit: Baht)

|  | Consolidated financial statements |                        | Separate financial statements |                        |
|--|-----------------------------------|------------------------|-------------------------------|------------------------|
|  | 2018                              | 2017                   | 2018                          | 2017                   |
| <b>Cash flows from investing activities</b>  |                                   |                        |                               |                        |
| Decrease in restricted bank deposits   | 221,213                           | 16,138,724             | 221,213                       | 16,161,945             |
| Cash payment for purchase of current investments                                   | (5,432,000,000)                   | (4,489,718,647)        | (5,250,000,000)               | (4,500,000,000)        |
| Cash receipt from sales of current investments                                     | 7,265,367,611                     | 3,424,105,066          | 7,101,776,742                 | 3,424,105,066          |
| Decrease (increase) in short-term loans to related parties and interest receivable | (198,515,781)                     | (69,379,945)           | 2,493,775,033                 | 1,484,314,556          |
| Increase in long-term loans to associated company                                  | (1,126,800,000)                   | (1,132,530,000)        | (1,126,800,000)               | (1,132,530,000)        |
| Decrease in long-term loans to related company                                     | 2,700,000                         | 2,400,000              | 2,700,000                     | 2,400,000              |
| Dividend from subsidiary, associated and related companies                         | 1,131,538,859                     | 1,158,107,582          | 1,141,146,626                 | 1,174,708,388          |
| Net cash receipt from sales of investments in subsidiary                           | -                                 | 85,628,458             | -                             | 90,000,000             |
| Increase in investments in subsidiary  | -                                 | -                      | (55,000,000)                  | -                      |
| Cash receipt from sales of investments in associated companies                     | 413,800,000                       | 414,154,808            | 413,800,000                   | 414,154,808            |
| Increase in investments in associated companies                                    | (1,424,685,990)                   | (281,697,719)          | (1,404,885,990)               | (281,497,719)          |
| Decrease (increase) in other long-term investments                                 | -                                 | (16,250,000)           | -                             | 5,000,000              |
| Increase in property, plant and equipment  | (2,548,395,469)                   | (911,378,710)          | (2,538,804,828)               | (852,158,968)          |
| Increase in intangible assets  | (6,385,296)                       | (1,703,630)            | (6,385,296)                   | (1,203,630)            |
| Proceeds from sales of property, plant and equipment                               | 46,621,249                        | 124,133,007            | 46,572,822                    | 77,471,240             |
| <b>Net cash flows from (used in) investing activities</b>                          | <b>(1,876,533,604)</b>            | <b>(1,677,991,006)</b> | <b>818,116,322</b>            | <b>(79,074,314)</b>    |
| <b>Cash flows from financing activities</b>  |                                   |                        |                               |                        |
| Decrease in bank overdrafts and short-term loans from financial institutions       | (1,967,181,572)                   | (1,223,441,446)        | (1,360,265,738)               | (197,991,086)          |
| Cash receipt from long-term loans  | -                                 | 1,451,420,561          | -                             | 1,451,420,561          |
| Repayment of long-term loans   | (1,695,370,000)                   | (4,498,369,493)        | (1,695,370,000)               | (3,839,197,716)        |
| Cash receipt from issuance of debentures   | 7,044,865,000                     | 8,992,500,000          | 7,044,865,000                 | 8,992,500,000          |
| Repayment of debentures  | (6,000,000,000)                   | (9,000,000,000)        | (6,000,000,000)               | (9,000,000,000)        |
| Proceeds from increase share capital of the subsidiary                             | 45,000,000                        | -                      | -                             | -                      |
| Dividend payment   | (761,994,506)                     | (846,623,406)          | (761,994,506)                 | (846,623,406)          |
| Dividend payment of subsidiary   | (22,500,000)                      | (27,220,000)           | -                             | -                      |
| <b>Net cash flows used in financing activities</b>                                 | <b>(3,357,181,078)</b>            | <b>(5,151,733,784)</b> | <b>(2,772,765,244)</b>        | <b>(3,439,891,647)</b> |
| <b>Effect of exchange rate changes on cash and cash equivalents</b>                | <b>(69,902,691)</b>               | <b>(106,121,387)</b>   | <b>(120,178,976)</b>          | <b>(1,104,740)</b>     |
| <b>Net increase (decrease) in cash and cash equivalents</b>                        | <b>1,860,728,380</b>              | <b>(4,717,077,947)</b> | <b>1,663,195,444</b>          | <b>(3,721,050,345)</b> |
| Cash and cash equivalents at beginning of year                                     | 6,689,094,815                     | 11,406,172,762         | 4,435,435,232                 | 8,156,485,577          |
| <b>Cash and cash equivalents at end of year</b>                                    | <b>8,549,823,195</b>              | <b>6,689,094,815</b>   | <b>6,098,630,676</b>          | <b>4,435,435,232</b>   |
|  | -                                 | -                      | -                             | -                      |
| <b>Supplemental disclosures of cash flows information</b>                          |                                   |                        |                               |                        |
| Non-cash transactions  |                                   |                        |                               |                        |
| Write off trade receivable and long-term loans from the accounts                   | -                                 | 13,618,880,612         | -                             | 13,618,880,612         |
| Transfer equipment to construction supplies  | -                                 | 15,007,970             | -                             | 15,007,970             |
| Account receivable from sales of property, plant and equipment                     | 4,541,584                         | -                      | -                             | -                      |
| Increase in property, plant and equipment from other payables                      | -                                 | 36,052,557             | -                             | 38,814,560             |
| Increase in intangible assets from other payables                                  | -                                 | 3,487,290              | -                             | 3,487,290              |

The accompanying notes are an integral part of the financial statements.

## CH. Karnchang Public Company Limited and its subsidiaries

### Notes to consolidated financial statements

For the year ended 31 December 2018

#### 1. General information

CH. Karnchang Public Company Limited (“the Company”) is a public company incorporated and domiciled in Thailand. The major shareholder of the Company is Mahasiri Siam Company Limited, which was also incorporated in Thailand. The Company is principally engaged in the provision of construction services. The registered office of the Company is at 587 Suthisarn Road, Khwaeng Ratchadapisek, Khet Dindaeng, Bangkok.

#### 2. Basis of preparation

- 2.1 The financial statements have been prepared in accordance with Thai Financial Reporting Standards enunciated under the Accounting Professions Act B.E. 2547 and their presentation has been made in compliance with the stipulations of the Notification of the Department of Business Development dated 11 October 2016, issued under the Accounting Act B.E. 2543.

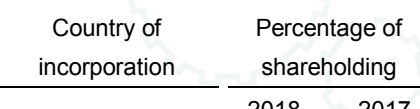
The financial statements in Thai language are the official statutory financial statements of the Company. The financial statements in English language have been translated from the Thai language financial statements.

The financial statements have been prepared on a historical cost basis except where otherwise disclosed in the accounting policies.

#### 2.2 Basis of consolidation

- a) The consolidated financial statements include the financial statements of CH. Karnchang Public Company Limited (“the Company”) and its subsidiaries (“the subsidiaries”) as follows:

| Name of entity   | Nature of business | Country of incorporation             | Percentage of shareholding |         |
|--|--------------------|--------------------------------------|----------------------------|---------|
|  |                    |                                      | 2018                       | 2017    |
|  |                    |                                      | Percent                    | Percent |
| <b><u>Investments in subsidiaries (held by the Company)</u></b>  |                    |                                      |                            |         |
| CH. Karnchang Realestate Company Limited<br>(included equity interest in Prompratarn Construction Company Limited* and Prasertwit Construction Company Limited*) | Investment company | Thailand                             | 99.00                      | 99.00   |
| CH. Karnchang-Tokyu Construction Company Limited   | Construction       | Thailand                             | 55.00                      | 55.00   |
| CH. Karnchang (Lao) Company Limited  | Construction       | The Lao People’s Democratic Republic | 100.00                     | 100.00  |



| Name of entity   | Nature of business                    | Country of incorporation | Percentage of shareholding |             |
|--|---------------------------------------|--------------------------|----------------------------|-------------|
|  |                                       |                          | <u>2018</u>                | <u>2017</u> |
|  |                                       |                          | Percent                    | Percent     |
| <b><u>Investments in subsidiaries (held by subsidiary company)</u></b> |                                       |                          |                            |             |
| Prompratarn Construction Company Limited*                              | Construction and                      | Thailand                 | 98.01                      | 98.01       |
| (99.00 percent held by CH. Karnchang Real estate Company Limited)      | construction equipment rental service |                          |                            |             |
| Prasertwit Construction Company Limited*                               | Construction and                      | Thailand                 | 98.01                      | 98.01       |
| (99.00 percent held by CH. Karnchang Real estate Company Limited)      | construction equipment rental service |                          |                            |             |

(\* Convert Limited Partnership into Company Limited on 4 October 2018)

- b) The Company is deemed to have control over an investee or subsidiaries if it has rights, or is exposed, to variable returns from its involvement with the investee, and it has the ability to direct the activities that affect the amount of its returns.
- c) Subsidiaries are fully consolidated as from being the date on which the Company obtains control, and continue to be consolidated until the date when such control ceases.
- d) The financial statements of the subsidiaries are prepared using the same significant accounting policies as the Company.
- e) Material balances and transactions between the Company and its subsidiaries have been eliminated from the consolidated financial statements.
- f) Non-controlling interests represent the portion of profit or loss and net assets of the subsidiaries that are not held by the Company and are presented separately in the consolidated profit or loss and within equity in the consolidated statement of financial position.

2.3 The separate financial statements present investments in subsidiaries and associates under the cost method.

2.4 The Company has joint arrangements which assessed as joint operations between the Company and other joint operators. The Company recognises its shares of assets, liabilities, revenue and expenses of the joint operation, in proportion to its interest, to the separate financial statements, the details as follows:

| Name of entity   | Nature of Business | Country of incorporation | Interest in joint operations |                        |
|--|--------------------|--------------------------|------------------------------|------------------------|
|  |                    |                          | <u>2018</u><br>Percent       | <u>2017</u><br>Percent |
| Joint Venture CH. Karnchang Public Company Limited, Bilfinger Berger AG, Tokyu Construction Company Limited and CH. Karnchang-Tokyu Construction Company Limited (hereinafter called "Joint Venture BBCT") | Construction       |                          |                              |                        |
| - Second Stage Expressway Project<br>Sector B Route Phayathai - Bangkhlo   |                    | Thailand                 | 99.97                        | 99.97                  |
| - Second Stage Expressway Project<br>Sector C+ Route Chaeng Wattana - Bang Phun & Bang Sai   |                    | Thailand                 | 99.97                        | 99.97                  |
| - Second Stage Expressway Project<br>Sector D Route Asoke - Srinakarin   |                    | Thailand                 | 99.97                        | 99.97                  |
| - Second Stage Expressway Project<br>Sector C1A Route Ngam Wong Wan - Chaeng Wattana   |                    | Thailand                 | 99.97                        | 99.97                  |
| Joint Venture BBCT Bilfinger Berger AG, CH. Karnchang Public Company Limited and Dyckerhoff & Widmann AG (hereinafter called "Joint Venture BBCT")   | Construction       | Thailand                 | 35.00                        | 35.00                  |
| Joint Venture CKET   | Project management | Thailand                 | 99.99                        | 99.99                  |
| CKTC Joint Venture   | Construction       | Thailand                 | 70.00                        | 70.00                  |
| CH. Karnchang-Krungthon Engineers Joint Venture  | Construction       | Thailand                 | 60.00                        | 60.00                  |
| Joint Venture CKCH   | Construction       | Thailand                 | 70.00                        | 70.00                  |
| CKST Joint Venture   | Construction       | Thailand                 | 60.00                        | 60.00                  |

### 3. New financial reporting standards

#### (a) Financial reporting standards that became effective in the current year

During the year, the Company and its subsidiaries have adopted the revised financial reporting standards and interpretations (revised 2017) which are effective for fiscal years beginning on or after 1 January 2018. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes and clarifications directed towards disclosures in the notes to financial statements. The adoption of these financial reporting standards does not have any significant impact on the Company and its subsidiaries' financial statements.

#### (b) Financial reporting standards that will become effective for fiscal years beginning on or after 1 January 2019

The Federation of Accounting Professions issued a number of revised and new financial reporting standards and interpretations (revised 2018) which are effective for fiscal years beginning on or after 1 January 2019. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The management of the Company and its subsidiaries believe that most of the revised financial reporting standards will not have any significant impact on the financial statements when they are initially applied. However, the new standard involves changes to key principles, as summarised below.

#### **TFRS 15 Revenue from Contracts with Customers**

TFRS 15 supersedes the following accounting standards together with related Interpretations.

|                         |  |
|-------------------------|--|
| TAS 11 (revised 2017)   | Construction contracts                                       |
| TAS 18 (revised 2017)   | Revenue  |
| TSIC 31 (revised 2017)  | Revenue - Barter Transactions Involving Advertising Services |
| TFRIC 13 (revised 2017) | Customer Loyalty Programmes                                  |
| TFRIC 15 (revised 2017) | Agreements for the Construction of Real Estate               |
| TFRIC 18 (revised 2017) | Transfers of Assets from Customers                           |

Entities are to apply this standard to all contracts with customers unless those contracts fall within the scope of other standards. The standard establishes a five-step model to account for revenue arising from contracts with customers, with revenue being recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The standard requires entities to exercise judgement, taking into consideration all of the relevant facts and circumstances when applying each step of the model.

The management of the Company and its subsidiaries believe that this standard will not have any significant impact on the financial statements when it is initially applied.

**(c) Financial reporting standards related to financial instruments that will become effective for fiscal years beginning on or after 1 January 2020**

During the current year, the Federation of Accounting Professions issued a set of TFRSs related to financial instruments, which consists of five accounting standards and interpretations, as follows:

Financial reporting standards:

|        |                                    |
|--------|------------------------------------|
| TFRS 7 | Financial Instruments: Disclosures |
| TFRS 9 | Financial Instruments              |

Accounting standard:

|        |                                     |
|--------|-------------------------------------|
| TAS 32 | Financial Instruments: Presentation |
|--------|-------------------------------------|

Financial Reporting Standard Interpretations:

|          |   |
|----------|---|
| TFRIC 16 | Hedges of a Net Investment in a Foreign Operation           |
| TFRIC 19 | Extinguishing Financial Liabilities with Equity Instruments |

These TFRSs related to financial instruments make stipulations relating to the classification of financial instruments and their measurement at fair value or amortised cost (taking into account the type of instrument, the characteristics of the contractual cash flows and the Company's business model), calculation of impairment using the expected credit loss method, and hedge accounting. These include stipulations regarding the presentation and disclosure of financial instruments. When the TFRSs related to financial instruments are effective, some accounting standards, interpretations and guidance which are currently effective will be cancelled.

The management of the Company and its subsidiaries is currently evaluating the impact of these standards to the financial statements in the year when they are adopted.

## **4. Significant accounting policies**

### **4.1 Revenues and expenses recognition**

#### **a) Revenues from construction services**

The Company and its subsidiaries recognised revenues from construction services on a percentage of completion basis. The percentage of completion is measured based on comparison of actual construction costs incurred up to the end of the period and total anticipated construction costs to be incurred to completion. The recognised revenue which is not yet due per the contracts has been presented under the caption of “Unbilled receivables” in the statement of financial position.

Revenues from additional work and other contracted work for which the working period does not exceed one year are recognised on the basis of work done and billed to the customer.

Revenues from moving infrastructure, additional work and other contracted work are recognised on the basis of work done and billed to the customer.

#### **b) Sales of construction materials**

Sales of construction materials are recognised when the significant risks and rewards of ownership of the goods have passed to the buyer. Sales are the invoiced value, excluding value added tax, of goods supplied after deducting discounts and allowances.

#### **c) Interest income**

Interest income is recognised on an accrual basis based on the effective interest rate.

#### **d) Dividends**

Dividends are recognised when the right to receive the dividends is established.

#### **e) Other revenues and expenses**

Other revenues and expenses are recognised on an accrual basis.

Provision for losses on construction projects is made in the accounts in full when the possibility of loss is ascertained.

### **4.2 Cash and cash equivalents**

Cash and cash equivalents consist of cash in hand, cash at banks, and all highly liquid investments with an original maturity of three months or less and not subject to withdrawal restrictions.



### **4.3 Trade accounts receivable**

Trade accounts receivable are stated at the net realisable value. Allowance for doubtful accounts is provided for the estimated losses that may be incurred in collection of receivables. The allowance is generally based on collection experiences and analysis of debt aging.

### **4.4 Unbilled receivables**

Unbilled receivables comprises the costs of materials and labor, subcontractor charges, services and overheads plus the attributable net gains or losses less the amounts already billed to customers.

The excess of the value of a construction contract in progress over the amount billed to the customer is presented as current assets. The excess of the amount billed to a customer over the value of the construction contract in progress is presented as "Construction revenue received in advance" under current liabilities.

### **4.5 Construction in progress and construction supplies**

Inventories and construction supplies are valued at the lower of cost (under the weighted average method) or net realisable value.

Supplies in process for installation and construction in progress are valued at cost.

Construction in progress comprise the costs of materials and labor, subcontractor charges, cost of service and overheads of projects for which contracts are in the process of being executed.

### **4.6 Investments**

- a) Investments in securities held for trading are stated at fair value. Changes in the fair value of these securities are recorded in profit or loss.
- b) Investments in available-for-sale securities are stated at fair value. Changes in the fair value of these securities are recorded as a separate item in other comprehensive income, and will be recorded in profit or loss when the securities are sold.
- c) Investments in debt securities, both due within one year and expected to be held to maturity, are recorded at amortised cost. The premium/discount on debt securities is amortised/accreted by the effective rate method with the amortised/accreted amount presented as an adjustment to the interest income.
- d) Investments in non-marketable equity securities, which the Company and the subsidiary classify as other investments, are stated at cost net of allowance for impairment loss (if any).

- e) Investments in associates are accounted for in the consolidated financial statements using the equity method.
- f) Investments in subsidiaries and associates are accounted for in the separate financial statements using the cost method.

The fair value of marketable securities is based on the latest bid price of the last working day of the year. The fair value of debt instruments is determined based on yield rates quoted by the Thai Bond Market Association. The fair value of unit trusts is determined from their net asset value.

The weighted average method is used for computation of the cost of investments.

On disposal of an investment, the difference between net disposal proceeds and the carrying amount of the investment is recognised in profit or loss.

#### **4.7 Investment properties**

Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are stated at cost less accumulated depreciation and allowance for loss on impairment (if any).

Depreciation of investment properties is calculated by reference to their costs on the straight-line basis over estimated useful lives of 20 years and 35 years. Depreciation of the investment properties is included in determining income. No depreciation is provided on land classified as investment properties.

On disposal of investment properties, the difference between the net disposal proceeds and the carrying amount of the asset is recognised in profit or loss in the year when the asset is derecognised.

#### **4.8 Property, plant and equipment/Depreciation**

Land is stated at cost. Building and equipment are stated at cost less accumulated depreciation and allowance for loss on impairment of assets (if any).

Depreciation of building and equipment is calculated by reference to their costs on the straight-line basis over the following estimated useful lives:

|  |                            |
|--|----------------------------|
| Condominium building                     | 35 years                   |
| Buildings and construction               | 3, 5 to 8, 20 and 30 years |
| Land improvement                         | 5, 20 and 30 years         |
| Building improvements                    | 5 and 10 years             |
| Machinery and equipment                  | 2, 3 and 5 to 15 years     |
| Furniture, fixtures and office equipment | 2 and 5 years              |
| Motor vehicles                           | 5 years                    |

Depreciation is included in determining income.

No depreciation is provided on land and assets under construction.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on disposal of an asset is included in profit or loss when the asset is derecognised.

#### **4.9 Borrowing costs**

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of the respective assets. All other borrowing costs are expensed in the period they are incurred. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

#### **4.10 Intangible assets**

The intangible assets are carried at cost less any accumulated amortisation and any accumulated impairment losses (if any).

Intangible assets with finite lives are amortised on a systematic basis over the economic useful life and tested for impairment whenever there is an indication that the intangible assets may be impaired. The amortisation period and the amortisation method of such intangible assets are reviewed at least at each financial year end. The amortisation expense is charged to profit or loss.

Intangible assets of the Company and its subsidiaries with finite useful lives comprise computer software, and have useful lives of 5, 19 and 20 years.

#### **4.11 Related party transactions**

Related parties comprise individuals or enterprises that control, or are controlled by, the Company, whether directly or indirectly, or which are under common control with the Company.

They also include associated companies, and individuals or enterprises which directly or indirectly own a voting interest in the Company that gives them significant influence over the Company, key management personnel, directors and officers with authority in the planning and direction of the Company's operations.



#### 4.12 Long-term leases

Leases of equipment which transfer substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalised at the lower of the fair value of the leased assets or the present value of the minimum lease payments. The outstanding rental obligations, net of finance charges, are included in other long-term payables, while the interest element is charged to profit or loss over the lease period. The assets acquired under finance leases is depreciated over the useful life of the asset.

Leases of property, plant and equipment which do not transfer substantially all the risks and rewards of ownership are classified as operating leases. Operating lease payments are recognised as an expense in profit or loss on a straight line basis over the lease term.

#### 4.13 Foreign currencies

The consolidated and separate financial statements are presented in Baht, which is also the Company's functional currency. Items of each entity included in the consolidated financial statements are measured using the functional currency of that entity.

Transactions in foreign currencies are translated into Baht at the exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are translated into Baht at the exchange rate ruling at the end of reporting period.

Gains and losses on exchange are included in determining income.

#### 4.14 Impairment of assets

At the end of each reporting period, the Company and its subsidiaries perform impairment reviews in respect of the property, plant and equipment and other intangible assets whenever events or changes in circumstances indicate that an asset may be impaired. An impairment loss is recognised when the recoverable amount of an asset, which is the higher of the asset's fair value less costs to sell and its value in use, is less than the carrying amount.

An impairment loss is recognised in profit or loss.

#### 4.15 Employee benefits

##### ***Short-term employee benefits***

Salaries, wages, bonuses and contributions to the social security fund are recognised as expenses when incurred.

## ***Post-employment benefits***

### ***Defined contribution plans***

The Company, some subsidiaries and their employees have jointly established provident funds. The funds are monthly contributed by employees and by the Company and the subsidiaries. The fund's assets are held in separate trust funds and the Company's and subsidiaries' contributions are recognised as expenses when incurred.

### ***Defined benefit plans***

The Company and its subsidiaries have obligations in respect of the severance payments it must make to employees upon retirement under labor law. The treat these severance payment obligations as a defined benefit plan.

The obligation under the defined benefit plan is determined by a professionally qualified independent actuary based on actuarial techniques, using the projected unit credit method.

Actuarial gains and losses arising from defined benefit plans are recognised immediately in other comprehensive income.

Past service costs are recognised in profit or loss on the earlier of the date of the plan amendment or curtailment and the date that the Company recognises restructuring-related costs.

## **4.16 Provisions**

Provisions are recognised when the Company and its subsidiaries have a present obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

## **4.17 Income tax**

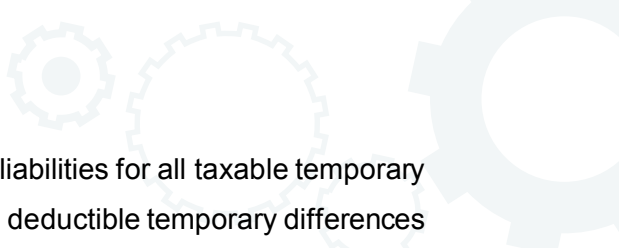
Income tax expense represents the sum of corporate income tax currently payable and deferred tax.

### **Current tax**

Current income tax is provided in the accounts at the amount expected to be paid to the taxation authorities, based on taxable profits determined in accordance with tax legislation.

### **Deferred tax**

Deferred income tax is provided on temporary differences between the tax bases of assets and liabilities and their carrying amounts at the end of each reporting period, using the tax rates enacted at the end of the reporting period.



The Company and its subsidiaries recognise deferred tax liabilities for all taxable temporary differences while they recognise deferred tax assets for all deductible temporary differences and tax losses carried forward to the extent that it is probable that future taxable profit will be available against which such deductible temporary differences and tax losses carried forward can be utilised.

At each reporting date, the Company and its subsidiaries review and reduce the carrying amount of deferred tax assets to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilised.

The Company and its subsidiaries record deferred tax directly to shareholders' equity if the tax relates to items that are recorded directly to shareholders' equity.

#### **4.18 Derivative financial instruments and hedging**

##### **Derivative financial instruments**

The Company, subsidiary and associated companies use derivative financial instruments to manage its risks associated with exchange rate and interest rate, such as foreign exchange contracts and interest rate swap agreements.

Such derivatives are initially recognised and measured at fair value on the date on which the derivative contract is entered into and are subsequently remeasured at fair value, which has been calculated using the quoted market rates, at the end of reporting period. Gains or losses resulting from changes in the fair value of the derivative financial instruments are recognised as financial assets or financial liabilities when the gain or loss occurs. However, where derivatives qualify for hedge accounting, recognition of any resultant gain or loss from changes in the fair value depends on the nature of the item being hedged.

##### **Hedge accounting - Cash flow hedges**

The Company, subsidiary and associated companies apply hedge accounting when the risk that has been hedged can be clearly identified and the effectiveness of the hedge can be measured. Gains or losses arising from changes in the fair value of hedging instruments or derivatives that effectively hedge exposure to fluctuations in cash flows that are either attributable to a particular risk associated with a recognised financial asset or financial liability, or to a highly probable forecast transaction, are recognised directly in other comprehensive income and transferred to be recognised in profit or loss when the hedged cash flow transaction occurs. However, if the hedge instrument is not effective, any gain or loss from a change in the fair value of the derivative financial instrument is recognised immediately to profit or loss.

#### **4.19 Fair value measurement**

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between buyer and seller (market participants) at the measurement date. The Company and its subsidiaries apply a quoted market price in an active market to measure their assets and liabilities that are required to be measured at fair value by relevant financial reporting standards. Except in case of no active market of an identical asset or liability or when a quoted market price is not available, the Company and its subsidiaries measure fair value using valuation technique that are appropriate in the circumstances and maximises the use of relevant observable inputs related to assets and liabilities that are required to be measured at fair value.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy into three levels based on categorise of input to be used in fair value measurement as follows:

- Level 1 - Use of quoted market prices in an active market for such assets or liabilities
- Level 2 - Use of other observable inputs for such assets or liabilities, whether directly or indirectly
- Level 3 - Use of unobservable inputs such as estimates of future cash flows

At the end of each reporting period, the Company and its subsidiaries determine whether transfers have occurred between levels within the fair value hierarchy for assets and liabilities held at the end of the reporting period that are measured at fair value on a recurring basis.

#### **5. Significant accounting judgements and estimates**

The preparation of financial statements in conformity with financial reporting standards at times requires management to make subjective judgements and estimates regarding matters that are inherently uncertain. These judgements and estimates affect reported amounts and disclosures; and actual results could differ from these estimates. Significant judgements and estimates are as follows:

##### **Allowance for doubtful accounts**

In determining an allowance for doubtful accounts, the management needs to make judgement and estimates based upon, among other things, past collection history, aging profile of outstanding debts and the prevailing economic condition.

##### **Impairment of equity investments**

The Company and the subsidiary treat investments as impaired when there has been a significant or prolonged decline in the fair value below their cost or where other objective evidence of impairment exists. The determination of what is “significant” or “prolonged” requires judgement of the management.





## **Joint arrangements**

Management applied judgement to determine the type of joint arrangement, based on consideration of the rights and obligations arising from the arrangement. On this basis, the management of the Company determined that the Company has 7 investments in joint venture agreements that are joint operations (between the Company and other joint operators) in accordance with TFRS 11.

## **Property, plant and equipment/Depreciation**

In determining depreciation of plant and equipment, the managements are required to make estimates of the useful lives and residual values of the Company's and its subsidiaries' plant and equipment and to review estimate useful lives and residual values when there are any changes.

In addition, the managements are required to review property, plant and equipment for impairment on a periodical basis and record impairment losses in the period when it is determined that their recoverable amount is lower than the carrying amount. This requires judgements regarding forecast of future revenues and expenses relating to the assets subject to the review.

## **Estimated construction project costs**

The Company and its subsidiaries estimate costs of construction projects based on details of the construction work, taking into account the volume and value of construction materials to be used in the project, labour costs and other miscellaneous costs to be incurred to completion of service, taking into account the direction of the movement in these costs. Estimates are reviewed regularly or whenever actual costs differ significantly from the figures used in the original estimates.

## **Provision for losses on construction projects**

Management applied judgement in estimating the loss they expect to be realised on each construction project, based on estimates of anticipated costs that take into account the progress of the project and actual costs incurred to date, together with fluctuations in costs of construction materials, labour and the current situation.

## **Deferred tax assets**

Deferred tax assets are recognised for deductible temporary differences and unused tax losses to the extent that it is probable that taxable profit will be available against which the temporary differences and losses can be utilised. Significant management judgement is required to determine the amount of deferred tax assets that can be recognised, based upon the likely timing and level of estimate future taxable profits.

## 6. Related party transactions

During the years, the Company and its subsidiaries had significant business transactions with related parties. Such transactions, which are summarised below, arose in the ordinary course of business and were concluded on commercial terms and bases agreed upon between the Company and those related parties.

(Unit: Million Baht)

|   | Consolidated<br>financial statements |             | Separate<br>financial statements |             | Transfer pricing policy  |
|---|--------------------------------------|-------------|----------------------------------|-------------|--|
|   | <u>2018</u>                          | <u>2017</u> | <u>2018</u>                      | <u>2017</u> |  |
| <b><u>Transactions with subsidiaries</u></b>            |                                      |             |                                  |             |  |
| (eliminated from the consolidated financial statements) |                                      |             |                                  |             |  |
| Project management income                               | -                                    | -           | -                                | 1           | Based on contracts   |
| Rental and transportation income                        | -                                    | -           | 37                               | 114         | Close to service fee charged to third parties  |
| Space rental and service income                         | -                                    | -           | 7                                | 7           | Based on contracts   |
| Interest income   | -                                    | -           | 79                               | 127         | Interest rate of MLR - 2%<br>(2017: MLR - 1.25% and MLR - 2%)                          |
| Dividend income   | -                                    | -           | 28                               | 33          | As declared  |
| Other income  | -                                    | -           | 31                               | 27          | Based on contracts and cost plus margin  |
| Cost of construction materials and construction work    | -                                    | -           | 377                              | 352         | Close to prices charged by third parties   |
| <b><u>Transactions with associated companies</u></b>    |                                      |             |                                  |             |  |
| Revenues from construction services                     | 14,014                               | 21,076      | 7,732                            | 6,824       | Based on construction contracts  |
| Rental and transportation income                        | 1                                    | 1           | 1                                | 1           | Based on contracts   |
| Space rental and service income                         | 16                                   | 14          | 16                               | 14          | Based on contracts   |
| Interest income   | 772                                  | 693         | 762                              | 692         | Interest rates of 5%, MLR + 0.25% and MLR - 1%<br>(2017: 5%, MLR + 0.25% and MLR + 1%) |
| Dividend income   | -                                    | -           | 649                              | 677         | As declared  |
| <b><u>Transactions with related parties</u></b>         |                                      |             |                                  |             |  |
| Revenues from construction services                     | 93                                   | 709         | 93                               | 709         | Based on construction contracts  |
| Project management income                               | 203                                  | 148         | 203                              | 148         | Based on contracts and agreed between the parties                                      |
| Rental and transportation income                        | 7                                    | 6           | 7                                | 6           | Close to service fee charged to third parties  |
| Space rental and service income                         | 15                                   | 15          | 15                               | 15          | Based on contracts   |
| Interest income   | 3                                    | 1           | 3                                | -           | Interest rates of 3.1% and MLR - 0.01% (2017: MLR - 0.01%)                             |
| Dividends income  | 464                                  | 464         | 464                              | 464         | As declared  |
| Other income  | 4                                    | 13          | 4                                | 13          | Based on contracts and cost plus margin  |
| Cost of construction materials and construction work    | 211                                  | 195         | 211                              | 195         | Close to prices charged by third parties and<br>based on contracts                     |
| Administrative expenses                                 | 1                                    | 1           | 1                                | 1           | Agreed between the parties   |
| Dividend payment  | 23                                   | 27          | -                                | -           | As declared  |
| Sale of equipment                                       | 20                                   | 30          | 20                               | 30          | Agreed between the parties   |
| Purchase of equipment                                   | 2                                    | -           | 2                                | -           | Agreed between the parties   |

The balances of the accounts as at 31 December 2018 and 2017 between the Company and those related parties are as follows:

**a) Trade accounts receivable - related parties (Note 9)**

(Unit: Thousand Baht)

|   | Consolidated<br>financial statements |                         | Separate<br>financial statements |                         |
|---|--------------------------------------|-------------------------|----------------------------------|-------------------------|
|   | <u>2018</u>                          | <u>2017</u>             | <u>2018</u>                      | <u>2017</u>             |
| <b>Construction contract receivables</b>                            |                                      |                         |                                  |                         |
| <b>Subsidiary</b>   | -                                    | -                       | 285,522                          | 285,522                 |
| <b>Associated companies</b>   |                                      |                         |                                  |                         |
| - Bangkok Expressway and Metro Public Company Limited               | 725,739                              | 1,238,453               | 725,739                          | 1,238,453               |
| - Xayaburi Power Company Limited                                    | 665,228                              | 914,174                 | -                                | -                       |
| - Bangpa-in Cogeneration Limited                                    | -                                    | 8,731                   | -                                | 8,731                   |
| - Nam Ngum 2 Power Company Limited                                  | -                                    | 48,917                  | -                                | -                       |
|   | <u>1,390,967</u>                     | <u>2,210,275</u>        | <u>725,739</u>                   | <u>1,247,184</u>        |
| <b>Related parties (common directors)</b>                           |                                      |                         |                                  |                         |
| - TTW Public Company Limited  | 6,089                                | -                       | 6,089                            | -                       |
| - Silasaicrete Company Limited                                      | -                                    | 58                      | -                                | -                       |
| (During the year, convert Limited Partnership into Company Limited) | <u>6,089</u>                         | <u>58</u>               | <u>6,089</u>                     | <u>-</u>                |
| <b>Total construction contract receivables</b>                      | <b><u>1,397,056</u></b>              | <b><u>2,210,333</u></b> | <b><u>1,017,350</u></b>          | <b><u>1,532,706</u></b> |
| <b>Retention as per contracts</b>                                   |                                      |                         |                                  |                         |
| <b>Joint arrangement</b>  | 408                                  | 408                     | 408                              | 408                     |
| <b>Associated companies</b>   |                                      |                         |                                  |                         |
| - Bangkok Expressway and Metro Public Company Limited               | 16,781                               | 2,874                   | 16,781                           | 2,874                   |
| - Northern Bangkok Expressway Company Limited                       | -                                    | 1,279                   | -                                | 1,279                   |
|   | <u>16,781</u>                        | <u>4,153</u>            | <u>16,781</u>                    | <u>4,153</u>            |
| <b>Related parties (common directors)</b>                           |                                      |                         |                                  |                         |
| - Bangpa-in Land Development Company Limited                        | 19,417                               | 28,417                  | 19,417                           | 28,417                  |
| - TTW Public Company Limited  | 2,429                                | -                       | 2,429                            | -                       |
|   | <u>21,846</u>                        | <u>28,417</u>           | <u>21,846</u>                    | <u>28,417</u>           |
| <b>Total retention as per contracts</b>                             | <b><u>39,035</u></b>                 | <b><u>32,978</u></b>    | <b><u>39,035</u></b>             | <b><u>32,978</u></b>    |
| <b>Total trade accounts receivable - related parties</b>            | <b><u>1,436,091</u></b>              | <b><u>2,243,311</u></b> | <b><u>1,056,385</u></b>          | <b><u>1,565,684</u></b> |

**b) Other receivables - related parties (Note 9)**

|  | (Unit: Thousand Baht) |                |                      |                  |
|--|-----------------------|----------------|----------------------|------------------|
|  | Consolidated          |                | Separate             |                  |
|  | financial statements  |                | financial statements |                  |
|  | <u>2018</u>           | <u>2017</u>    | <u>2018</u>          | <u>2017</u>      |
| <b>Receivables from sales of construction materials and others</b> |                       |                |                      |                  |
| <b>Subsidiaries</b>  | -                     | -              | 1,900,301            | 2,755,806        |
| <b>Joint arrangements</b>  | 241,802               | 186,488        | 241,467              | 186,488          |
| <b>Associated companies</b>  |                       |                |                      |                  |
| - Xayaburi Power Company Limited                                   | 1,068,362             | 20,783         | 55                   | 102              |
| - Other associated companies                                       | 454                   | 1,365          | 454                  | 1,365            |
|  | <u>1,068,816</u>      | <u>22,148</u>  | <u>509</u>           | <u>1,467</u>     |
| <b>Related parties (common directors)</b>                          |                       |                |                      |                  |
| - Expert Transport Company Limited                                 | 11,466                | 5,772          | 11,466               | 5,772            |
| - Other related companies and related parties                      | 550                   | 558            | 550                  | 558              |
|  | <u>12,016</u>         | <u>6,330</u>   | <u>12,016</u>        | <u>6,330</u>     |
| <b>Other joint operator</b>  |                       |                |                      |                  |
| - Bilfinger SE (formerly known as "Bilfinger Berger AG")           | <u>8,108</u>          | <u>8,108</u>   | <u>8,108</u>         | <u>8,108</u>     |
| <b>Total other receivables - related parties</b>                   | <u>1,330,742</u>      | <u>223,074</u> | <u>2,162,401</u>     | <u>2,958,199</u> |

**c) Advance payment to subcontractor - related party**

|                   | (Unit: Thousand Baht) |             |                      |                |
|-------------------|-----------------------|-------------|----------------------|----------------|
|                   | Consolidated          |             | Separate             |                |
|                   | financial statements  |             | financial statements |                |
|                   | <u>2018</u>           | <u>2017</u> | <u>2018</u>          | <u>2017</u>    |
| <b>Subsidiary</b> | <u>-</u>              | <u>-</u>    | <u>98,030</u>        | <u>147,685</u> |

#### d) Short-term loans to related parties and interest receivable

As at 31 December 2018 and 2017, the balances of short-term loans to related parties and interest receivable between the Company and those related parties and the movement are as follows:

(Unit: Thousand Baht)

|  |                       | Consolidated financial statements    |                                |                                |                                      |
|--|-----------------------|--------------------------------------|--------------------------------|--------------------------------|--------------------------------------|
| Loans to   | Related by            | Balance as at<br>31 December<br>2017 | Increase<br>during<br>the year | Decrease<br>during<br>the year | Balance as at<br>31 December<br>2018 |
| - Joint Venture BBCD   | Joint operation       | 283,913                              | -                              | -                              | 283,913                              |
| - Joint Venture CKCH   | Joint operation       | -                                    | 240,061                        | -                              | 240,061                              |
| - Kamala Senior Living<br>Company Limited                              | Associated<br>company | 69,380                               | 29,286                         | (70,831)                       | 27,835                               |
|  |                       | 353,293                              | 269,347                        | (70,831)                       | 551,809                              |
| Less: Allowance for doubtful account                                   |                       | (283,913)                            | -                              | -                              | (283,913)                            |
| Less: Allowance for doubtful account -<br>associated company (Note 16) |                       | (125)                                | -                              | 125                            | -                                    |
|  |                       | 69,255                               | 269,347                        | (70,706)                       | 267,896                              |

(Unit: Thousand Baht)

|  |                 | Separate financial statements        |                             |                             |                                      |
|--|-----------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| Loans to                                 | Related by      | Balance as at<br>31 December<br>2017 | Increase<br>during the year | Decrease<br>during the year | Balance as at<br>31 December<br>2018 |
| - CH. Karnchang (Lao)<br>Company Limited | Subsidiary      | 2,733,836                            | 78,898                      | (2,812,734)                 | -                                    |
| - Joint Venture BBCD                     | Joint operation | 3,726,253                            | -                           | -                           | 3,726,253                            |
| - Joint Venture CKCH                     | Joint operation | -                                    | 240,061                     | -                           | 240,061                              |
|  |                 | 6,460,089                            | 318,959                     | (2,812,734)                 | 3,966,314                            |
| Less: Allowance for doubtful accounts    |                 | (3,726,253)                          |                             |                             | (3,726,253)                          |
|  |                 | 2,733,836                            |                             |                             | 240,061                              |

Loans to related parties are subject to interest at MLR minus stipulated margin per annum, 3.1 and 5 percent per annum and are due at call.

Loans to Joint Venture BBCD are granted with a condition to waive interest under a joint resolution between the Company and Bilfinger SE (formerly known as “Bilfinger Berger AG”), which are joint operators in this joint venture, but they retain the right to claim such interest if the joint venture receives compensation for additional costs from the Expressway Authority of Thailand. The loan principal and interest are to be paid on the earlier of (a) the date the Joint Venture BBCD receives compensation for additional costs from the Expressway Authority of Thailand and (b) the date when the Company calls the loan.

**e) Long-term loans to associated company and interest receivable**

As at 31 December 2018 and 2017, the balances of long-term loans to associated company and interest receivable between the Company and the associated company and the movement are as follows:

(Unit: Thousand Baht)

|                                  | Consolidated and separate financial statements |                                |                                |                                      |
|----------------------------------|--|--------------------------------|--------------------------------|--------------------------------------|
|                                  | Balance as at<br>31 December<br>2017           | Increase<br>during<br>the year | Decrease<br>during<br>the year | Balance as at<br>31 December<br>2018 |
| <b>Loans:</b>                    |  |                                |                                |                                      |
| - Xayaburi Power Company Limited | 11,187,960                                     | 1,126,800                      | -                              | 12,314,760                           |
| <b>Interest receivable:</b>      |  |                                |                                |                                      |
| - Xayaburi Power Company Limited | 995,858  | 762,275                        | -                              | 1,758,133                            |
|                                  | <u>12,183,818</u>                              | <u>1,889,075</u>               | <u>-</u>                       | <u>14,072,893</u>                    |

On 16 May 2016, a meeting of the Company’s Board of Directors passed a resolution to provide financial support to Xayaburi Power Company Limited (an associated company of CK Power Public Company Limited), and on 17 May 2016, the Company entered into a Sponsor Loan Agreement under which it will provide loans of Baht 13,547 million to that company to fund additional construction work on the Xayaburi Hydroelectric Power Project. The loans are to carry interest at the Minimum Loan Rate plus 0.25 percent (MLR + 0.25%) per annum during the construction period and the Minimum Loan Rate (MLR) from the Commercial Operation Date (within the year 2019). The loans are to be repaid in accordance with the loan repayment schedule for the loans from the financial institutions for this project and full settlement is to be made no later than 2031, however, that the payment of interest and principal will be subject to the cash flows available to the shareholders after fulfillment of all conditions stipulated in the long-term loan agreements.

As at 31 December 2018, Xayaburi Power Company Limited has drew Baht 12,315 million of these loans from the Company (2017: Baht 11,188 million).

**f) Long-term loans to related company and interest receivable**

As at 31 December 2018 and 2017, the balances of long-term loans to related company and interest receivable between the Company and the related company and the movement are as follows:

(Unit: Thousand Baht)

|  | Consolidated and separate financial statements |                                |                                |                                      |
|--|--|--------------------------------|--------------------------------|--------------------------------------|
|  | Balance as at<br>31 December<br>2017           | Increase<br>during<br>the year | Decrease<br>during<br>the year | Balance as at<br>31 December<br>2018 |
| <b>Loans:</b>                                |  |                                |                                |                                      |
| - Nakhon Ratchasima Solar<br>Company Limited | 6,300  | -                              | (2,700)                        | 3,600                                |
| <b>Interest receivable:</b>                  |  |                                |                                |                                      |
| - Nakhon Ratchasima Solar<br>Company Limited | 406  | 275                            | (406)                          | 275                                  |
|  | <u>6,706</u>                                   | <u>275</u>                     | <u>(3,106)</u>                 | <u>3,875</u>                         |

The loan is subject to interest at the Minimum Loan Rate less 0.01 percent (MLR - 0.01%) per annum and due for repayment after Nakhon Ratchasima Solar Company Limited has paid the indebtedness as stipulated in the loan agreement from a financial institution.

**g) Trade accounts payable - related parties (Note 22)**

(Unit: Thousand Baht)

|   | Consolidated         |             | Separate             |             |
|---|----------------------|-------------|----------------------|-------------|
|   | financial statements |             | financial statements |             |
|   | <u>2018</u>          | <u>2017</u> | <u>2018</u>          | <u>2017</u> |
| <b>Subsidiaries</b>                           | -                    | -           | 98,738               | 98,256      |
| <b>Joint arrangements</b>                     | 2,794                | 42          | 2,794                | 42          |
| <b>Associated companies</b>                   | 88                   | -           | 88                   | -           |
| <b>Related parties (common directors)</b>     |                      |             |                      |             |
| - Bangpa-in Land Development Company Limited  | 80                   | 103         | 80                   | 103         |
| - Other related companies and related parties | 100                  | 109         | 100                  | 109         |
|   | <u>180</u>           | <u>212</u>  | <u>180</u>           | <u>212</u>  |



|  | (Unit: Thousand Baht) |               |                      |                |
|--|-----------------------|---------------|----------------------|----------------|
|  | Consolidated          |               | Separate             |                |
|  | financial statements  |               | financial statements |                |
|  | <u>2018</u>           | <u>2017</u>   | <u>2018</u>          | <u>2017</u>    |
| <b>Other joint operators</b>                                       |                       |               |                      |                |
| - CH. Thawee Construction Company Limited                          | 31,178                | 39,023        | 31,178               | 39,023         |
| - Sino-Thai Engineering and Construction<br>Public Company Limited | 3,746                 | 5,022         | 3,746                | 5,022          |
|  | <u>34,924</u>         | <u>44,045</u> | <u>34,924</u>        | <u>44,045</u>  |
| Total trade accounts payable - related parties                     | <u>37,986</u>         | <u>44,299</u> | <u>136,724</u>       | <u>142,555</u> |

#### h) Amounts due to related parties (Note 22)

|  | (Unit: Thousand Baht) |               |                      |               |
|--|-----------------------|---------------|----------------------|---------------|
|  | Consolidated          |               | Separate             |               |
|  | financial statements  |               | financial statements |               |
|  | <u>2018</u>           | <u>2017</u>   | <u>2018</u>          | <u>2017</u>   |
| <b>Other payable</b>                                     |                       |               |                      |               |
| <b>Joint arrangement</b>                                 | 383                   | 581           | 383                  | 581           |
| <b>Associated company</b>                                |                       |               |                      |               |
| - Kamala Senior Living Company Limited                   | 3,792                 | 3,792         | -                    | -             |
| <b>Other joint operator</b>                              |                       |               |                      |               |
| - Bilfinger SE (formerly known as "Bilfinger Berger AG") | 20,017                | 20,017        | 20,017               | 20,017        |
| Total amounts due to related parties                     | <u>24,192</u>         | <u>24,390</u> | <u>20,400</u>        | <u>20,598</u> |

#### i) Advances received from employers - related parties

|  | (Unit: Thousand Baht) |               |                      |               |
|--|-----------------------|---------------|----------------------|---------------|
|  | Consolidated          |               | Separate             |               |
|  | financial statements  |               | financial statements |               |
|  | <u>2018</u>           | <u>2017</u>   | <u>2018</u>          | <u>2017</u>   |
| <b>Associated company</b>                                |                       |               |                      |               |
| - Bangkok Expressway and Metro Public Company Limited    | 3,899                 | 24,969        | 3,899                | 24,969        |
| <b>Related company (common directors)</b>                |                       |               |                      |               |
| - TTW Public Company Limited                             | 1,325                 | -             | 1,325                | -             |
| Total advances received from employers - related parties | <u>5,224</u>          | <u>24,969</u> | <u>5,224</u>         | <u>24,969</u> |

## j) Retention for construction - related parties

(Unit: Thousand Baht)

|  | Consolidated         |               | Separate             |               |
|--|----------------------|---------------|----------------------|---------------|
|  | financial statements |               | financial statements |               |
|  | <u>2018</u>          | <u>2017</u>   | <u>2018</u>          | <u>2017</u>   |
| <b>Subsidiary</b>                                  | -                    | -             | 41,963               | 23,669        |
| <b>Other joint operators</b>                       |                      |               |                      |               |
| - CH. Thawee Construction Company Limited          | 24,481               | 16,802        | 24,481               | 16,802        |
| - Krungthon Engineers Company Limited              | 408                  | 408           | 408                  | 408           |
| Total retention for construction - related parties | <u>24,889</u>        | <u>17,210</u> | <u>66,852</u>        | <u>40,879</u> |

### Directors and management's remuneration

During the years ended 31 December 2018 and 2017, the Company and its subsidiaries had employee benefit expenses payable to their directors and management as below.

(Unit: Million Baht)

|                              | Consolidated         |             | Separate             |             |
|------------------------------|----------------------|-------------|----------------------|-------------|
|                              | financial statements |             | financial statements |             |
|                              | <u>2018</u>          | <u>2017</u> | <u>2018</u>          | <u>2017</u> |
| Short-term employee benefits | 199                  | 198         | 168                  | 157         |
| Post-employment benefits     | 2                    | 5           | 2                    | 4           |
| Total                        | <u>201</u>           | <u>203</u>  | <u>170</u>           | <u>161</u>  |

### Guarantee obligations with related parties

The Company has outstanding guarantee obligations with its related parties, as described in Note 36.4 to the financial statements.

## 7. Cash and cash equivalents

(Unit: Thousand Baht)

|               | Consolidated         |                  | Separate             |                  |
|---------------|----------------------|------------------|----------------------|------------------|
|               | financial statements |                  | financial statements |                  |
|               | <u>2018</u>          | <u>2017</u>      | <u>2018</u>          | <u>2017</u>      |
| Cash          | 10,328               | 13,236           | 7,736                | 10,317           |
| Bank deposits | 8,539,495            | 6,675,859        | 6,090,895            | 4,425,118        |
| Total         | <u>8,549,823</u>     | <u>6,689,095</u> | <u>6,098,631</u>     | <u>4,435,435</u> |

As at 31 December 2018, bank deposits in saving accounts and fixed deposits carried interests between 0.05 and 1.30 percent per annum (2017: between 0.05 and 1.40 percent per annum).

## 8. Current investments

(Unit: Thousand Baht)

|   | Consolidated         |                  | Separate             |                  |
|---|----------------------|------------------|----------------------|------------------|
|   | financial statements |                  | financial statements |                  |
|   | <u>2018</u>          | <u>2017</u>      | <u>2018</u>          | <u>2017</u>      |
| <b>Investments in trading securities</b>                |                      |                  |                      |                  |
| Marketable equity securities - Fair value               | <u>6,907</u>         | <u>6,047</u>     | <u>6,907</u>         | <u>6,047</u>     |
| <b>Investments in available-for-sale securities</b>     |                      |                  |                      |                  |
| Unit trust in fixed income open-ended fund              | 376,048              | 2,200,735        | 325,265              | 2,169,128        |
| Add: Unrealised gain on changes in value of investments | <u>1,607</u>         | <u>1,570</u>     | <u>1,353</u>         | <u>1,024</u>     |
| Fair value  | <u>377,655</u>       | <u>2,202,305</u> | <u>326,618</u>       | <u>2,170,152</u> |
| Total current investments                               | <u>384,562</u>       | <u>2,208,352</u> | <u>333,525</u>       | <u>2,176,199</u> |

## 9. Trade and other receivables

(Unit: Thousand Baht)

|  | Consolidated         |             | Separate             |             |
|--|----------------------|-------------|----------------------|-------------|
|  | financial statements |             | financial statements |             |
|  | <u>2018</u>          | <u>2017</u> | <u>2018</u>          | <u>2017</u> |
| <u>Trade receivables - related parties</u>   |                      |             |                      |             |
| Aged on the basis of due dates               |                      |             |                      |             |
| Not yet due                                  | 1,395,997            | 2,197,092   | 730,769              | 1,233,943   |
| Past due                                     |                      |             |                      |             |
| Up to 3 months                               | 1,059                | 13,241      | 1,059                | 13,241      |
| 3 - 6 months                                 | -                    | -           | -                    | -           |
| 6 - 12 months                                | -                    | -           | -                    | -           |
| Over 12 months                               | -                    | -           | 285,522              | 285,522     |
| Total trade receivables - related parties    | 1,397,056            | 2,210,333   | 1,017,350            | 1,532,706   |
| Retention receivable as per contract         | 39,035               | 32,978      | 39,035               | 32,978      |
| Total  | 1,436,091            | 2,243,311   | 1,056,385            | 1,565,684   |
| <u>Trade receivables - unrelated parties</u> |                      |             |                      |             |
| Aged on the basis of due dates               |                      |             |                      |             |
| Not yet due                                  | 3,847,808            | 1,679,845   | 3,798,197            | 1,467,294   |
| Past due                                     |                      |             |                      |             |
| Up to 3 months                               | 17,096               | 7,248       | 4,912                | -           |
| 3 - 6 months                                 | 71                   | 3,879       | -                    | -           |
| 6 - 12 months                                | 347                  | 1,874       | -                    | -           |
| Over 12 months                               | 93,074               | 216,589     | 93,074               | 216,589     |
| Total trade receivables - unrelated parties  | 3,958,396            | 1,909,435   | 3,896,183            | 1,683,883   |
| Retention receivable as per contract         | 745,750              | 418,177     | 693,785              | 345,481     |
| Total  | 4,704,146            | 2,327,612   | 4,589,968            | 2,029,364   |
| Total trade receivable - net                 | 6,140,237            | 4,570,923   | 5,646,353            | 3,595,048   |
| <u>Other receivables</u>                     |                      |             |                      |             |
| Other receivables - related parties          | 1,330,742            | 223,074     | 2,162,401            | 2,958,199   |
| Other receivables - unrelated parties        | 7,353                | 5,442       | -                    | 490         |
| Accrued income                               | 712,071              | 662,378     | 711,754              | 662,061     |
| Interest receivable                          | 162                  | 46          | 117                  | -           |
| Total other receivables                      | 2,050,328            | 890,940     | 2,874,272            | 3,620,750   |
| Total trade and other receivables - net      | 8,190,565            | 5,461,863   | 8,520,625            | 7,215,798   |

**10. Unbilled receivables/Advances received from employers and construction revenue received in advance**

(Unit: Thousand Baht)

|  | Consolidated<br>financial statements |               | Separate<br>financial statements |              |
|--|--------------------------------------|---------------|----------------------------------|--------------|
|  | <u>2018</u>                          | <u>2017</u>   | <u>2018</u>                      | <u>2017</u>  |
| <b>Unbilled receivables</b>  |                                      |               |                                  |              |
| Project value as per contract  | 29,649,863                           | 185,487,935   | 27,705,814                       | 86,892,231   |
| Accumulated amount recognised as revenue<br>on percentage of completion basis                | 21,119,679                           | 134,848,405   | 19,193,085                       | 50,629,814   |
| Less: Value of total billed  | (18,015,768)                         | (130,253,530) | (16,269,725)                     | (46,709,093) |
| Unbilled receivables   | 3,103,911                            | 4,594,875     | 2,923,360                        | 3,920,721    |
| <br><b>Retention receivable as per contracts</b>   | <br>784,785                          | <br>451,155   | <br>732,820                      | <br>378,459  |
| <br><b>Advances received from employers and<br/>construction revenue received in advance</b> |                                      |               |                                  |              |
| Project value as per contract  | 211,787,081                          | 73,636,476    | 112,472,543                      | 69,825,650   |
| Value of total billed  | 181,483,475                          | 58,724,447    | 87,804,010                       | 55,235,813   |
| Less: Accumulated amount recognised as<br>revenue on percentage of completion basis          | (173,757,284)                        | (55,345,217)  | (82,787,577)                     | (52,107,838) |
| Construction revenue received in advance   | 7,726,191                            | 3,379,230     | 5,016,433                        | 3,127,975    |
| Advances received from employers   | 3,256,898                            | 4,283,815     | 3,255,314                        | 4,251,043    |
| Total  | 10,983,089                           | 7,663,045     | 8,271,747                        | 7,379,018    |

## 11. Construction in progress and construction supplies

(Unit: Thousand Baht)

|                          | Consolidated         |                  | Separate             |                  |
|--------------------------|----------------------|------------------|----------------------|------------------|
|                          | financial statements |                  | financial statements |                  |
|                          | <u>2018</u>          | <u>2017</u>      | <u>2018</u>          | <u>2017</u>      |
| Construction supplies    | 310,867              | 389,367          | 197,456              | 252,460          |
| Spare parts              | 241,778              | 276,898          | 2,877                | 3,580            |
| Construction in progress | 210,863              | 2,708,334        | 210,863              | 764,216          |
| Goods in transit         | -                    | 1,094            | -                    | 1,094            |
| Total                    | <u>763,508</u>       | <u>3,375,693</u> | <u>411,196</u>       | <u>1,021,350</u> |

## 12. Other current assets

(Unit: Thousand Baht)

|                            | Consolidated         |                | Separate             |                |
|----------------------------|----------------------|----------------|----------------------|----------------|
|                            | financial statements |                | financial statements |                |
|                            | <u>2018</u>          | <u>2017</u>    | <u>2018</u>          | <u>2017</u>    |
| Prepaid expenses           | 64,617               | 63,159         | 53,126               | 47,671         |
| Refundable input tax       | 104,915              | 367,796        | 104,416              | 367,685        |
| Unbilled input tax         | 218,022              | 135,202        | 216,141              | 129,627        |
| Others                     | 16,218               | 21,001         | 13,355               | 17,921         |
| Total other current assets | <u>403,772</u>       | <u>587,158</u> | <u>387,038</u>       | <u>562,904</u> |

## 13. Restricted bank deposits

The outstanding balances represent bank deposit accounts which have been pledged with banks to secure the issuance of bank guarantees for electricity utilisation, bidding, issuance of other bank guarantees of a subsidiary.

## 14. Investments in subsidiaries

Details of investments in subsidiaries as presented in separate financial statements are as follows:

| Company's name  | Separate financial statements |             |                         |             |             |             | (Unit: Thousand Baht) |                                    |
|---|-------------------------------|-------------|-------------------------|-------------|-------------|-------------|-----------------------|------------------------------------|
|   | Paid-up capital               |             | Shareholding percentage |             | Cost        |             |                       | Dividend received during the years |
|   | <u>2018</u>                   | <u>2017</u> | <u>2018</u>             | <u>2017</u> | <u>2018</u> | <u>2017</u> |                       |                                    |
|   |                               |             | (%)                     | (%)         |             |             |                       |                                    |
| CH. Karnchang Realstate Company Limited               | 160,000                       | 160,000     | 99.00                   | 99.00       | 158,400     | 158,400     | -                     |                                    |
| CH. Karnchang-Tokyu Construction Company Limited      | 200,000                       | 100,000     | 55.00                   | 55.00       | 110,000     | 55,000      | 27,500                |                                    |
| CH. Karnchang (Lao) Company Limited                   |                               |             |                         |             |             |             | 33,000                |                                    |
| (paid-up share capital of USD 1,000,000)              | 39,636                        | 39,636      | 100.00                  | 100.00      | 39,636      | 39,636      | -                     |                                    |
| Total   |                               |             |                         |             | 308,036     | 253,036     | 33,000                |                                    |
| Less: Allowance for loss on investments in subsidiary |                               |             |                         |             | (1,559)     | (1,559)     |                       |                                    |
| Total investments in subsidiaries - net               |                               |             |                         |             | 306,477     | 251,477     |                       |                                    |

### CH. Karnchang-Tokyu Construction Company Limited

In October 2018, an extraordinary meeting of shareholders of CH. Karnchang-Tokyu Construction Company Limited (a subsidiary) passed a resolution to increase its registered share capital from Baht 100 million to Baht 200 million through the issuance of 1 million of the new ordinary shares of Baht 100 each, for use in operation of the subsidiary's construction contracting business. The shares were allocated to the existing shareholders in proportion to their shareholding. The subsidiary has received full payment of the share capital of Baht 100 million and registered the increase in share capital with the Ministry of Commerce on 7 November 2018.



## 15. Joint arrangements - joint operations

Financial information of the Company only and the joint arrangements which are the joint operations in 7 entities as described in Note 2.4 to the financial statements are presented including in the separate financial statement as below.

(Unit: Million Baht)

As at 31 December 2018

|   | The Company only | The joint arrangements | Elimination entries | Separate financial statement |
|---|------------------|------------------------|---------------------|------------------------------|
| <b>Summarised information about financial position:</b> |                  |                        |                     |                              |
| Current assets  | 13,040           | 9,152                  | (1,112)             | 21,080                       |
| Non-current assets                                      | 55,818           | 576                    | (31)                | 56,363                       |
| Current liabilities                                     | 17,811           | 8,868                  | (1,444)             | 25,235                       |
| Non-current liabilities                                 | 28,225           | 55                     | (26)                | 28,254                       |
| Unappropriated retained earnings                        | 7,638            | 781                    | 350                 | 8,769                        |

(Unit: Million Baht)

For the year ended 31 December 2018

|   | The Company only | The joint arrangements | Elimination entries | Separate financial statement |
|---|------------------|------------------------|---------------------|------------------------------|
| <b>Summarised information about profit or loss:</b> |                  |                        |                     |                              |
| Total revenues                                      | 13,953           | 10,918                 | (417)               | 24,454                       |
| Total expenses                                      | (12,197)         | (10,064)               | 397                 | (21,864)                     |
| Profit before finance cost and income tax expenses  | 1,756            | 854                    | (20)                | 2,590                        |
| Finance cost  | (1,144)          | (72)                   | 5                   | (1,211)                      |
| Profit before income tax expenses                   | 612              | 782                    | (15)                | 1,379                        |
| Tax income (expenses)                               | 13               | (152)                  | -                   | (139)                        |
| Profit for the year                                 | 625              | 630                    | (15)                | 1,240                        |

(Unit: Million Baht)

## As at 31 December 2017

|   | The Company only | The joint arrangements | Elimination entries | Separate financial statement |
|---|------------------|------------------------|---------------------|------------------------------|
| <b>Summarised information about financial position:</b> |                  |                        |                     |                              |
| Current assets  | 17,439           | 7,860                  | (417)               | 24,882                       |
| Non-current assets                                      | 50,777           | 423                    | (27)                | 51,173                       |
| Current liabilities                                     | 15,070           | 8,076                  | (759)               | 22,387                       |
| Non-current liabilities                                 | 29,910           | 32                     | (26)                | 29,916                       |
| Unappropriated retained earnings                        | 7,775            | 150                    | 366                 | 8,291                        |

(Unit: Million Baht)

## For the year ended 31 December 2017

|   | The Company only | The joint arrangements | Elimination entries | Separate financial statement |
|---|------------------|------------------------|---------------------|------------------------------|
| <b>Summarised information about profit or loss:</b> |                  |                        |                     |                              |
| Total revenues                                      | 15,878           | 6,140                  | (519)               | 21,499                       |
| Total expenses                                      | (14,127)         | (5,728)                | 482                 | (19,373)                     |
| Profit before finance cost and income tax expenses  | 1,751            | 412                    | (37)                | 2,126                        |
| Finance cost  | (1,227)          | (55)                   | 1                   | (1,281)                      |
| Profit before income tax expenses                   | 524              | 357                    | (36)                | 845                          |
| Tax income (expenses)                               | 6                | (72)                   | -                   | (66)                         |
| Profit for the year                                 | 530              | 285                    | (36)                | 779                          |

## 16. Investments in associated companies

### 16.1 Details of associated companies:

(Unit: Thousand Baht)

| Company's name  | Nature of business  | Country of incorporation | Consolidated financial statements |          |            |   |            |
|---|---|--------------------------|-----------------------------------|----------|------------|---|------------|
|   |   |                          | Shareholding percentage           |          | Cost       | Carrying amounts based on equity method |            |
|   |   |                          | 2018 (%)                          | 2017 (%) |            | 2018                                    | 2017       |
| Bangkok Expressway and Metro Public Company Limited   | Construction and management of the expressway, the operation of metro services and commercial development | Thailand                 | 31.78                             | 30.87    | 20,025,367 | 19,230,857                              | 16,762,972 |
| (30.89 percent held by the Company and 0.89 percent indirectly held by a subsidiary (2017: 29.98 percent held by the Company and 0.89 percent indirectly held by a subsidiary)) |   |                          |                                   |          |            |   |            |
| CK Power Public Company Limited   | Making investment in other companies  | Thailand                 | 27.22                             | 27.41    | 4,540,846  | 3,196,675                               | 3,044,102  |
| Kamala Senior Living Company Limited  | Development and management of elderly residential project   | Thailand                 | 20.00                             | 20.00    | 20,000     | 19,196                                  | (125)      |
| (20.00 percent indirectly held by a subsidiary)   |   |                          |                                   |          |            |   |            |
| Total   |   |                          |                                   |          | 24,586,213 | 22,446,728                              | 19,806,949 |
| Presented as:   |   |                          |                                   |          |            |   |            |
| Investments in associated companies   |   |                          |                                   |          |            | 22,446,728                              | 19,807,074 |
| Allowance for loss on investment in associated company as presented as allowance for doubtful account - associated company (Note 6)   |   |                          |                                   |          |            | -                                       | (125)      |

(Unit: Thousand Baht)

| Company's name                                      | Nature of business  | Country of incorporation | Separate financial statements |          |            |            |                                   |            |
|---|---|--------------------------|-------------------------------|----------|------------|------------|-----------------------------------|------------|
|   |   |                          | Shareholding percentage       |          | Cost       |            | Allowance for loss on investments |            |
|   |   |                          | 2018 (%)                      | 2017 (%) | 2018       | 2017       | 2018                              | 2017       |
| Bangkok Expressway and Metro Public Company Limited | Construction and management of the expressway, the operation of metro services and commercial development | Thailand                 | 30.89                         | 29.98    | 19,311,083 | 18,069,796 | (299,928)                         | (299,928)  |
| CK Power Public Company Limited                     | Making investment in other companies  | Thailand                 | 27.22                         | 27.41    | 4,540,846  | 4,572,487  | -                                 | -          |
| Total   |   |                          |                               |          | 23,851,929 | 22,642,283 | (299,928)                         | (299,928)  |
|   |   |                          |                               |          |            |            | 23,552,001                        | 22,342,355 |
|   |   |                          |                               |          |            |            |                                   | 17,769,868 |
|   |   |                          |                               |          |            |            |                                   | 4,572,487  |

## 16.2 Share of comprehensive income and dividend received

During the years, the Company has recognised its share of profit (loss) from investments in associated companies in the consolidated financial statements and dividend income in the separate financial statements as follows:

(Unit: Thousand Baht)

| Company's name   | Consolidated<br>financial statements  |         |  |         | Separate<br>financial statements      |         |
|--|---|---------|--|---------|---------------------------------------|---------|
|  | Share of profit (loss) from<br>investments in associated<br>companies during<br>the years |         | Share of other<br>comprehensive income<br>from investments in<br>associates during the years |         | Dividend received<br>during the years |         |
|  | 2018  | 2017    | 2018   | 2017    | 2018                                  | 2017    |
|  |   |         |  |         |                                       |         |
| Bangkok Expressway and Metro Public<br>Company Limited | 1,479,706   | 822,044 | 358,211  | 27,736  | 603,476                               | 549,855 |
| CK Power Public Company Limited                        | 178,402   | 1,210   | 41,488   | 81,628  | 45,456                                | 127,216 |
| Kamala Senior Living Company Limited                   | (478)   | (325)   | -  | -       | -                                     | -       |
| Total  | 1,657,630   | 822,929 | 399,699  | 109,364 | 648,932                               | 677,071 |

## 16.3 Fair value investments in listed associates

The fair values of investments in associated companies that are listed on the Stock Exchange of Thailand are based on the latest bid price of the last working days of December 2018 and 2017, as quoted on the Stock Exchange of Thailand. Such fair values are as follow:

(Unit: Million Baht)

| Company's name   | Consolidated<br>financial statements |                      | Separate<br>financial statements |                      |
|--|--------------------------------------|----------------------|----------------------------------|----------------------|
|  | Fair values as at 31 December        |                      | Fair values as at 31 December    |                      |
|  | 2018                                 | 2017                 | 2018                             | 2017                 |
| Bangkok Expressway and Metro Public Company<br>Limited | 47,130                               | 36,335               | 45,805                           | 35,282               |
| CK Power Public Company Limited                        | 9,951 <sup>(1)</sup>                 | 8,162 <sup>(1)</sup> | 9,951 <sup>(1)</sup>             | 8,162 <sup>(1)</sup> |
| Total  | 57,081                               | 44,497               | 55,756                           | 43,444               |

<sup>(1)</sup> This fair value excludes the fair values of warrants amounting to Baht 381 million (2017: Baht 305 million).

## 16.4 Summarised financial information

### Summarised information about financial position

(Unit: Million Baht)

|  | Bangkok Expressway and<br>Metro Public Company Limited<br>and its subsidiaries |               | CK Power<br>Public Company Limited<br>and its subsidiaries |               | Kamala Senior<br>Living Company Limited |             |
|--|--|---------------|--|---------------|---|-------------|
|  | <u>2018</u>  | <u>2017</u>   | <u>2018</u>  | <u>2017</u>   | <u>2018</u>                             | <u>2017</u> |
| Current assets   | 4,217  | 6,280         | 6,273  | 6,294         | 25                                      | 44          |
| Non-current assets   | 99,614   | 92,639        | 56,230   | 54,168        | 384                                     | 309         |
| Current liabilities  | (14,607)   | (11,583)      | (2,488)  | (2,669)       | (171)                                   | (353)       |
| Non-current liabilities  | (53,612)   | (56,157)      | (28,493)   | (27,134)      | (139)                                   | -           |
| <b>Net assets</b>  | <b>35,612</b>  | <b>31,179</b> | <b>31,522</b>  | <b>30,659</b> | <b>99</b>                               | <b>-</b>    |
| Equity attributable to non-controlling<br>interests of the subsidiaries in associated<br>companies | (113)  | (111)         | (13,189)   | (12,910)      | -                                       | -           |
| <b>Net assets of the Company</b>   | <b>35,499</b>  | <b>31,068</b> | <b>18,333</b>  | <b>17,749</b> | <b>99</b>                               | <b>-</b>    |
| Shareholding percentage (%)  | 31.78%   | 30.87%        | 27.22%   | 27.41%        | 20.00%                                  | 20.00%      |
| <b>Share of net assets</b>   | <b>11,282</b>  | <b>9,591</b>  | <b>4,990</b>   | <b>4,865</b>  | <b>20</b>                               | <b>-</b>    |
| Elimination entries and others   | 7,949  | 7,172         | (1,793)  | (1,821)       | (1)                                     | -           |
| <b>Carrying amounts of associates based<br/>on equity method</b>                                   | <b>19,231</b>  | <b>16,763</b> | <b>3,197</b>   | <b>3,044</b>  | <b>19</b>                               | <b>-</b>    |

### Summarised information about comprehensive income

(Unit: Million Baht)

|                            | For the years ended 31 December  |             |  |             |   |             |
|----------------------------|--|-------------|--|-------------|---|-------------|
|                            | Bangkok Expressway and<br>Metro Public Company<br>Limited and its subsidiaries |             | CK Power<br>Public Company Limited<br>and its subsidiaries |             | Kamala Senior<br>Living Company Limited |             |
|                            | <u>2018</u>  | <u>2017</u> | <u>2018</u>  | <u>2017</u> | <u>2018</u>                             | <u>2017</u> |
| Revenue                    | 19,087   | 15,393      | 9,116  | 6,930       | -                                       | -           |
| Profit (loss)              | 5,317  | 3,123       | 599  | 159         | -                                       | (1)         |
| Other comprehensive income | 1,144  | 90          | 152  | 288         | -                                       | -           |
| Total comprehensive income | 6,461  | 3,213       | 751  | 447         | -                                       | -           |

## **Bangkok Expressway and Metro Public Company Limited**

In June 2018, the Company purchased 130 million ordinary shares of Bangkok Expressway and Metro Public Company Limited amounting to Baht 995 million, as a result, its interest in the equity of such company increased from 29.98 percent to 30.83 percent.

In September 2018, the Company purchased 50 million ordinary shares of Bangkok Expressway and Metro Public Company Limited amounting to Baht 410 million, as a result, its interest in equity of such company increased from 30.83 percent to 31.16 percent.

In December 2018, the Company sold 40 million ordinary shares of Bangkok Expressway and Metro Public Company Limited at a price of approximately Baht 340 million and recorded the gain of approximately Baht 208 million on the sale of the investment in this associated company in profit or loss in the consolidated financial statements for the year 2018 (Baht 198 million recorded in profit or loss in the separate financial statements). As a result, the Company's interest in the equity of the above company decreased from 31.16 percent to 30.89 percent.

The Company is subject to restrictions on the sale, transfer or creation of obligations with respect to some share certificates for its investment in Bangkok Expressway and Metro Public Company Limited, in compliance with a condition of the Company's long-term loans and debentures.

A subsidiary has pledged some of the share certificates for its investment in Bangkok Expressway and Metro Public Company Limited with a bank to secure its short-term loans from the bank.

### Share of profit from investment in Bangkok Expressway and Metro Public Company Limited

During the year ended 31 December 2018, the Company recognised share of profit from investment in Bangkok Expressway and Metro Public Company Limited amounting to Baht 1,480 million in the consolidated statement of comprehensive income which included share of gain on the sale of investment in CK Power Public Company Limited and gain on reclassification of this investment, in proportion to the shareholdings in Bangkok Expressway and Metro Public Company Limited, amounting to Baht 698 million (net of income tax). These gains were the result of the Bangkok Expressway and Metro Public Company Limited selling the ordinary shares of CK Power Public Company Limited in July 2018; consequently its interest in the equity of CK Power Public Company Limited decreased from 19.34 percent to 17.83 percent and Bangkok Expressway and Metro Public Company Limited reclassified the investment in CK Power Public Company Limited from investment in associated company to investment in available-for-sale securities. Such reclassification was consistent with the current purpose of investing in CK Power Public Company Limited, which is to convert the investment to cash when the business opportunity and timing are appropriate.



Dispute over the competing road with Udon Rattaya Expressway of a subsidiary of Bangkok Expressway and Metro Public Company Limited

On 21 September 2018, the Supreme Administrative Court ruled to affirm the Judgement of the Administrative Court to enforce the arbitral award of the arbitral tribunal requiring Expressway Authority of Thailand (“EXAT”) to compensate a subsidiary of Bangkok Expressway and Metro Public Company Limited for the deficient revenue from the projection under the Bang Pa-In - Pak kret Expressway Agreement in total of Baht 1,790 million with interest. EXAT shall be required to fully comply with the Judgement within 90 days from the date the Supreme Administrative Court has ruled the Judgement, which will be due on 20 December 2018.

On 2 October 2018, the Council of Ministers’ Meeting passed a resolution to require that the Government agency may conduct a negotiation with its disputing party to alleviate the damage of the Government and to ensure justice to the people. Subsequently, EXAT issued a letter dated 31 October 2018 to the subsidiary informing that the Board of EXAT has appointed a subcommittee to consider determining the guidelines for compliance with such judgement of the Supreme Administrative Court, as well as conducting a negotiation with the subsidiary and inviting the subsidiary to attend the negotiation to reach an agreement for such matter.

On 19 December 2018, EXAT and the subsidiary issued their letters to reply the letter of the Bureau of Administrative Case Execution dated 11 October 2018 regarding the compliance with the Supreme Administrative Court’s judgement that it is pending on the negotiation process to conclude the Supreme Administrative Court’s judgement.

During December 2018, the subcommittee attended the meetings for negotiation with Bangkok Expressway and Metro Public Company Limited and the subsidiary several times for the dispute settlement of all cases between EXAT and Bangkok Expressway and Metro Public Company Limited and the subsidiary under the Second Stage Expressway Agreement (Sector A, B and C), the Agreement for the Extension of the Second Stage Expressway System (Sector D), and the Bang Pa-in - Pak Kret Expressway Agreement. On 21 December 2018, Bangkok Expressway and Metro Public Company Limited and the subsidiary have reached the agreement with EXAT for the negotiation and dispute settlement for all disputes. This includes the dispute regarding the competing road, in which the Notice of claim has been issued to require EXAT to comply with the Agreement in an amount of Baht 74,590 million. The agreement can be summarised as follows;

- A) EXAT, Bangkok Expressway and Metro Public Company Limited and the subsidiary have agreed to settle all disputes which already took place or would take place in the future in the same issues in relation with the Concession Agreements.

B) EXAT, Bangkok Expressway and Metro Public Company Limited and the subsidiary have mutually agreed to review and amend the Concession Agreements as follows;

B1. The respective periods of time of the Second Stage Expressway Agreement (Sector A, B and C), the Agreement for the Extension of the Second Stage Expressway System (Sector D), and the Bang Pa-in - Pak Kret Expressway Agreement, shall be extended from which would formerly end in 2020, 2027, and 2026 respectively, to end on April 2057;

B2. Bangkok Expressway and Metro Public Company Limited shall provide the O&M Services of the Second Stage Expressway and the subsidiary shall provide the O&M Services of the Bang Pa-in - Pak Kret Expressway, provided that Bangkok Expressway and Metro Public Company Limited and the subsidiary are entitled to receive toll revenue sharing throughout the respective agreement periods at the rates ranging from 40 to 100 percent according to the rates specified in the Agreements;

B3. The revision of toll rates shall be revised to constantly increase every 10 years;

B4. Bangkok Expressway and Metro Public Company Limited have duty to invest, construct and improve the Second Stage Expressway in the total investment amount of approximately Baht 31,500 million to solve the traffic congestion problem.

At present, the results of the negotiation and disputes settlement are pending for the relevant government agency to propose to the Cabinet for an approval in conformity with the Private Investment in State Undertaking Act B.E. 2556, in which there might be the possibilities to be altered from which summarised in A) and B).

Since the agreement to settle the disputes from the negotiation process is pending for the relevant government agencies to propose for approval from the Cabinet. And, should there be an approval, it requires the process of signing the reviewed and amended concession agreements. Thus, there remains uncertainly as to the compensation to be derived by the subsidiary from EXAT, the subsidiary of Bangkok Expressway and Metro Public Company Limited has not yet recorded revenue from compensation under the judgment of the Supreme Administrative Court in relation to the dispute regarding the competing road with the Udon Ratthaya Expressway in the total amount of Baht 1,790 million, together with interest and related expenses to be incurred, in the financial statement for the year ended 31 December 2018.

## CK Power Public Company Limited

The Company has, at no cost, 586.3 million warrants to purchase newly issued ordinary shares of the associate at a ratio of 1 warrant to 1 ordinary share, with an exercise price of Baht 6 per share. The warrants have an exercise period of 5 years and are exercisable on the last business day of each quarter over the term of the warrants. The first and the last exercise dates are 30 September 2015 and 28 May 2020, respectively.

In November 2018, the Company sold 14 million ordinary shares of CK Power Public Company Limited at a price of approximately Baht 74 million and recorded the gain of approximately Baht 52 million on the sale of the investment in this associated company in profit or loss in the consolidated financial statements for the year 2018 (Baht 42 million recorded in profit or loss in the separate financial statements). As a result, the Company's interest in the equity of the above company decreased from 27.41 percent to 27.22 percent.

### 17. Other long-term investments

(Unit: Thousand Baht)

|   | Consolidated financial statements |                  |                  | Separate financial statements |                  |                  |
|---|-----------------------------------|------------------|------------------|-------------------------------|------------------|------------------|
|   | Shareholding                      | Investments      |                  | Shareholding                  | Investments      |                  |
|   | percentage                        | 2018             | 2017             | percentage                    | 2018             | 2017             |
|   | Percent                           |                  |                  | Percent                       |                  |                  |
| <b><u>Investments in available-for-sale - related company</u></b> |                                   |                  |                  |                               |                  |                  |
| TTW Public Company Limited  | 19.40                             | 5,810,452        | 5,810,452        | 19.40                         | 1,255,736        | 1,255,736        |
| Add: Unrealised gain on changes in value of investments           |                                   | 3,710,704        | 3,865,520        |                               | 8,265,420        | 8,420,236        |
|   |                                   | <b>9,521,156</b> | <b>9,675,972</b> |                               | <b>9,521,156</b> | <b>9,675,972</b> |
| <b><u>Other investments - other companies</u></b>                 |                                   |                  |                  |                               |                  |                  |
| Bangkok Tokyu Department Store Company Limited                    | 19.00                             | 2,280            | 2,280            | -                             | -                | -                |
| Kruasakul Company Limited   | 10.14                             | 43,750           | 43,750           | 10.14                         | 43,750           | 43,750           |
| The Bangkok Club Company Limited                                  | 0.57                              | 3,000            | 3,000            | 0.57                          | 3,000            | 3,000            |
| Chanthaburi Country Club Company Limited                          | 0.25                              | 2,708            | 2,708            | 0.25                          | 2,708            | 2,708            |
| Saha Tokyu Corporation Company Limited                            | 5.00                              | 16,600           | 16,600           | -                             | -                | -                |
| JR Kyushu Capital Management (Thailand) Company Limited           | 17.00                             | 21,250           | 21,250           | -                             | -                | -                |
|   |                                   | 89,588           | 89,588           |                               | 49,458           | 49,458           |
| Less: Provision for loss on diminution in value of investments    |                                   | (43,750)         | (43,750)         |                               | (43,750)         | (43,750)         |
|   |                                   | <b>45,838</b>    | <b>45,838</b>    |                               | <b>5,708</b>     | <b>5,708</b>     |
| Other long-term investments, net                                  |                                   | <b>9,566,994</b> | <b>9,721,810</b> |                               | <b>9,526,864</b> | <b>9,681,680</b> |

## 18. Investment properties

The net book value of investment properties as at 31 December 2018 and 2017 is presented below.

(Unit: Thousand Baht)

|   | Consolidated financial statements |                |                | Separate financial statements |                |                |
|---|-----------------------------------|----------------|----------------|-------------------------------|----------------|----------------|
|   | Office building                   |                |                | Office building               |                |                |
|   | Land                              | for rent       | Total          | Land                          | for rent       | Total          |
| 31 December 2018:                         |                                   |                |                |                               |                |                |
| Cost                                      | 482,808                           | 209,191        | 691,999        | 402,058                       | 258,626        | 660,684        |
| <u>Less</u> Accumulated depreciation      | (17,314)                          | (59,019)       | (76,333)       | (17,314)                      | (71,755)       | (89,069)       |
| <u>Less</u> Allowance for impairment loss | (46,113)                          | -              | (46,113)       | (41,834)                      | -              | (41,834)       |
| Net book value                            | <u>419,381</u>                    | <u>150,172</u> | <u>569,553</u> | <u>342,910</u>                | <u>186,871</u> | <u>529,781</u> |
| 31 December 2017:                         |                                   |                |                |                               |                |                |
| Cost                                      | 421,440                           | 209,191        | 630,631        | 340,691                       | 258,626        | 599,317        |
| <u>Less</u> Accumulated depreciation      | (55)                              | (53,469)       | (53,524)       | (55)                          | (65,065)       | (65,120)       |
| <u>Less</u> Allowance for impairment loss | (46,113)                          | -              | (46,113)       | (41,834)                      | -              | (41,834)       |
| Net book value                            | <u>375,272</u>                    | <u>155,722</u> | <u>530,994</u> | <u>298,802</u>                | <u>193,561</u> | <u>492,363</u> |

A reconciliation of the net book value of investment properties for the years 2018 and 2017 is presented below.

(Unit: Thousand Baht)

|   | Consolidated financial statements |                | Separate financial statements |                |
|---|-----------------------------------|----------------|-------------------------------|----------------|
|   | 2018                              | 2017           | 2018                          | 2017           |
|   |                                   |                |                               |                |
| Net book value at beginning of year       | 530,994                           | 417,260        | 492,363                       | 499,945        |
| Transfers                                 | 49,627                            | 105,586        | 49,627                        | (853)          |
| Reversal of allowance for impairment loss | -                                 | 13,736         | -                             | -              |
| Depreciation charged                      | (11,068)                          | (5,588)        | (12,209)                      | (6,729)        |
| Net book value at end of year             | <u>569,553</u>                    | <u>530,994</u> | <u>529,781</u>                | <u>492,363</u> |

The fair value of the investment properties as at 31 December 2018 and 2017 stated below:

(Unit: Thousand Baht)

|                          | Consolidated financial statements |         | Separate financial statements |         |
|--------------------------|-----------------------------------|---------|-------------------------------|---------|
|                          | 2018                              | 2017    | 2018                          | 2017    |
|                          |                                   |         |                               |         |
| Land                     | 1,141,409                         | 930,010 | 781,167                       | 781,167 |
| Office building for rent | 284,501                           | 284,501 | 342,740                       | 342,740 |

The fair values have been determined based on valuations performed by an independent valuer, using the market prices.

## 19. Property, plant and equipment

(Unit: Thousand Baht)

| Consolidated financial statements   |                           |                      |                            |                       |                         |  |                |                           |            |
|---|---------------------------|----------------------|----------------------------|-----------------------|-------------------------|--|----------------|---------------------------|------------|
|   | Land and land improvement | Condominium building | Buildings and construction | Building improvements | Machinery and equipment | Furniture, fixtures and office equipment | Motor vehicles | Assets under construction | Total      |
| <b>Cost</b>   |                           |                      |                            |                       |                         |  |                |                           |            |
| 31 December 2016  | 3,385,585                 | 469,297              | 2,528,535                  | 45,818                | 6,869,071               | 451,315                                  | 398,994        | 81,596                    | 14,230,211 |
| Additions   | 541,047                   | -                    | 39,075                     | 421                   | 198,353                 | 40,681                                   | 2,351          | 46,920                    | 868,848    |
| Disposal of the subsidiary during the year  | (3,811)                   | (6,023)              | -                          | -                     | (157,441)               | (2,607)                                  | (3,579)        | (180)                     | (173,641)  |
| Disposals/write off   | -                         | -                    | (11,722)                   | -                     | (210,241)               | (19,870)                                 | (141,615)      | -                         | (383,448)  |
| Reclassification/transfer in (out)  | (67,840)                  | (22,006)             | (6,594)                    | -                     | 103,559                 | 4,996                                    | -              | (33,385)                  | (21,270)   |
| 31 December 2017  | 3,854,981                 | 441,268              | 2,549,294                  | 46,239                | 6,803,301               | 474,515                                  | 256,151        | 94,951                    | 14,520,700 |
| <b>Accumulated depreciation</b>   |                           |                      |                            |                       |                         |  |                |                           |            |
| 31 December 2016  | 367,382                   | 99,538               | 1,133,757                  | 20,745                | 3,231,302               | 333,398                                  | 360,180        | -                         | 5,546,302  |
| Depreciation for the year   | 10,028                    | 10,637               | 440,391                    | 3,830                 | 438,855                 | 57,447                                   | 11,210         | -                         | 972,398    |
| Disposal of the subsidiary during the year  | (1,861)                   | (713)                | -                          | -                     | (94,714)                | (1,740)                                  | (2,563)        | -                         | (101,591)  |
| Depreciation on disposals/write off   | -                         | -                    | (9,107)                    | -                     | (107,474)               | (19,007)                                 | (140,415)      | -                         | (276,003)  |
| Reclassification/transfer out   | -                         | (11,867)             | -                          | -                     | -                       | -  | -              | -                         | (11,867)   |
| 31 December 2017  | 375,549                   | 97,595               | 1,565,041                  | 24,575                | 3,467,969               | 370,098                                  | 228,412        | -                         | 6,129,239  |
| <b>Allowance for impairment loss</b>  |                           |                      |                            |                       |                         |  |                |                           |            |
| 31 December 2016  | 73,924                    | -                    | -                          | -                     | -                       | -  | -              | -                         | 73,924     |
| 31 December 2017  | 73,924                    | -                    | -                          | -                     | -                       | -  | -              | -                         | 73,924     |
| <b>Net book value</b>   |                           |                      |                            |                       |                         |  |                |                           |            |
| 31 December 2016  | 2,944,279                 | 369,759              | 1,394,778                  | 25,073                | 3,637,769               | 117,917                                  | 38,814         | 81,596                    | 8,609,985  |
| 31 December 2017  | 3,405,508                 | 343,673              | 984,253                    | 21,664                | 3,335,332               | 104,417                                  | 27,739         | 94,951                    | 8,317,537  |
| <b>Depreciation for the year</b>  |                           |                      |                            |                       |                         |  |                |                           |            |
| 2016 (Baht 772 million included in cost of construction services, sales of construction materials and services, and the balance in administrative expenses) |                           |                      |                            |                       |                         |  |                |                           | 931,173    |
| 2017 (Baht 708 million included in cost of construction services, sales of construction materials and services, and the balance in administrative expenses) |                           |                      |                            |                       |                         |  |                |                           | 972,398    |

## Consolidated financial statements

|   | Land and land improvement | Condominium building | Buildings and construction | Building improvements | Machinery and equipment | Furniture, fixtures and office equipment | Motor vehicles | Assets under construction | Total       |
|---|---------------------------|----------------------|----------------------------|-----------------------|-------------------------|--|----------------|---------------------------|-------------|
| <b>Cost</b>   |                           |                      |                            |                       |                         |  |                |                           |             |
| 31 December 2017  | 3,854,981                 | 441,268              | 2,549,294                  | 46,239                | 6,803,301               | 474,515                                  | 256,151        | 94,951                    | 14,520,700  |
| Additions   | 1,432,046                 | -                    | 164,033                    | -                     | 102,889                 | 9,374                                    | 270            | 819,465                   | 2,528,077   |
| Disposals/write off   | -                         | -                    | (1,351,686)                | -                     | (131,831)               | (43,164)                                 | (33,202)       | -                         | (1,559,883) |
| Reclassification/transfer in (out)  | (61,368)                  | -                    | -                          | 65,509                | 153                     | 657                                      | -              | (66,319)                  | (61,368)    |
| 31 December 2018  | 5,225,659                 | 441,268              | 1,361,641                  | 111,748               | 6,774,512               | 441,382                                  | 223,219        | 848,097                   | 15,427,526  |
| <b>Accumulated depreciation</b>   |                           |                      |                            |                       |                         |  |                |                           |             |
| 31 December 2017  | 375,549                   | 97,595               | 1,565,041                  | 24,575                | 3,467,969               | 370,098                                  | 228,412        | -                         | 6,129,239   |
| Depreciation for the year   | 42,982                    | 10,637               | 206,044                    | 7,084                 | 368,088                 | 40,230                                   | 9,161          | -                         | 684,226     |
| Depreciation on disposals/write off   | -                         | -                    | (1,067,679)                | -                     | (91,374)                | (43,676)                                 | (33,176)       | -                         | (1,235,905) |
| Reclassification/transfer in (out)  | (11,741)                  | -                    | -                          | -                     | 16                      | (16)                                     | -              | -                         | (11,741)    |
| 31 December 2018  | 406,790                   | 108,232              | 703,406                    | 31,659                | 3,744,699               | 366,636                                  | 204,397        | -                         | 5,565,819   |
| <b>Allowance for impairment loss</b>  |                           |                      |                            |                       |                         |  |                |                           |             |
| 31 December 2017  | 73,924                    | -                    | -                          | -                     | -                       | -  | -              | -                         | 73,924      |
| 31 December 2018  | 73,924                    | -                    | -                          | -                     | -                       | -  | -              | -                         | 73,924      |
| <b>Net book value</b>   |                           |                      |                            |                       |                         |  |                |                           |             |
| 31 December 2017  | 3,405,508                 | 343,673              | 984,253                    | 21,664                | 3,335,332               | 104,417                                  | 27,739         | 94,951                    | 8,317,537   |
| 31 December 2018  | 4,744,945                 | 333,036              | 658,235                    | 80,089                | 3,029,813               | 74,746                                   | 18,822         | 848,097                   | 9,787,783   |
| <b>Depreciation for the year</b>  |                           |                      |                            |                       |                         |  |                |                           |             |
| 2017 (Baht 708 million included in cost of construction services, sales of construction materials and services, and the balance in administrative expenses) |                           |                      |                            |                       |                         |  |                |                           | 972,398     |
| 2018 (Baht 383 million included in cost of construction services, sales of construction materials and services, and the balance in administrative expenses) |                           |                      |                            |                       |                         |  |                |                           | 684,226     |

(Unit: Thousand Baht)

## Separate financial statements

|   | Land and<br>land<br>improvement | Condominium<br>building | Buildings and<br>construction | Building<br>improvements | Machinery<br>and<br>equipment | Furniture,<br>fixtures<br>and office<br>equipment | Motor<br>vehicles | Assets under<br>construction | Total     |
|---|---------------------------------|-------------------------|-------------------------------|--------------------------|-------------------------------|---|-------------------|------------------------------|-----------|
| <b>Cost</b>   |                                 |                         |                               |                          |                               |   |                   |                              |           |
| 31 December 2016  | 3,328,716                       | 405,374                 | 425,829                       | 40,710                   | 3,358,291                     | 255,545   | 289,763           | 81,416                       | 8,185,644 |
| Additions   | 541,047                         | -                       | 39,075                        | -                        | 161,877                       | 32,140  | 775               | 45,610                       | 820,524   |
| Disposals/write off   | -                               | -                       | (15,803)                      | -                        | (112,822)                     | (14,889)  | (136,508)         | -                            | (280,022) |
| Reclassification/transfer in (out)  | 17,016                          | 1,068                   | 4,012                         | -                        | 102,249                       | 4,996   | -                 | (32,075)                     | 97,266    |
| 31 December 2017  | 3,886,779                       | 406,442                 | 453,113                       | 40,710                   | 3,509,595                     | 277,792   | 154,030           | 94,951                       | 8,823,412 |
| <b>Accumulated depreciation</b>   |                                 |                         |                               |                          |                               |   |                   |                              |           |
| 31 December 2016  | 365,522                         | 86,840                  | 172,426                       | 18,824                   | 1,476,783                     | 185,568   | 278,081           | -                            | 2,584,044 |
| Depreciation for the year   | 10,027                          | 9,497                   | 98,441                        | 3,073                    | 241,627                       | 31,771  | 5,092             | -                            | 399,528   |
| Depreciation on disposals/write off   | -                               | -                       | (13,188)                      | -                        | (75,547)                      | (14,285)  | (136,053)         | -                            | (239,073) |
| Reclassification/transfer in  | -                               | 229                     | -                             | -                        | -                             | -   | -                 | -                            | 229       |
| 31 December 2017  | 375,549                         | 96,566                  | 257,679                       | 21,897                   | 1,642,863                     | 203,054   | 147,120           | -                            | 2,744,728 |
| <b>Allowance for impairment loss</b>  |                                 |                         |                               |                          |                               |   |                   |                              |           |
| 31 December 2016  | 73,924                          | -                       | -                             | -                        | -                             | -   | -                 | -                            | 73,924    |
| 31 December 2017  | 73,924                          | -                       | -                             | -                        | -                             | -   | -                 | -                            | 73,924    |
| <b>Net book value</b>   |                                 |                         |                               |                          |                               |   |                   |                              |           |
| 31 December 2016  | 2,889,270                       | 318,534                 | 253,403                       | 21,886                   | 1,881,508                     | 69,977  | 11,682            | 81,416                       | 5,527,676 |
| 31 December 2017  | 3,437,306                       | 309,876                 | 195,434                       | 18,813                   | 1,866,732                     | 74,738  | 6,910             | 94,951                       | 6,004,760 |
| <b>Depreciation for the year</b>  |                                 |                         |                               |                          |                               |   |                   |                              |           |
| 2016 (Baht 169 million included in cost of construction services, sales of construction materials and services, and the balance in administrative expenses) |                                 |                         |                               |                          |                               |   |                   |                              | 320,101   |
| 2017 (Baht 140 million included in cost of construction services, sales of construction materials and services, and the balance in administrative expenses) |                                 |                         |                               |                          |                               |   |                   |                              | 399,528   |



(Unit: Thousand Baht)

## Separate financial statements

|   | Land and<br>land<br>improvement | Condominium<br>building | Buildings and<br>construction | Building<br>improvements | Machinery<br>and<br>equipment | Furniture,<br>fixtures<br>and office<br>equipment | Motor<br>vehicles | Assets under<br>construction | Total      |
|---|---------------------------------|-------------------------|-------------------------------|--------------------------|-------------------------------|---|-------------------|------------------------------|------------|
| <b>Cost</b>   |                                 |                         |                               |                          |                               |   |                   |                              |            |
| 31 December 2017  | 3,886,779                       | 406,442                 | 453,113                       | 40,710                   | 3,509,595                     | 277,792   | 154,030           | 94,951                       | 8,823,412  |
| Additions   | 1,432,045                       | -                       | 164,033                       | -                        | 95,205                        | 8,314   | 270               | 819,465                      | 2,519,332  |
| Disposals/write off   | -                               | -                       | -                             | -                        | (78,202)                      | (39,013)  | (33,202)          | -                            | (150,417)  |
| Reclassification/transfer in (out)  | (61,368)                        | -                       | -                             | 65,509                   | 152                           | 657   | -                 | (66,318)                     | (61,368)   |
| 31 December 2018  | 5,257,456                       | 406,442                 | 617,146                       | 106,219                  | 3,526,749                     | 247,750   | 121,098           | 848,098                      | 11,130,959 |
| <b>Accumulated depreciation</b>   |                                 |                         |                               |                          |                               |   |                   |                              |            |
| 31 December 2017  | 375,549                         | 96,566                  | 257,679                       | 21,897                   | 1,642,863                     | 203,054   | 147,120           | -                            | 2,744,728  |
| Depreciation for the year   | 42,983                          | 9,496                   | 99,713                        | 6,322                    | 270,526                       | 25,913  | 4,072             | -                            | 459,025    |
| Depreciation on disposals/write off   | -                               | -                       | -                             | -                        | (49,809)                      | (39,861)  | (33,176)          | -                            | (122,846)  |
| Reclassification/transfer in (out)  | (11,741)                        | -                       | -                             | -                        | 14                            | (14)  | -                 | -                            | (11,741)   |
| 31 December 2018  | 406,791                         | 106,062                 | 357,392                       | 28,219                   | 1,863,593                     | 189,092   | 118,016           | -                            | 3,069,166  |
| <b>Allowance for impairment loss</b>  |                                 |                         |                               |                          |                               |   |                   |                              |            |
| 31 December 2017  | 73,924                          | -                       | -                             | -                        | -                             | -   | -                 | -                            | 73,924     |
| 31 December 2018  | 73,924                          | -                       | -                             | -                        | -                             | -   | -                 | -                            | 73,924     |
| <b>Net book value</b>   |                                 |                         |                               |                          |                               |   |                   |                              |            |
| 31 December 2017  | 3,437,306                       | 309,876                 | 195,434                       | 18,813                   | 1,866,732                     | 74,738  | 6,910             | 94,951                       | 6,004,760  |
| 31 December 2018  | 4,776,741                       | 300,380                 | 259,754                       | 78,000                   | 1,663,156                     | 58,658  | 3,082             | 848,098                      | 7,987,869  |
| <b>Depreciation for the year</b>  |                                 |                         |                               |                          |                               |   |                   |                              |            |
| 2017 (Baht 140 million included in cost of construction services, sales of construction materials and services, and the balance in administrative expenses) |                                 |                         |                               |                          |                               |   |                   |                              | 399,528    |
| 2018 (Baht 163 million included in cost of construction services, sales of construction materials and services, and the balance in administrative expenses) |                                 |                         |                               |                          |                               |   |                   |                              | 459,025    |

As at 31 December 2018, the Company and its subsidiary had machinery, vehicles and equipment under finance lease agreements with net book values amounting to Baht 7 million (2017: Baht 52 million) (Separate financial statements: Baht 7 million (2017: Baht 52 million)).

As at 31 December 2018, certain plant and equipment items have been fully depreciated but are still in use. The gross carrying amount (before deducting accumulated depreciation) of those assets amounted to approximately Baht 3,648 million (2017: Baht 2,142 million) (Separate financial statements: Baht 1,651 million (2017: Baht 1,428 million)).

The Company is subject to restrictions on the sale, transfer or creation of obligations with respect to certain plots of land belonging to the Company, in compliance with a condition of the Company's long-term loans and debentures.

## 20. Intangible assets

Details of intangible assets which are computer software are as follows:

|   | (Unit: Thousand Baht) |               |                      |               |
|---|-----------------------|---------------|----------------------|---------------|
|   | Consolidated          |               | Separate             |               |
|   | financial statements  |               | financial statements |               |
|   | <u>2018</u>           | <u>2017</u>   | <u>2018</u>          | <u>2017</u>   |
| Cost  | 152,018               | 155,217       | 148,824              | 152,023       |
| Accumulated amortisation  | (111,880)             | (107,747)     | (109,273)            | (105,424)     |
| Net book value  | <u>40,138</u>         | <u>47,470</u> | <u>39,551</u>        | <u>46,599</u> |
| Amortisation expenses included in the profit or loss for the year | <u>10,230</u>         | <u>15,332</u> | <u>9,946</u>         | <u>14,824</u> |

A reconciliation of the net book value of intangible assets for the years 2018 and 2017 is presented below.

|  | (Unit: Thousand Baht) |               |                      |               |
|--|-----------------------|---------------|----------------------|---------------|
|  | Consolidated          |               | Separate             |               |
|  | financial statements  |               | financial statements |               |
|  | <u>2018</u>           | <u>2017</u>   | <u>2018</u>          | <u>2017</u>   |
| Net book value at beginning of year          | 47,470                | 58,656        | 46,599               | 56,732        |
| Acquisition of computer software             | 2,898                 | 5,191         | 2,898                | 4,691         |
| Amortisation                                 | (10,230)              | (15,332)      | (9,946)              | (14,824)      |
| Disposal of the subsidiary during the period |                       |               |                      |               |
| - net book value at disposal date            | -                     | (1,045)       | -                    | -             |
| Net book value at end of year                | <u>40,138</u>         | <u>47,470</u> | <u>39,551</u>        | <u>46,599</u> |

## 21. Bank overdrafts and short-term loans from financial institutions

(Unit: Thousand Baht)

|                             | Interest rate<br>(% p.a.)          | Consolidated<br>financial statements |                  | Separate financial<br>statements |                  |
|-----------------------------|------------------------------------|--------------------------------------|------------------|----------------------------------|------------------|
|                             |                                    | <u>2018</u>                          | <u>2017</u>      | <u>2018</u>                      | <u>2017</u>      |
| Short-term loans from banks | 1.76 to 2.65                       | 2,472,599                            | 2,560,000        | 2,342,599                        | 2,480,000        |
| Trust receipts              | 3.625                              | 947,367                              | 2,105,387        | 655,100                          | 1,177,965        |
|                             | LIBOR + margin and<br>MLR - margin |                                      |                  |                                  |                  |
| Bills of exchange           | 1.73 to 1.88                       | <u>2,900,000</u>                     | <u>3,600,000</u> | <u>2,900,000</u>                 | <u>3,600,000</u> |
| Total                       |                                    | <u>6,319,966</u>                     | <u>8,265,387</u> | <u>5,897,699</u>                 | <u>7,257,965</u> |

Parts of the short-term loans from financial institutions of the Company are secured by the transfer of rights over collection of revenues from construction projects.

Bank overdrafts and short-term loans from financial institutions of subsidiaries are secured by certain share certificates of Bangkok Expressway and Metro Public Company Limited owned by a subsidiary, the transfer of the rights over saving deposits of a subsidiary, the transfer of rights over receipt of payment under construction contracts of subsidiaries, the transfer of bank guarantees provided by subcontractors and are guaranteed by the Company and subsidiaries' shareholders.

Trust receipts of subsidiaries are guaranteed by the Company.

## 22. Trade and other payables

(Unit: Thousand Baht)

|                                    | Consolidated<br>financial statements |                  | Separate<br>financial statements |                  |
|------------------------------------|--------------------------------------|------------------|----------------------------------|------------------|
|                                    | <u>2018</u>                          | <u>2017</u>      | <u>2018</u>                      | <u>2017</u>      |
| Trade payables - related parties   | 37,986                               | 44,299           | 136,724                          | 142,555          |
| Trade payables - unrelated parties | 4,757,971                            | 3,357,109        | 4,382,281                        | 2,401,853        |
| Amounts due to related parties     | 24,192                               | 24,390           | 20,400                           | 20,598           |
| Accrued interest expenses          | 182,376                              | 155,934          | 182,376                          | 155,934          |
| Accrued expenses                   | 368,286                              | 409,427          | 279,577                          | 283,593          |
| Other payables                     | <u>25,694</u>                        | <u>46,514</u>    | <u>19,395</u>                    | <u>41,842</u>    |
| Total trade and other payables     | <u>5,396,505</u>                     | <u>4,037,673</u> | <u>5,020,753</u>                 | <u>3,046,375</u> |

## 23. Hire purchase creditors

(Unit: Thousand Baht)

|  | Consolidated and separate<br>financial statements |               |
|--|---|---------------|
|  | <u>2018</u>                                       | <u>2017</u>   |
| Liabilities under hire purchase                          | 1,378   | 14,879        |
| Less: Deferred interest expenses                         | (24)  | (273)         |
|  | <u>1,354</u>                                      | <u>14,606</u> |
| Less: Portion due within one year                        | (1,325)   | (13,252)      |
| Liabilities under hire purchase - net of current portion | <u>29</u>   | <u>1,354</u>  |

The Company has entered into hire purchase agreements with leasing companies for rental of equipment and motor vehicles for use in their operation, whereby they are committed to pay rental on a monthly basis. The terms of the agreements are generally between 3 to 5 years.

## 24. Long-term loans

As at 31 December 2018 and 2017, the balances of the long-term loans are as follows:

(Unit: Thousand Baht)

|  | Consolidated and separate<br>financial statements |                  |
|--|---|------------------|
|  | <u>2018</u>                                       | <u>2017</u>      |
| CH. Karnchang Public Company Limited     | 840,443   | 1,461,703        |
| Joint Venture CKCH                       | -   | 1,070,370        |
| Long-term loans                          | <u>840,443</u>                                    | <u>2,532,073</u> |
| Less: Current portion                    | (325,000)   | (1,695,370)      |
| Long-term loans - net of current portion | <u>515,443</u>                                    | <u>836,703</u>   |

Movements in the long-term loans account during the year ended 31 December 2018 are summarised below.

|                                 | (Unit: Thousand Baht)                             |
|---------------------------------|---|
|                                 | Consolidated and separate<br>financial statements |
| Balance as at 1 January 2018    | 2,545,370   |
| Less: Repayment during the year | (1,695,370)                                       |
|                                 | 850,000   |
| Less: Deferred front end fees   | (9,557)   |
| Balance as at 31 December 2018  | 840,443   |

As at 31 December 2018, the Company's long-term loans from bank comprise two credit facilities from a local commercial banks. The balance of loan amounting to Baht 850 million carry interest at the Minimum Loan Rate minus a stipulated margin (MLR - margin) per annum and the loan principals are to be repaid in semi-annual base. Full settlement of these loans are to be made within October 2020 to November 2021.

Under the loan agreement, the Company is required to comply with the same conditions and restrictions as those applicable for the Company's debentures (as described in Note 25 to the financial statements) and to maintain a certain debt to equity ratio.

## 25. Debentures

(Unit: Thousand Baht)

|  |                   |                  |                  |                              | Consolidated and separate<br>financial statements |             |
|--|-------------------|------------------|------------------|------------------------------|---|-------------|
| Debentures                             | Life              | Date of issue    | Maturity date    | Interest rate                | 2018  | 2017        |
|  |                   |                  |                  | (% p.a.)                     |   |             |
| 1                                      | 6 years 9 months  | 28 October 2011  | 28 July 2018     | 5.40, 5.75, 6.25<br>and 6.75 | -   | 1,000,000   |
| 2                                      | 3 years           | 7 August 2015    | 7 August 2018    | 2.52                         | -   | 1,000,000   |
| 3                                      | 4 years           | 7 August 2015    | 7 August 2019    | 2.85                         | 500,000   | 500,000     |
| 4                                      | 3 years           | 7 March 2016     | 7 March 2019     | 2.19                         | 1,500,000   | 1,500,000   |
| 5                                      | 7 years           | 7 March 2016     | 7 March 2023     | 3.36                         | -   | 4,000,000   |
| 6                                      | 7 years           | 26 May 2016      | 26 May 2023      | 3.22                         | 1,000,000   | 1,000,000   |
| 7                                      | 8 years           | 7 June 2016      | 7 June 2024      | 3.50                         | 500,000   | 500,000     |
| 8                                      | 3 years           | 8 July 2016      | 8 July 2019      | 2.24                         | 2,500,000   | 2,500,000   |
| 9                                      | 8 years           | 8 July 2016      | 8 July 2024      | 3.51                         | 1,500,000   | 1,500,000   |
| 10                                     | 10 years          | 8 July 2016      | 8 July 2026      | 3.82                         | 2,700,000   | 2,700,000   |
| 11                                     | 11 years 8 months | 8 July 2016      | 8 March 2028     | 3.99                         | 800,000   | 800,000     |
| 12                                     | 11 years          | 11 July 2016     | 11 July 2027     | 3.95                         | 1,000,000   | 1,000,000   |
| 13                                     | 11 years          | 8 November 2016  | 8 November 2027  | 4.05                         | 1,000,000   | 1,000,000   |
| 14                                     | 11 years          | 17 November 2016 | 17 November 2027 | 4.05                         | 500,000   | 500,000     |
| 15                                     | 4 years           | 26 May 2017      | 26 May 2021      | 2.97                         | 2,250,000   | 2,250,000   |
| 16                                     | 7 years           | 26 May 2017      | 26 May 2024      | 3.80                         | 1,600,000   | 1,600,000   |
| 17                                     | 10 years          | 26 May 2017      | 26 May 2027      | 4.19                         | 1,150,000   | 1,150,000   |
| 18                                     | 12 years          | 26 May 2017      | 26 May 2029      | 4.32                         | 1,000,000   | 1,000,000   |
| 19                                     | 3 years           | 3 November 2017  | 3 November 2020  | 2.24                         | 1,000,000   | 1,000,000   |
| 20                                     | 8 years           | 3 November 2017  | 3 November 2025  | 3.34                         | 1,000,000   | 1,000,000   |
| 21                                     | 10 years          | 3 November 2017  | 3 November 2027  | 3.65                         | 1,000,000   | 1,000,000   |
| 22                                     | 4 years           | 21 May 2018      | 21 May 2022      | 2.48                         | 1,600,000   | -           |
| 23                                     | 5 years           | 21 May 2018      | 21 May 2023      | 2.74                         | 2,700,000   | -           |
| 24                                     | 3 years           | 25 July 2018     | 25 July 2021     | 2.60                         | 820,000   | -           |
| 25                                     | 4 years           | 25 July 2018     | 25 July 2022     | 2.80                         | 910,000   | -           |
| 26                                     | 10 years          | 25 July 2018     | 25 July 2028     | 4.00                         | 1,020,000   | -           |
| Total                                  |                   |                  |                  |                              | 29,550,000  | 28,500,000  |
| Less: Deferred debenture issuing costs |                   |                  |                  |                              | (15,777)  | (18,067)    |
| Less: Current portion of debentures    |                   |                  |                  |                              | (4,500,000)                                       | (2,000,000) |
| Debentures - net of current portion    |                   |                  |                  |                              | 25,034,223  | 26,481,933  |

Movements in the debentures account during the year ended 31 December 2018 are summarised below.

|   | (Unit: Thousand Baht)                             |
|---|---|
|   | Consolidated and separate<br>financial statements |
| Balance as at 1 January 2018                | 28,500,000  |
| Add: Issuance of debentures during the year | 7,050,000   |
| Less: Repayment debentures during the year  | (6,000,000)                                       |
|   | 29,550,000  |
| Less: Deferred debenture issuing costs      | (15,777)  |
| Balance as at 31 December 2018              | 29,534,223  |

All debentures of the Company are unsecured, registered, senior debentures with trustees and with a par value of Baht 1,000 each. The interest is payable every 3 months throughout the life of the debenture, except for the interest of debentures presented in item 13, 14 and 19 to 26 of the above table is payable every 6 months.

Debentures presented in item 1 of the above table carry interest at four rates, with the first rate applicable for the first and the second year, the second rate applicable for the third and the fourth year, the third rate applicable for the fifth year and the sixth year and the fourth rate applicable for the remaining period of 9 months.

The conditions of the debentures include covenants that, among other things, prohibit the Company from selling, transferring or creating any commitments with respect to some share certificates for its investment in an associated company and some plots of land of the Company and require it to maintain a certain debt to equity ratio.



## 26. Provision for long-term employee benefits

Provision for long-term employee benefits, which represents compensation payable to employees after they retire, was as follows:

|  | (Unit: Thousand Baht) |                |                      |                |
|--|-----------------------|----------------|----------------------|----------------|
|  | Consolidated          |                | Separate             |                |
|  | financial statements  |                | financial statements |                |
|  | <u>2018</u>           | <u>2017</u>    | <u>2018</u>          | <u>2017</u>    |
| <b>Defined benefit obligation at beginning of year</b>   | 725,164               | 612,159        | 393,612              | 299,557        |
| Current service cost                                     | 101,506               | 160,071        | 54,523               | 91,123         |
| Interest cost  | 13,317                | 15,046         | 8,921                | 8,873          |
| Past service costs and gains or losses on settlement     | 117,726               | -              | 91,394               | -              |
| Actuarial (gain) loss arising from                       |                       |                |                      |                |
| Demographic assumptions changes                          | 3,300                 | 61,457         | -                    | 49,561         |
| Financial assumptions changes                            | (4,642)               | (56,652)       | -                    | (36,519)       |
| Experience adjustments                                   | (3,314)               | (18,413)       | -                    | (5,964)        |
| Benefits paid during the year                            | (94,277)              | (39,230)       | (13,204)             | (13,019)       |
| Decrease from disposal of the subsidiary during the year | -                     | (9,274)        | -                    | -              |
| <b>Provisions for long-term employee</b>                 |                       |                |                      |                |
| <b>benefits at end of year</b>                           | <u>858,780</u>        | <u>725,164</u> | <u>535,246</u>       | <u>393,612</u> |

The Company and its subsidiaries expect to pay Baht 25 million of long-term employee benefits during the next year (2017: Baht 180 million) (Separate financial statements: Baht 15 million (2017: Baht 108 million)).

As at 31 December 2018, the weighted average duration of the liabilities for long-term employee benefit is 4.0 - 12.4 years (2017: 4.0 - 11.7 years) (Separate financial statements: 10.6 years (2017: 10.4 years)).

Significant actuarial assumptions are summarised below.

|  | Consolidated and<br>separate financial statements |               |
|--|---|---------------|
|  | <u>2018</u>                                       | <u>2017</u>   |
|  | (% per annum)                                     | (% per annum) |
| Discount rate  | 1.62 - 2.71                                       | 1.62 - 2.71   |
| Future salary increase rate - average<br>(depending on age of employees) | 0 - 6.0   | 0 - 6.0       |
| Staff turnover rate - average  | 0 - 28.65   | 0 - 28.65     |

The result of sensitivity analysis for significant assumptions that affect the present value of the long-term employee benefit obligation as at 31 December 2018 and 2017 are summarised below:

(Unit: Million Baht)

|                      | As at 31 December 2018 |                    |                      |                    |
|----------------------|------------------------|--------------------|----------------------|--------------------|
|                      | Consolidated           |                    | Separate             |                    |
|                      | financial statements   |                    | financial statements |                    |
|                      | <u>Increase 1%</u>     | <u>Decrease 1%</u> | <u>Increase 1%</u>   | <u>Decrease 1%</u> |
| Discount rate        | (49.51)                | 57.42              | (30.15)              | 34.66              |
| Salary increase rate | 60.37                  | (53.01)            | 36.90                | (32.68)            |
| Turnover rate        | (50.23)                | 49.72              | (30.55)              | 31.97              |

(Unit: Million Baht)

|                      | As at 31 December 2017 |                    |                      |                    |
|----------------------|------------------------|--------------------|----------------------|--------------------|
|                      | Consolidated           |                    | Separate             |                    |
|                      | financial statements   |                    | financial statements |                    |
|                      | <u>Increase 1%</u>     | <u>Decrease 1%</u> | <u>Increase 1%</u>   | <u>Decrease 1%</u> |
| Discount rate        | (39.66)                | 46.02              | (23.29)              | 26.81              |
| Salary increase rate | 45.17                  | (39.74)            | 25.64                | (22.80)            |
| Turnover rate        | (36.66)                | 34.39              | (20.99)              | 21.69              |

On 13 December 2018, The National Legislative Assembly passed a resolution approving the draft of a new Labour Protection Act, which is in the process being published in the Royal Gazette. The new Labour Protection Act stipulates additional legal severance pay rates for employees who have worked for an uninterrupted period of twenty years or more. Such employees are entitled to receive not less than 400 days' compensation at the latest wage rate. This change is considered a post-employment benefits plan amendment and the Company and its subsidiaries have additional liabilities for long-term employee benefits. The Company and its subsidiaries have recorded the effect of the change by recognising past services costs as expenses immediately in the income statement for the year 2018.

## 27. Statutory reserve

Pursuant to Section 116 of the Public Limited Companies Act B.E. 2535, the Company is required to set aside to a statutory reserve at least 5 percent of its net profit after deducting accumulated deficit brought forward (if any), until the reserve reaches 10 percent of the registered capital. The statutory reserve is not available for dividend distribution.

## **28. Accounts receivable - claims for additional costs**

In 2000, Joint Venture BBCD had claimed for payment of additional construction costs from the Expressway Authority of Thailand (the employer). The employer's consulting engineer considered the joint venture's claims and issued a letter confirming its acceptance of the additional costs. Subsequently, the Arbitral Tribunal issued its award, ruling that the employer was to pay the joint venture for such additional costs and accrued interest. Later the employer sent a letter to the joint venture informing that, after consideration, the employer had decided to comply with the arbitral award. Consequently, the joint venture had recorded such amounts as asset and income in the financial statements of 2001. The Company's interest in the joint operation is approximately Baht 2,500 million.

As a result of the delay in the payment, the joint venture filed a lawsuit against the employer with a Civil Court to order compliance with the arbitral award. On 30 December 2003, the court ruled in favor of the joint venture, ordering compliance with the arbitral award requiring the Expressway Authority of Thailand (the employer) to pay the joint venture in accordance with the arbitral award. Subsequently, in January 2004, the employer appealed the ruling to the Supreme Court of Thailand.

On 15 February 2007, the Supreme Court handed down a judgment reversing that of the Civil Court enforcing the arbitral award requiring the employer to make payments to the Joint Venture BBCD. The joint venture therefore recorded allowance for doubtful accounts for the full amount of the accounts receivable recorded in respect of the claim for additional costs as an expense in the profit or loss of 2006, with the Company's interest in the joint operation being approximately Baht 2,500 million.

Subsequently, after the management of the Company carefully reviewed the details of the Supreme Court's judgment, on 11 February 2008 a lawsuit was filed against the employer with the Civil Court, to recover costs paid by the Joint Venture BBCD from the employer, on the grounds of undue enrichment. Such costs and accrued interest calculated up to the date of filing of the lawsuit amounted to approximately Baht 3,400 million (per the Company's interest in the joint operation).

On 15 September 2011, the Civil Court handed down a judgment ruling that the employer was to pay the Joint Venture BBCD Baht 1,750 million (per the Company's interest in the joint operation) together with interest at a rate of 7.5 percent per annum on the principal from 15 February 2007 to the date that employer pays the debt to the Joint Venture BBCD. The employer and the Joint Venture BBCD appealed the ruling to the Appeal Court.

On 27 December 2013, the Appeal Court overturned the judgment made in favor of the Joint Venture BBCD. Subsequently, in February 2014 the joint venture filed an appeal with the Supreme Court, petitioning it to enforce the employer's payment of all additional costs and accrued interest until payment is made.

Subsequently, on 22 June 2017, the Supreme Court upheld the judgment of the Appeal Court, dismissing the petition of Joint Venture BBCD. Currently, the Company is in the process of exploring legal means and issues in order to continue with the lawsuit, and has assigned a team of legal consultants to study means to proceed with the case to be presented to the management for consideration in the near future.

## 29. Expenses by nature

Significant expenses classified by nature are as follows:

|  | (Unit: Thousand Baht) |             |                      |             |
|--|-----------------------|-------------|----------------------|-------------|
|  | Consolidated          |             | Separate             |             |
|  | financial statements  |             | financial statements |             |
|  | <u>2018</u>           | <u>2017</u> | <u>2018</u>          | <u>2017</u> |
| Salaries and wages and other employee        |                       |             |                      |             |
| benefits                                     | 3,678,512             | 3,772,901   | 2,067,036            | 1,825,077   |
| Depreciation                                 | 695,294               | 977,986     | 471,233              | 406,257     |
| Construction materials and consumables used  |                       |             |                      |             |
| and subcontractors costs                     | 21,670,638            | 26,623,691  | 17,143,732           | 14,219,142  |
| Repair and maintenance expenses              | 103,984               | 150,336     | 44,768               | 59,875      |
| Allowance for doubtful accounts              | -                     | 283,913     | -                    | 283,913     |
| Loss from written off of plant and equipment | 294,009               | 4,945       | 1,514                | 2,172       |

### 30. Income tax

Income tax expenses for the years ended 31 December 2018 and 2017 are made up as follows:

|   | (Unit: Thousand Baht) |               |                      |               |
|---|-----------------------|---------------|----------------------|---------------|
|   | Consolidated          |               | Separate             |               |
|   | financial statements  |               | financial statements |               |
|   | <u>2018</u>           | <u>2017</u>   | <u>2018</u>          | <u>2017</u>   |
| <b>Current income tax:</b>  |                       |               |                      |               |
| Current income tax charge   | 156,262               | 96,894        | 156,262              | 77,097        |
| <b>Deferred tax:</b>  |                       |               |                      |               |
| Relating to origination and reversal of temporary differences               | (17,482)              | (6,001)       | (17,408)             | (11,133)      |
| <b>Income tax expense reported in the statement of comprehensive income</b> | <u>138,780</u>        | <u>90,893</u> | <u>138,854</u>       | <u>65,964</u> |

The amounts of income tax relating to each component of other comprehensive income for the years ended 31 December 2018 and 2017 are as follows:

|   | (Unit: Thousand Baht) |                |                      |                |
|---|-----------------------|----------------|----------------------|----------------|
|   | Consolidated          |                | Separate             |                |
|   | financial statements  |                | financial statements |                |
|   | <u>2018</u>           | <u>2017</u>    | <u>2018</u>          | <u>2017</u>    |
| Deferred tax relating to  |                       |                |                      |                |
| Gain (loss) on changes in value of available-for-sale investments | (35,217)              | 278,523        | (35,217)             | 278,523        |
| Unrealised loss from cash flow hedges                             | (33,851)              | (16,549)       | (33,851)             | (16,549)       |
| Actuarial gain (loss)   | 930                   | (1,801)        | -                    | (1,416)        |
|   | <u>(68,138)</u>       | <u>260,173</u> | <u>(69,068)</u>      | <u>260,558</u> |

The reconciliation between accounting profit and income tax expenses is shown below.

(Unit: Thousand Baht)

|  | Consolidated         |             | Separate             |             |
|--|----------------------|-------------|----------------------|-------------|
|  | financial statements |             | financial statements |             |
|  | <u>2018</u>          | <u>2017</u> | <u>2018</u>          | <u>2017</u> |
| Accounting profit before tax   | 2,625,182            | 1,941,623   | 1,378,894            | 845,192     |
| Applicable tax rate  | 20%                  | 20%         | 20%                  | 20%         |
| Accounting profit before tax multiplied by<br>income tax rate            | 525,036              | 388,325     | 275,779              | 169,038     |
| Effects of:  |                      |             |                      |             |
| Non-deductible expenses  | 25,288               | 14,159      | 24,554               | 13,601      |
| Additional expense deduction allowed                                     | (5,890)              | (6,293)     | (4,856)              | (5,127)     |
| Exemption of income  | (94,349)             | (91,288)    | (231,425)            | (234,942)   |
| Additional taxable income  | 40,480               | 38,028      | 40,480               | 38,028      |
| Profit of a subsidiary granted tax-exemption<br>privileges               | (56,908)             | (154,352)   | -                    | -           |
| Share of profit from investments in associated<br>companies              | (331,526)            | (164,586)   | -                    | -           |
| Deferred tax assets which were not recognised<br>during the year         |                      |             |                      |             |
| - Tax losses   | 38,556               | 29,652      | 31,208               | 28,029      |
| - Allowance for doubtful accounts  | -                    | 56,543      | -                    | 56,543      |
| Others   | (1,907)              | (19,295)    | 3,114                | 794         |
| Total  | (386,256)            | (297,432)   | (136,925)            | (103,074)   |
| Income tax expenses reported in the statement of<br>comprehensive income | 138,780              | 90,893      | 138,854              | 65,964      |

The components of deferred tax assets and deferred tax liabilities are as follows:

(Unit: Thousand Baht)

|  | Statements of financial position |                  |                      |                  |
|--|----------------------------------|------------------|----------------------|------------------|
|  | Consolidated                     |                  | Separate             |                  |
|  | financial statements             |                  | financial statements |                  |
|  | <u>2018</u>                      | <u>2017</u>      | <u>2018</u>          | <u>2017</u>      |
| <b>Deferred tax assets</b>                         |                                  |                  |                      |                  |
| Property, plant and equipment                      | 8,623                            | 8,670            | 119                  | 166              |
| Provision for long-term employee benefits          | 124,273                          | 96,154           | 107,049              | 78,722           |
| Derivative financial liabilities                   | 37,108                           | 12,677           | 37,108               | 12,677           |
| Others   | 6,683                            | 6,877            | 6,523                | 6,069            |
| <b>Total</b>                                       | <b>176,687</b>                   | <b>124,378</b>   | <b>150,799</b>       | <b>97,634</b>    |
| <b>Deferred tax liabilities</b>                    |                                  |                  |                      |                  |
| Unrealised gain on changes in value of investments | 2,216,965                        | 2,252,010        | 2,160,955            | 2,196,000        |
| Property, plant and equipment                      | 452                              | 580              | 452                  | 580              |
| Amortisation of deferred debenture issuing costs   | 3,155                            | 3,613            | 3,155                | 3,613            |
| Others   | 4,980                            | 2,660            | 4,980                | 2,660            |
| <b>Total</b>                                       | <b>2,225,552</b>                 | <b>2,258,863</b> | <b>2,169,542</b>     | <b>2,202,853</b> |

As at 31 December 2018, the Company and its subsidiaries have unused tax losses totaling Baht 370 million (2017: Baht 170 million), on which deferred tax assets have not been recognised as the Company and its subsidiaries believe future taxable profits may not be sufficient to allow utilisation of the temporary differences and unused tax losses.

The unused tax losses amounting to Baht 370 million will expire by 2023.

### 31. Earnings per share

Basic earnings per share is calculated by dividing profit for the year attributable to equity holders of the Company (excluding other comprehensive income) by the weighted average number of ordinary shares in issue during the year.

### 32. Contracts in progress

As at 31 December 2018, the aggregate amount of construction cost incurred and recognised profits or losses to date for contracts in progress of the Company and its subsidiaries was approximately Baht 192,146 million (2017: Baht 168,955 million) (Separate financial statements: Baht 100,176 million (2017: Baht 80,955 million)), gross amounts due from customers for contracts in progress were approximately Baht 3,315 million (2017: Baht 7,303 million) (Separate financial statements: Baht 3,134 million (2017: Baht 4,685 million)), and gross amounts due to customers for contracts in progress were approximately Baht 7,726 million (2017: Baht 3,379 million) (Separate financial statements: Baht 5,016 million (2017: Baht 3,128 million)).



### 33. Segment information

Operating segment information is reported in a manner consistent with the internal reports that are regularly reviewed by the chief operating decision maker in order to make decisions about the allocation of resources to the segment and assess its performance. The chief operating decision maker has been identified as the Chairman of the Executive Board.

The Group is principally engaged in construction and provision of related services and investment in infrastructure, and the two geographic areas in which these activities are carried on are Thailand and the Lao People's Democratic Republic, where operations are carried out by a subsidiary.

The performance of operating segments is measured on a basis consistent with that used to determine the profit or loss of the operations reported in the financial statements. The profit or loss of the investment in infrastructure business segment comprised dividend income, share of profit or loss from investments under the equity method, gains or losses on sales of investments and related finance costs.

Inter-segment revenues are eliminated on consolidation.

The following tables present revenue, profit and total assets information regarding the Company and its subsidiaries operating segments for the year ended 31 December 2018 and 2017:

(Unit: Million Baht)

|   | Construction and<br>related<br>service segment |             | Investment in<br>infrastructure<br>business segment |              | Consolidated |              |
|---|--|-------------|---|--------------|--------------|--------------|
|   | <u>2018</u>                                    | <u>2017</u> | <u>2018</u>   | <u>2017</u>  | <u>2018</u>  | <u>2017</u>  |
| <b>Revenue</b>  |  |             |   |              |              |              |
| Revenue from external customers                             | 29,687   | 36,271      | 1,489   | 1,460        | 31,176       | 37,731       |
| Share of profit from investments in<br>associated companies | -  | -           | 1,658   | 823          | 1,658        | 823          |
| Administrative expenses                                     | 1,327  | 1,621       | 658   | 510          | 1,985        | 2,131        |
| Interest expenses   | 586  | 707         | 662   | 686          | 1,248        | 1,393        |
| <b>Segment operating profit</b>                             | <b>798</b>                                     | <b>855</b>  | <b>1,827</b>  | <b>1,087</b> | <b>2,625</b> | <b>1,942</b> |
| Unallocated expenses:                                       |  |             |   |              |              |              |
| Income tax expenses   |  |             |   |              | (139)        | (91)         |
| Profit for the year   |  |             |   |              | 2,486        | 1,851        |

## Geographic information for construction and related service segment

|  | (Unit: Million Baht) |               |
|--|----------------------|---------------|
|  | <u>2018</u>          | <u>2017</u>   |
| Revenue from external customers is based on locations of the customers |                      |               |
| Thailand   | 23,282               | 21,874        |
| The Lao People's Democratic Republic                                   | 6,282                | 14,252        |
| Total  | <u>29,564</u>        | <u>36,126</u> |

|                                      | (Unit: Million Baht) |               |
|--------------------------------------|----------------------|---------------|
|                                      | <u>2018</u>          | <u>2017</u>   |
| Non-current assets*                  |                      |               |
| Thailand                             | 55,071               | 48,559        |
| The Lao People's Democratic Republic | 1,704                | 2,196         |
| Total                                | <u>56,775</u>        | <u>50,755</u> |

\*Other than financial instruments and deferred tax assets.

### Major customers

In 2018, the Company and its subsidiaries had revenues from provision of construction services to major customers, which consisted of a group of government agencies and two private customers, amounting to Baht 13,927 million, Baht 7,699 million and Baht 5,852 million, respectively, arising from the construction and related service segment (2017: revenues from provision of construction services to major customers which consisted of a group of government agencies and two private customers, amounting to Baht 11,307 million, Baht 6,064 million and Baht 12,897 million, respectively).

## 34. Provident funds

The Company, some subsidiaries and their employees have jointly established provident funds in accordance with the Provident Fund Act B.E. 2530. The Company and its subsidiaries contribute to the funds monthly at the rates of 2 to 10 percent of basic salary and their employees contribute to the funds monthly at the rates of 2 to 15 percent of basic salary. The funds, which are managed by Krung Thai Asset Management Public Company Limited and TISCO Asset Management Company Limited (Separate financial statements: Krung Thai Asset Management Public Company Limited) will be paid to employees upon termination in accordance with the fund rules. The contribution for the years 2018 and 2017 were recognised as expenses amounting to Baht 85.2 million and Baht 77.5 million, respectively (Separate financial statements: Baht 72.1 million and Baht 68.7 million, respectively).

### 35. Dividends payment

| Dividends  | Approved by  | Total dividends<br>(Million Baht) | Dividend per share<br>(Baht) |
|--|--|-----------------------------------|------------------------------|
| Final dividends for 2016                             | The 2017 Annual General Meeting of the shareholders on 28 April 2017 | 423.3                             | 0.25                         |
| Interim dividends for 2017                           | Board of Directors Meeting on 14 September 2017                      | 423.3                             | 0.25                         |
| Dividend payment for the year ended 31 December 2017 |  | 846.6                             | 0.50                         |
| Final dividends for 2017                             | The 2018 Annual General Meeting of the shareholders on 27 April 2018 | 423.2                             | 0.25                         |
| Interim dividends for 2018                           | Board of Directors Meeting on 14 August 2018                         | 338.8                             | 0.20                         |
| Dividend payment for the year ended 31 December 2018 |  | 762.0                             | 0.45                         |

### 36. Commitments and contingent liabilities

#### 36.1 Capital commitments

As at 31 December 2018, the Company had capital commitment of approximately Baht 734 million, Japanese Yen 215 million and Swedish Krona 1 million (2017: Baht 349 million) relating to the acquisition of plant and equipment.

#### 36.2 Operating lease commitments

The Company and its subsidiaries had rental commitments in respect of lease agreements for office building space and office equipment. The terms of the agreements are generally between 1 to 6 years.

As at 31 December 2018, future minimum lease payments required under these operating lease contracts were as follows.

|                             | (Unit: Million Baht)                 |             |                                  |             |
|-----------------------------|--------------------------------------|-------------|----------------------------------|-------------|
|                             | Consolidated<br>financial statements |             | Separate<br>financial statements |             |
|                             | <u>2018</u>                          | <u>2017</u> | <u>2018</u>                      | <u>2017</u> |
| Payable:                    |                                      |             |                                  |             |
| In up to 1 year             | 38                                   | 21          | 37                               | 20          |
| In over 1 and up to 5 years | 70                                   | 54          | 70                               | 54          |
| In over 5 years             | 1                                    | 7           | 1                                | 7           |

### 36.3 Service commitments and other commitments

As at 31 December 2018, the Company and its subsidiaries have the following service commitments and other commitments:

- a) The Company and its subsidiaries have commitments totaling Baht 19,525 million, Euro 78 million, USD 58 million and Japanese Yen 48 million (2017: Baht 35,575 million, Euro 130 million and USD 96 million) (Separate financial statements: Baht 15,037 million, Euro 78 million, USD 10 million and Japanese Yen 48 million (2017: Baht 25,391 million, Euro 130 million and USD 16 million)) in respect of project construction costs and services, which the Company and its subsidiaries had already entered into agreements.
- b) The Company has a commitment in respect of its undertakings to provide financial support to an associated company, as stipulated in the conditions in the agreement (as described in Note 6e) to the financial statements).
- c) The subsidiary has a commitment to inject capital of Baht 253 million into an associated company for used in the development and management of the elderly residential project (2017: Baht 231 million).

### 36.4 Related party guarantees

As at 31 December 2018, the Company has provided guarantees totaling Baht 23,728 million for bank credit facilities on behalf of a subsidiary (2017: Baht 24,198 million).

### 36.5 Bank guarantees

As at 31 December 2018 and 2017, there were outstanding bank guarantees issued by banks on behalf of the Company and its subsidiaries in respect of certain performance bonds as required in the normal course of business of the Company and its subsidiaries. The details of bank guarantees are as follows:

|   | (Unit: Million Baht) |               |                      |               |
|---|----------------------|---------------|----------------------|---------------|
|   | Consolidated         |               | Separate             |               |
|   | financial statements |               | financial statements |               |
|   | <u>2018</u>          | <u>2017</u>   | <u>2018</u>          | <u>2017</u>   |
| Guarantee of construction contracts, bidding and debt repayment | 16,278               | 19,253        | 11,205               | 14,118        |
| Guarantee of advance payment bond and retention                 | 8,836                | 9,985         | 6,296                | 7,236         |
| Other guarantees  | 178                  | 260           | 146                  | 126           |
|   | <u>25,292</u>        | <u>29,498</u> | <u>17,647</u>        | <u>21,480</u> |

### 37. Fair value hierarchy

As at 31 December 2018 and 2017, the Company and its subsidiaries had the assets and liabilities that were measured at fair value or disclosed the fair value using different levels of inputs as follows:

(Unit: Million Baht)

|   | Consolidated financial statements |             |             |             |             |             |             |             |
|---|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|   | Level 1                           |             | Level 2     |             | Level 3     |             | Total       |             |
|   | <u>2018</u>                       | <u>2017</u> | <u>2018</u> | <u>2017</u> | <u>2018</u> | <u>2017</u> | <u>2018</u> | <u>2017</u> |
| <b>Financial assets measured at fair value</b>      |                                   |             |             |             |             |             |             |             |
| Held for trade investments                          |                                   |             |             |             |             |             |             |             |
| Equity instruments                                  | 7                                 | 6           | -           | -           | -           | -           | 7           | 6           |
| Available-for-sale investments                      |                                   |             |             |             |             |             |             |             |
| Equity instruments                                  | 9,521                             | 9,676       | -           | -           | -           | -           | 9,521       | 9,676       |
| Debt instruments                                    | -                                 | -           | 378         | 2,202       | -           | -           | 378         | 2,202       |
| <b>Financial liabilities measured at fair value</b> |                                   |             |             |             |             |             |             |             |
| Derivatives   |                                   |             |             |             |             |             |             |             |
| Foreign currency forward contracts                  | -                                 | -           | 316         | 198         | -           | -           | 316         | 198         |
| <b>Assets for which fair value are disclosed</b>    |                                   |             |             |             |             |             |             |             |
| Investment in associated companies                  | 57,081                            | 44,497      | -           | -           | -           | -           | 57,081      | 44,497      |
| Investment properties                               | -                                 | -           | 1,426       | 1,215       | -           | -           | 1,426       | 1,215       |
| Derivatives   |                                   |             |             |             |             |             |             |             |
| Interest rate swap contracts                        | -                                 | -           | -           | 13          | -           | -           | -           | 13          |

(Unit: Million Baht)

|   | Separate financial statements |             |             |             |             |             |             |             |
|---|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|   | Level 1                       |             | Level 2     |             | Level 3     |             | Total       |             |
|   | <u>2018</u>                   | <u>2017</u> | <u>2018</u> | <u>2017</u> | <u>2018</u> | <u>2017</u> | <u>2018</u> | <u>2017</u> |
| <b>Financial assets measured at fair value</b>      |                               |             |             |             |             |             |             |             |
| Held for trade investments                          |                               |             |             |             |             |             |             |             |
| Equity instruments                                  | 7                             | 6           | -           | -           | -           | -           | 7           | 6           |
| Available-for-sale investments                      |                               |             |             |             |             |             |             |             |
| Equity instruments                                  | 9,521                         | 9,676       | -           | -           | -           | -           | 9,521       | 9,676       |
| Debt instruments                                    | -                             | -           | 327         | 2,170       | -           | -           | 327         | 2,170       |
| <b>Financial liabilities measured at fair value</b> |                               |             |             |             |             |             |             |             |
| Derivatives   |                               |             |             |             |             |             |             |             |
| Foreign currency forward contracts                  | -                             | -           | 201         | 62          | -           | -           | 201         | 62          |
| <b>Assets for which fair value are disclosed</b>    |                               |             |             |             |             |             |             |             |
| Investment in associated companies                  | 55,756                        | 43,444      | -           | -           | -           | -           | 55,756      | 43,444      |
| Investment properties                               | -                             | -           | 1,124       | 1,124       | -           | -           | 1,124       | 1,124       |
| Derivatives   |                               |             |             |             |             |             |             |             |
| Interest rate swap contracts                        | -                             | -           | -           | 13          | -           | -           | -           | 13          |

## 38. Financial instruments

### 38.1 Financial risk management

The Company's and its subsidiaries' financial instruments, as defined under Thai Accounting Standard No.107 "Financial Instruments: Disclosure and Presentations", principally comprise the following:

| <u>Financial assets</u>   | <u>Financial liabilities</u>  |
|---|---|
| <ul style="list-style-type: none"><li>- Cash and cash equivalents</li><li>- Current investments</li><li>- Trade and other receivables</li><li>- Short-term loans to related parties and interest receivable</li><li>- Restricted bank deposits</li><li>- Long-term loans to associated company and interest receivable</li><li>- Long-term loans to related company and interest receivable</li><li>- Other long-term investments</li></ul> | <ul style="list-style-type: none"><li>- Bank overdrafts and short-term loans from financial institutions</li><li>- Trade and other payables</li><li>- Hire purchase creditors</li><li>- Retention for construction</li><li>- Long-term loans</li><li>- Debentures</li></ul> |

The financial risks associated with these financial instruments and how they are managed is described below.

#### **a) Credit risk**

The Company and its subsidiaries are exposed to credit risk primarily with respect to construction receivables and loans. However, since the majority of the Company's and its subsidiaries' construction contracts are made with government agencies and other creditworthy customers, they do not anticipate material losses from their debt collection outside those for which provision has already been set aside.

#### **b) Interest rate risk**

The Company's and its subsidiaries' exposure to interest rate risk relates primarily to its cash at banks, lendings, bank overdrafts and short-term loans, hire purchase creditors, long-term borrowings and debentures. Most of these financial assets and liabilities bear floating interest rates or fixed interest rates which are close to the market rate.

Significant financial assets and liabilities classified by type of interest rates are summarised in the table below, with those financial assets and liabilities that carry fixed interest rates further classified based on the maturity date, or the repricing date if this occurs before the maturity date.

(Unit: Million Baht)

| 31 December 2018  |                  |           |                 |                           |                         |        |  |
|---|------------------|-----------|-----------------|---------------------------|-------------------------|--------|--|
| Consolidated financial statements                                   |                  |           |                 |                           |                         |        |  |
| Fixed interest rates  |                  |           |                 |                           |                         |        |  |
|   | Within<br>1 year | 1-5 years | Over<br>5 years | Floating<br>interest rate | Non-interest<br>bearing | Total  | Effective<br>interest rate<br>(% p.a.)             |
| <b>Financial assets</b>   |                  |           |                 |                           |                         |        |  |
| Cash and cash equivalents   | -                | -         | -               | 8,378                     | 172                     | 8,550  | 0.05 to 1.30                                       |
| Current investments   | -                | -         | -               | -                         | 385                     | 385    | -  |
| Trade and other receivables   | -                | -         | -               | -                         | 8,191                   | 8,191  | -  |
| Short-term loans to related parties<br>and interest receivable      | 268              | -         | -               | -                         | -                       | 268    | 3.10 to 5.00                                       |
| Restricted bank deposits  | -                | 15        | -               | -                         | -                       | 15     | 0.90   |
| Long-term loans to associated<br>company and interest receivable    | -                | -         | -               | 14,073                    | -                       | 14,073 | MLR + 0.25   |
| Long-term loans to related company<br>and interest receivable       | -                | -         | -               | 4                         | -                       | 4      | MLR - 0.01   |
| Other long-term investments   | -                | -         | -               | -                         | 9,567                   | 9,567  | -  |
|   | 268              | 15        | -               | 22,455                    | 18,315                  | 41,053 |  |
| <b>Financial liabilities</b>  |                  |           |                 |                           |                         |        |  |
| Bank overdrafts and short-term loans<br>from financial institutions | 4,851            | -         | -               | 1,469                     | -                       | 6,320  | 1.73 to 3.625,<br>LIBOR + 2.75 and<br>MLR - margin |
| Trade and other payables  | -                | -         | -               | -                         | 5,397                   | 5,397  | -  |
| Hire purchase creditors   | 1                | -         | -               | -                         | -                       | 1      | 4.25 to 4.85                                       |
| Retention for construction  | -                | -         | -               | -                         | 699                     | 699    | -  |
| Long-term loans   | -                | -         | -               | 840                       | -                       | 840    | MLR - margin                                       |
| Debentures  | 4,500            | 10,264    | 14,770          | -                         | -                       | 29,534 | 2.19 to 4.32                                       |
|   | 9,352            | 10,264    | 14,770          | 2,309                     | 6,096                   | 42,791 |  |

31 December 2017

## Consolidated financial statements

|   | Fixed interest rates |              |                 | Floating<br>interest rate | Non-interest<br>bearing | Total         | Effective<br>interest rate<br>(% p.a.)                            |
|---|----------------------|--------------|-----------------|---------------------------|-------------------------|---------------|---|
|   | Within<br>1 year     | 1-5 years    | Over<br>5 years |                           |                         |               |   |
| <b>Financial assets</b>   |                      |              |                 |                           |                         |               |   |
| Cash and cash equivalents   | -                    | -            | -               | 6,627                     | 62                      | 6,689         | 0.05 to 1.40  |
| Current investments   | -                    | -            | -               | -                         | 2,208                   | 2,208         | -   |
| Trade and other receivables   | -                    | -            | -               | -                         | 5,462                   | 5,462         | -   |
| Short-term loans to related parties<br>and interest receivable      | 69                   | -            | -               | -                         | -                       | 69            | 5.00  |
| Restricted bank deposits  | -                    | 15           | -               | -                         | -                       | 15            | 0.375 to 0.90   |
| Long-term loans to associated<br>company and interest receivable    | -                    | -            | -               | 12,184                    | -                       | 12,184        | MLR + 0.25  |
| Long-term loans to related company<br>and interest receivable       | -                    | -            | -               | 7                         | -                       | 7             | MLR - 0.01  |
| Other long-term investments   | -                    | -            | -               | -                         | 9,722                   | 9,722         | -   |
|   | <u>69</u>            | <u>15</u>    | <u>-</u>        | <u>18,818</u>             | <u>17,454</u>           | <u>36,356</u> |   |
| <b>Financial liabilities</b>  |                      |              |                 |                           |                         |               |   |
| Bank overdrafts and short-term loans<br>from financial institutions | 7,175                | -            | -               | 1,090                     | -                       | 8,265         | 1.59 to 3.625,<br>FDR + 2.35,<br>LIBOR + 2.75 and<br>MLR - margin |
| Trade and other payables  | -                    | -            | -               | -                         | 4,038                   | 4,038         | -   |
| Hire purchase creditors   | 13                   | 2            | -               | -                         | -                       | 15            | 2.50 to 4.85  |
| Retention for construction  | -                    | -            | -               | -                         | 876                     | 876           | -   |
| Long-term loans   | -                    | -            | -               | 2,532                     | -                       | 2,532         | MLR - margin  |
| Debentures  | 2,000                | 7,732        | 18,750          | -                         | -                       | 28,482        | 2.19 to 6.75  |
|   | <u>9,188</u>         | <u>7,734</u> | <u>18,750</u>   | <u>3,622</u>              | <u>4,914</u>            | <u>44,208</u> |   |



31 December 2018

## Separate financial statements

|   | Fixed interest rates |               |                 | Floating<br>interest rate | Non-interest<br>bearing | Total         | Effective<br>interest rate<br>(% p.a.) |
|---|----------------------|---------------|-----------------|---------------------------|-------------------------|---------------|--|
|   | Within<br>1 year     | 1-5 years     | Over<br>5 years |                           |                         |               |  |
| <b>Financial assets</b>   |                      |               |                 |                           |                         |               |  |
| Cash and cash equivalents   | -                    | -             | -               | 5,984                     | 115                     | 6,099         | 0.375 to 1.30                          |
| Current investments   | -                    | -             | -               | -                         | 334                     | 334           | -                                      |
| Trade and other receivables   | -                    | -             | -               | -                         | 8,521                   | 8,521         | -                                      |
| Short-term loans to related parties and<br>interest receivable      | 240                  | -             | -               | -                         | -                       | 240           | 3.10                                   |
| Long-term loans to associated<br>company and interest receivable    | -                    | -             | -               | 14,073                    | -                       | 14,073        | MLR + 0.25                             |
| Long-term loans to related company<br>and interest receivable       | -                    | -             | -               | 4                         | -                       | 4             | MLR - 0.01                             |
| Other long-term investments   | -                    | -             | -               | -                         | 9,527                   | 9,527         | -                                      |
|   | <u>240</u>           | <u>-</u>      | <u>-</u>        | <u>20,061</u>             | <u>18,497</u>           | <u>38,798</u> |  |
| <b>Financial liabilities</b>  |                      |               |                 |                           |                         |               |  |
| Bank overdrafts and short-term loans<br>from financial institutions | 4,851                | -             | -               | 1,047                     | -                       | 5,898         | 1.73 to 3.625 and<br>MLR - 2.625       |
| Trade and other payables  | -                    | -             | -               | -                         | 5,021                   | 5,021         | -                                      |
| Hire purchase creditors   | 1                    | -             | -               | -                         | -                       | 1             | 4.25 to 4.85                           |
| Retention for construction  | -                    | -             | -               | -                         | 534                     | 534           | -                                      |
| Long-term loans   | -                    | -             | -               | 840                       | -                       | 840           | MLR - margin                           |
| Debentures  | 4,500                | 10,264        | 14,770          | -                         | -                       | 29,534        | 2.19 to 4.32                           |
|   | <u>9,352</u>         | <u>10,264</u> | <u>14,770</u>   | <u>1,887</u>              | <u>5,555</u>            | <u>41,828</u> |  |

31 December 2017

## Separate financial statements

## Fixed interest rates

|   | Within<br>1 year | 1-5 years | Over<br>5 years | Floating<br>interest rate | Non-interest<br>bearing | Total  | Effective<br>interest rate<br>(% p.a.) |
|---|------------------|-----------|-----------------|---------------------------|-------------------------|--------|--|
| <b>Financial assets</b>   |                  |           |                 |                           |                         |        |  |
| Cash and cash equivalents   | -                | -         | -               | 4,435                     | -                       | 4,435  | 0.05 to 1.40                           |
| Current investments   | -                | -         | -               | -                         | 2,176                   | 2,176  | -                                      |
| Trade and other receivables   | -                | -         | -               | -                         | 7,216                   | 7,216  | -                                      |
| Short-term loans to related parties and<br>interest receivable      | -                | -         | -               | 2,734                     | -                       | 2,734  | MLR - 2.00                             |
| Long-term loans to associated<br>company and interest receivable    | -                | -         | -               | 12,184                    | -                       | 12,184 | MLR + 0.25                             |
| Long-term loans to related company<br>and interest receivable       | -                | -         | -               | 7                         | -                       | 7      | MLR - 0.01                             |
| Other long-term investments   | -                | -         | -               | -                         | 9,682                   | 9,682  | -                                      |
|   | -                | -         | -               | 19,360                    | 19,074                  | 38,434 |  |
| <b>Financial liabilities</b>  |                  |           |                 |                           |                         |        |  |
| Bank overdrafts and short-term loans<br>from financial institutions | 7,175            | -         | -               | 83                        | -                       | 7,258  | 1.59 to 3.625 and<br>FDR + 2.35        |
| Trade and other payables  | -                | -         | -               | -                         | 3,046                   | 3,046  | -                                      |
| Hire purchase creditors   | 13               | 2         | -               | -                         | -                       | 15     | 2.5 to 4.85                            |
| Retention for construction  | -                | -         | -               | -                         | 621                     | 621    | -                                      |
| Long-term loans   | -                | -         | -               | 2,532                     | -                       | 2,532  | MLR - margin                           |
| Debentures  | 2,000            | 7,732     | 18,750          | -                         | -                       | 28,482 | 2.19 to 6.75                           |
|   | 9,188            | 7,734     | 18,750          | 2,615                     | 3,667                   | 41,954 |  |

### c) **Foreign currency risk**

The Company's and its subsidiaries' exposure to foreign currency risk arises mainly from construction contracts, purchasing transactions and advances received from employers.

The balances of financial assets and liabilities of the Company and its subsidiaries denominated in foreign currencies are summarised below.

| Foreign currency | Consolidated financial statements |             |                       |             |                                    |             |
|------------------|-----------------------------------|-------------|-----------------------|-------------|------------------------------------|-------------|
|                  | Financial assets                  |             | Financial liabilities |             | Average exchange rate              |             |
|                  | as at 31 December                 |             | as at 31 December     |             | as at 31 December                  |             |
|                  | <u>2018</u>                       | <u>2017</u> | <u>2018</u>           | <u>2017</u> | <u>2018</u>                        | <u>2017</u> |
|                  | (Million)                         | (Million)   | (Million)             | (Million)   | (Baht per 1 foreign currency unit) |             |
| USD              | 22                                | 54          | 14                    | 45          | 32.40                              | 32.68       |
| Euro             | 47                                | 2           | 37                    | 2           | 37.07                              | 39.03       |
| Japanese Yen     | 40                                | -           | -                     | -           | 0.29                               | 0.31        |

| Foreign currency | Separate financial statements |             |                       |             |                                    |             |
|------------------|-------------------------------|-------------|-----------------------|-------------|------------------------------------|-------------|
|                  | Financial assets              |             | Financial liabilities |             | Average exchange rate              |             |
|                  | as at 31 December             |             | as at 31 December     |             | as at 31 December                  |             |
|                  | <u>2018</u>                   | <u>2017</u> | <u>2018</u>           | <u>2017</u> | <u>2018</u>                        | <u>2017</u> |
|                  | (Million)                     | (Million)   | (Million)             | (Million)   | (Baht per 1 foreign currency unit) |             |
| USD              | 4                             | 4           | -                     | 4           | 32.40                              | 32.68       |
| Euro             | 47                            | 2           | 37                    | 2           | 37.07                              | 39.03       |
| Japanese Yen     | 40                            | -           | -                     | -           | 0.29                               | 0.31        |

As at 31 December 2018 and 2017, outstanding foreign exchange contracts of the Company and its subsidiary are summarised below.

| 2018                                     |               |                                    |                                |
|--|---------------|------------------------------------|--------------------------------|
| Foreign currency                         | Bought amount | Contractual exchange rate - Bought | Contractual Maturity date      |
|  | (Million)     | (Baht per 1 foreign currency unit) |                                |
| <u>Consolidated financial statements</u> |               |                                    |                                |
| USD                                      | 46            | 33.88 - 35.02                      | February 2019 to March 2020    |
| Euro                                     | 68            | 39.92 - 41.07                      | January 2019 to May 2020       |
| <u>Separate financial statements</u>     |               |                                    |                                |
| USD                                      | 7             | 33.88 - 33.94                      | February 2019 to February 2020 |
| Euro                                     | 68            | 39.92 - 41.07                      | January 2019 to May 2020       |

| 2017                                     |               |                                       |                               |
|--|---------------|---------------------------------------|-------------------------------|
| Foreign<br>currency                      | Bought amount | Contractual exchange rate -<br>Bought | Contractual<br>Maturity date  |
|  | (Million)     | (Baht per 1 foreign currency unit)    |                               |
| <u>Consolidated financial statements</u> |               |                                       |                               |
| USD                                      | 69            | 33.88 - 35.48                         | January 2018 to March 2020    |
| Euro                                     | 130           | 37.56 - 41.07                         | January 2018 to May 2020      |
| <u>Separate financial statements</u>     |               |                                       |                               |
| USD                                      | 16            | 33.88 - 35.48                         | January 2018 to February 2020 |
| Euro                                     | 130           | 37.56 - 41.07                         | January 2018 to May 2020      |

The Company and a subsidiary use foreign exchange contracts to hedge cash flow risk arising from changes in foreign exchange rates.

For the year ended 31 December 2018, the Company and a subsidiary recognised an unrealised loss of approximately Baht 86 million (net of income tax), as a result of changes in the fair value of foreign exchange contracts in other comprehensive income (2017: Baht 209 million).

## 38.2 Fair values of financial instruments

Since the majority of the Company's and its subsidiaries' financial instruments are short-term in nature or carrying interest at rates close to the market rates, their fair value is not expected to be materially different from the amounts presented in the statement of financial position.

The estimated fair value of the derivatives is as follows:

|                              | Consolidated         |             | Separate             |             |
|------------------------------|----------------------|-------------|----------------------|-------------|
|                              | financial statements |             | financial statements |             |
|                              | As at                | As at       | As at                | As at       |
|                              | 31 December          | 31 December | 31 December          | 31 December |
|                              | 2018                 | 2017        | 2018                 | 2017        |
|                              | Fair value           | Fair value  | Fair value           | Fair value  |
|                              | Gain (loss)          | Gain (loss) | Gain (loss)          | Gain (loss) |
| <b>Derivatives</b>           |                      |             |                      |             |
| Forward exchange contracts   | (316)                | (198)       | (201)                | (62)        |
| Interest rate swap contracts | -                    | 13          | -                    | 13          |

For derivatives, their fair value has been determined by using a discounted future cash flow model and a valuation model technique. Most of the inputs used for the valuation are observable in the relevant market, such as spot rates of foreign currencies, yield curves of the respective currencies and interest rate yield curves.

During the current year, there were no transfers within the fair value hierarchy.

### **39. Capital management**

The primary objective of the Company's capital management is to ensure that it has appropriate capital structure in order to support its business and maximise shareholder value. The Group has to maintain a debt-to-equity ratio as stipulated in long-term loan agreements and condition of debentures.

### **40. Events after the reporting period**

On 28 February 2019, a meeting of the Company's Board of Directors passed a resolution approving the payment of a dividend of Baht 0.30 per share in respect of the operations of July to December 2018. Together with the payment of an interim dividend of Baht 0.20 per share for the operations of January to June 2018, total dividends for the year 2018 thus amount to Baht 0.50 per share, or a total of Baht 846.9 million. This resolution will be proposed for approval by the Annual General Meeting of the Company's shareholders for the year 2019.

Furthermore, a meeting of the Company's Board of Directors passed a resolution approving an increase in the maximum outstanding balance of the debentures from a limit of Baht 35,000 million to a limit of Baht 45,000 million. This resolution will be proposed for approval by the Annual General Meeting of the Company's shareholders for the year 2019.

### **41. Approval of financial statements**

These financial statements were authorised for issue by the Company's Board of Directors on 28 February 2019.



## Attachment

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Attachment 1 : Details of the Company's Directors,  
Executives, Controllers and Company Secretary

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Attachment 2 : Details of Directors of Subsidiaries

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Attachment 3 : Details of Head of Internal Audit Unit and  
Head of Compliance Unit





## Attachment 1 : Details of the Company's Directors, Executives, Controllers and Company Secretary

### 1. Information of the Company's Directors, Executives, Controllers and Company Secretary are as follows:

|   |   |  |                                     |
|---|---|--|-------------------------------------|
| <b>1. Mr. Aswin Kongsiri</b>                              |   |  |                                     |
| <b>Position</b>   | Chairman of the Board of Directors  |  |                                     |
| <b>Appointment Date as Director</b>                       | October 10, 1994  |  |                                     |
| <b>Age</b>  | 73 years  |  |                                     |
| <b>Education/Training</b>                                 | <ul style="list-style-type: none"> <li>- B.A. (Hons.) in Philosophy, Politics and Economics, Oxford University, England</li> <li>- National Defence Course for the Joint State Private Sector, Class 6, National Defence College</li> <li>- Banff School of Advanced Management, Canada</li> <li>- Chairman 2000 Course (Class 5/2001), Thai Institute of Directors Association</li> <li>- Director Certification Program (DCP 11/2001), Thai Institute of Directors Association</li> <li>- "Ethics: CG Conscience", Stock Exchange of Thailand</li> <li>- Corporate Governance VS Corporate Performance: Duty or Choice?, Thai Institute of Directors Association</li> <li>- Directing in the year of the Rooster : Hot Issues and Outlook for 2017, Thai Institute of Directors Association</li> <li>- Nomination Committee Best Practice Guideline, Thai Institute of Directors Association</li> <li>- "Story Telling for Leaders", Thai Institute of Directors Association</li> <li>- EY Center for Board Matters "Critical insights for Boards and Audit Committees", EY Office Limited</li> <li>- Audit Committee's Role in Compliance and Ethical Culture Oversight, Thai Institute of Directors Association</li> <li>- Board Matters and Trends Agenda BMT 6/2018, Thai Institute of Directors Association</li> </ul> |  |                                     |
| <b>Shareholding (%)</b>                                   | - None -  |  |                                     |
| <b>Family Relationship among Directors and Executives</b> | - None -  |  |                                     |
| <b>Experience in Last Five Years Listed Companies:</b>    | <b>Period</b>   | <b>Position</b>  | <b>Organization/Company</b>         |
|   | 2007-Present  | Chairman of the Board of Directors   | CH. Karnchang Plc.                  |
|   | 2005-Present  | Independent Director, Chairman of the Nomination and Corporate Governance Committee, and Chairman of the Risk Management Committee | Bangkok Aviation Fuel Services Plc. |
|   | 1999-Present  | Independent Director and Chairman of the Audit Committee   | OHTL Plc.                           |
|   | 1994-Present  | Independent Director   | CH. Karnchang Plc.                  |
|   | 1993-Present  | Independent Director and Chairman of the Audit Committee   | Thai Reinsurance Plc.               |
|   | 1981-Present  | Independent Director, Audit Committee Member, and Chairman of the Nomination and Remuneration Committee                            | Padaeng Industry Plc.               |
|   | 2009-2012   | Vice Chairman of the Board of Directors  | Electricity Generating Plc.         |
|   | 2009-2012   | Director, Audit Committee Member, and Chairman of the Board of Directors   | Thoresen Thai Agencies Plc.         |
|   | 2005-2010   | Director and Executive Director  | Krung Thai Bank Plc.                |
|   | 2001-2012   | Independent Director   | Electricity Generating Plc.         |
|   | 1999-2003   | Director and Executive Director  | Siam Commercial Bank Plc.           |

| 1. Mr. Aswin Kongsiri (continued)                        |              |   |  |
|--|--------------|---|--|
| Experience in Last Five Years<br><u>Other Companies:</u> | Period       | Position                                    | Organization/Company                       |
|  | 2010-Present | Chairman of the Board of Directors          | Thai Orix Leasing Co., Ltd.                |
|  | 2008-2018    | Chairman of the Board of Directors          | Ton Poh Thailand Fund                      |
|  | 2011-2014    | Monetary Policy Committee Member            | The Bank of Thailand                       |
|  | 2006-2008    | Member of the National Legislative Assembly | The National Legislative Assembly          |
|  | 1990-1998    | Director and General Manager                | Industrial Finance Corporation of Thailand |





| 2. Mr. Plew Trivisvavet  |  |  |   |
|--|--|--|---|
| <b>Position</b>  | Director / Chairman of the Executive Board / Nomination and Remuneration Committee Member / Corporate Governance and Risk Management Committee Member / Authorized Signatory Director  |  |   |
| <b>Appointment Date as Director</b>                              | October 10, 1994   |  |   |
| <b>Age</b>   | 73 years   |  |   |
| <b>Education/Training</b>  | <ul style="list-style-type: none"> <li>- Honorary Doctorate (Civil Engineering), Rajamangala University of Technology Isan</li> <li>- Honorary Doctorate (Civil Engineering), Nakhon Phanom University</li> <li>- Honorary Doctorate (Civil Engineering), Kasetsart University</li> <li>- Honorary Doctorate of Sciences (Engineering), Thai-Nichi Institute of Technology</li> <li>- M.Sc. (Electrical Engineering), Osaka University, Japan</li> <li>- B.A. (Electrical Engineering), Osaka University, Japan</li> <li>- Director Accreditation Program (DAP 18/2004), Thai Institute of Directors Association</li> <li>- Director Certification Program (DCP 50/2004), Thai Institute of Directors Association</li> <li>- Finance for Non-Finance Directors (FND 13/2004), Thai Institute of Directors Association</li> <li>- Capital Market Academy Leadership Program, Capital Market Academy (CMA 4/2007)</li> <li>- National Defence Course (Class 366), National Defence College</li> <li>- Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal Entities Against Bribery, Office of the National Anti-Corruption Commission (NACC)</li> <li>- Thailand Energy Academy Course for Management, Class 10/2017, Thailand Energy Academy (TEA)</li> </ul> |  |   |
| <b>Shareholding (%)</b>  | 1.16   |  |   |
| <b>Family Relationship among Directors and Executives</b>        | Miss Supamas Trivisvavet's father, Mr. Sittidej Trivisvavet's uncle, Mr. Nattavut Trivisvavet's father   |  |   |
| <b>Experience in Last Five Years</b><br><b>Listed Companies:</b> | <b>Period</b>  | <b>Position</b>  | <b>Organization/Company</b>                 |
|  | 2016-Present   | Director and Chairman of the Executive Board                               | Bangkok Expressway and Metro Plc.           |
|  | 2011-Present   | Director and Chairman of the Executive Committee                           | CK Power Plc.                               |
|  | 2007-Present   | Corporate Governance and Risk Management Committee Member                  | CH. Karnchang Plc.                          |
|  | 2006-Present   | Director   | TTW Plc.                                    |
|  | 2003- Present  | Nomination and Remuneration Committee Member                               | CH. Karnchang Plc.                          |
|  | 1994-Present   | Chairman of the Executive Board  | CH. Karnchang Plc.                          |
|  | 1998-2015  | Chairman of the Board of Directors and Chairman of the Executive Committee | Bangkok Metro Plc.                          |
|  | 1998-2015  | Director and Chairman of the Executive Board                               | Bangkok Expressway Plc.                     |
|  | 1994-2015  | Chief Executive Officer  | CH. Karnchang Plc.                          |
| <b>Other Companies:</b>  | 2010-Present   | Director and Chairman of the Executive Committee                           | Xayaburi Power Company Limited              |
|  | 2006-Present   | Director and Chairman of the Executive Committee                           | Nam Ngum 2 Power Company Limited            |
|  | 2004-Present   | Director and Chairman of the Executive Committee                           | SouthEast Asia Energy Limited               |
|  | 1996-Present   | Chairman of the Board of Directors and Chairman of the Executive Committee | Northern Bangkok Expressway Company Limited |
|  | 1994-Present   | Director   | CH. Karnchang Holding Co., Ltd.             |
|  | 1992-Present   | Director   | CK. Office Tower Co., Ltd.                  |
|  | 1991-Present   | Director   | CH. Karnchang Real Estate Co., Ltd.         |
|  | 1983-Present   | Director   | Mahasiri Siam Co., Ltd.                     |
|  | 1981-Present   | Director and Chairman of the Board of Directors                            | CH. Karnchang-Tokyu Construction Co., Ltd.  |

| 3. Mr. Vitoon Tejatussanasoontorn                                |  |  |                                      |
|--|--|--|--------------------------------------|
| <b>Position</b>  | Director / Chairman of the Audit Committee / Chairman of the Nomination and Remuneration Committee / Chairman of the Corporate Governance and Risk Management Committee  |  |                                      |
| <b>Appointment Date as Director</b>                              | April 30, 1999   |  |                                      |
| <b>Age</b>   | 78 years   |  |                                      |
| <b>Education/Training</b>  | <ul style="list-style-type: none"> <li>- B.A. in Commerce, Thammasat University</li> <li>- Director Certification Program (DCP 2/2000), Thai Institute of Directors Association</li> <li>- IOD Chartered Directors, Thai Institute of Directors Association, Class 1/2007</li> <li>- Audit Committee Programs (ACP 27/2009), Thai Institute of Directors Association</li> <li>- Advanced Audit Committee Programs (AAP 3/2010), Thai Institute of Directors Association</li> <li>- Role of Compensation Committee (RCC 12/2011), Thai Institute of Directors Association</li> <li>- New Auditor's Report: What's in it for you?, Thai Institute of Directors Association, in association with Federation of Accounting Professions under the Royal Patronage of His Majesty the King</li> <li>- Directors Compensation Survey 2016, Thai Institute of Directors Association</li> <li>- Seminar on Accounting in Preparation for Change of Financial Reporting Standard, EY Office Limited</li> <li>- "Story Telling for Leaders", Thai Institute of Directors Association</li> <li>- Nomination Director Event 1/2017 on Nomination Committee Best Practice Guideline, Thai Institute of Directors Association</li> <li>- Seminar on Accounting, "Business in Era of Unusual Variations", EY Office Limited</li> </ul> |  |                                      |
| <b>Shareholding (%)</b>  | 0.009  |  |                                      |
| <b>Family Relationship among Directors and Executives</b>        | - None -   |  |                                      |
| <b>Experience in Last Five Years</b><br><u>Listed Companies:</u> | <b>Period</b>  | <b>Position</b>  | <b>Organization/Company</b>          |
|  | 2016-Present   | Chairman of the Audit Committee  | Bangkok Expressway and Metro Plc.    |
|  | 2015-Present   | Director and Nomination and Remuneration Committee Member                                      | Bangkok Expressway and Metro Plc.    |
|  | 2014-Present   | Chairman of the Nomination and Remuneration Committee  | CH. Karnchang Plc.                   |
|  | 2007-Present   | Chairman of the Corporate Governance and Risk Management Committee                             | CH. Karnchang Plc.                   |
|  | 1999-Present   | Director and Chairman of the Audit Committee   | CH. Karnchang Plc.                   |
|  | 1991-Present   | Deputy Senior Managing Director  | AGC Flat Glass (Thailand) Plc.       |
|  | 2005-2015  | Independent Director, Audit Committee Member, and Nomination and Remuneration Committee Member | Bangkok Metro Plc.                   |
|  | 2015-Present   | Director and Chairman of the Audit Committee   | Thaisri Insurance Plc.               |
|  | 2004-Present   | Director   | Asahi Glass Foundation of Thailand   |
|  | 1988-Present   | Director and Executive Director  | Pattaya Estate Co., Ltd.             |
|  | 1988-Present   | Director and Executive Director  | Kiarti Thanee Country Club Co., Ltd. |
|  | 1987-Present   | Director   | Diachrome Chemicals Limited          |
| <b>Other Companies:</b>  | 2015-Present   | Director and Chairman of the Audit Committee   | Thaisri Insurance Plc.               |
|  | 2004-Present   | Director   | Asahi Glass Foundation of Thailand   |
|  | 1988-Present   | Director and Executive Director  | Pattaya Estate Co., Ltd.             |
|  | 1988-Present   | Director and Executive Director  | Kiarti Thanee Country Club Co., Ltd. |
|  | 1987-Present   | Director   | Diachrome Chemicals Limited          |

| 4. Mr. Thawansak Sukhawun                                      |  |   |  |
|--|--|---|--|
| <b>Position</b>  | Director / Audit Committee Member / Nomination and Remuneration Committee Member / Corporate Governance and Risk Management Committee Member |   |  |
| <b>Appointment Date as Director</b>                            | February 29, 2000  |   |  |
| <b>Age</b>   | 81 years   |   |  |
| <b>Education/Training</b>                                      | - M.A. in Political Science with the Certificate in International Affairs, University of North Carolina at Chapel Hill, N.C., U.S.A.         |   |  |
|  | - Bachelor of Arts, Chulalongkorn University   |   |  |
|  | - Certificate of Modern Management, National Defence College (NDC) of Thailand   |   |  |
|  | - Director Certification Program (DCP 61/2005), Thai Institute of Directors Association  |   |  |
|  | - Finance for Non-Finance Directors (FND 19/2005), Thai Institute of Directors Association   |   |  |
|  | - Fraud and Corruption Risk in Economic Downturn, Thai Institute of Directors Association  |   |  |
|  | - National Defence Course (Class 366), National Defence College  |   |  |
|  | - Advanced Audit Committee Programs (AACP 3/2010), Thai Institute of Directors Association   |   |  |
|  | - Advanced Security Management Program (ASMP 3/2012), National Defence College Association of Thailand                                       |   |  |
|  | - Seminar on Accounting, “Business in Era of Unusual Variations”, EY Office Limited  |   |  |
|  |  |   |  |
| <b>Shareholding (%)</b>  | - None -   |   |  |
| <b>Family Relationship among Directors and Executives</b>      | - None -   |   |  |
| <b>Experience in Last Five Years</b><br><b>Listed Company:</b> | <b>Period</b>  | <b>Position</b>   | <b>Organization/Company</b>  |
|  | 2014-Present   | Nomination and Remuneration Committee Member              | CH. Karnchang Plc.   |
|  | 2007-Present   | Corporate Governance and Risk Management Committee Member | CH. Karnchang Plc.   |
|  | 2000-Present   | Director and Audit Committee Member                       | CH. Karnchang Plc.   |
| <b>Other Company:</b>  | 1989-1998  | Director-General<br>Deputy Director-General               | Thai News Agency<br>Mass Communication<br>Organization of Thailand<br>(M.C.O.T.) |

| 5. Mr. Pavich Tongroach  |   |  |   |
|--|---|--|---|
| <b>Position</b>  | Director / Audit Committee Member / Chairman of the Corporate Social and Environmental Responsibility Committee |  |   |
| <b>Appointment Date as Director</b>                              | October 12, 2007  |  |   |
| <b>Age</b>   | 72 years  |  |   |
| <b>Education/Training</b>  | - Doctor of Philosophy (Ph.D.) in Brain Pharmacology, The University of London, U.K.                            |  |   |
|  | - Post-doctoral Research on brain function at Faculty of Medicine, University of Tokyo, Japan                   |  |   |
|  | - Master of Science (M.Sc.) in Brain Biology, The University of London, U.K.                                    |  |   |
|  | - Bachelor of Pharmacy, Chulalongkorn University  |  |   |
|  | - Director Certification Program (DCP 131/2010), Thai Institute of Directors Association                        |  |   |
|  | - National Defence Course (Class 4212), National Defence College  |  |   |
|  | - Financial Statements for Directors (FSD 26/2014), Thai Institute of Directors Association                     |  |   |
| <b>Shareholding (%)</b>  | - None -  |  |   |
| <b>Family Relationship among Directors and Executives</b>        | - None -  |  |   |
| <b>Experience in Last Five Years</b><br><b>Listed Companies:</b> | <b>Period</b>   | <b>Position</b>  | <b>Organization/Company</b>                       |
|  | 2014-Present  | Audit Committee Member   | CH. Karnchang Plc.                                |
|  | 2014-Present  | Chairman of the Corporate Social and Environmental Responsibility Committee                          | CH. Karnchang Plc.                                |
|  | 2007-Present  | Director   | CH. Karnchang Plc.                                |
|  | 2005-2006   | Director   | MCOT Plc.   |
| <b>Other Companies:</b>  | Present   | Executive Board Member<br>Chairman of the Chemical and Pharmaceutical Science Committee              | National Research Council of Thailand             |
|  | Present   | Member and Vice Chairman   | Higher Education Commission                       |
|  | Present   | President of the Nakhon Phanom University Council  | Nakhon Phanom University                          |
|  | Present   | Adjunct Professor  | Naresuan University                               |
|  | Present   | Distinguished Scholar  | Chulalongkorn University                          |
|  | 2008-2014   | Chairman of the Kalasin Rajabhat University Council  | Kalasin Rajabhat University                       |
|  | 2007-2010   | President  | The Pharmacy Council                              |
|  | 2007  | Director, Chairman of the Nomination and Remuneration Committee, and Chairman of the Audit Committee | Thailand Post Co., Ltd.                           |
|  | 2005-2006   | President and Vice Chairman of the University Council  | Nakhon Phanom University                          |
|  | 2005  | President and Vice Chairman of the University Council  | Princess of Narathiwat University                 |
|  | 2005  | Acting President   | King Mongkut's Institute of Technology Ladkrabang |

| 6. Miss Supamas Trivisvavet                                      |  |   |  |
|--|--|---|--|
| <b>Position</b>  | Director / Executive Director / President / Corporate Governance and Risk Management Committee Member / Authorized Signatory Director  |   |  |
| <b>Appointment Date as Director</b>                              | July 1, 2015   |   |  |
| <b>Age</b>   | 44 years   |   |  |
| <b>Education/Training</b>  | <ul style="list-style-type: none"> <li>- Doctor of Philosophy in Public Administration (2004), University of Southern California, U.S.A., Dean's Merit Scholarship</li> <li>- Master of Public Policy (1999), Duke University, U.S.A.</li> <li>- Bachelor of Arts, Chulalongkorn University (1995)</li> <li>- Director Certification Program (DCP 106/2008), Thai Institute of Directors Association</li> <li>- Company Secretary Program (CSP 37/2010), Thai Institute of Directors Association</li> <li>- Board Reporting Program (BRP 33/2010), Thai Institute of Directors Association</li> <li>- Capital Market Academy Leadership Program (CMA 22/2016), Capital Market Academy</li> <li>- TIJ Executive Program on the Rule of Law and Development (RoLD 1/2017), Thailand Institute of Justice (Public Organization)</li> <li>- Workshop for Emerging Leaders on the Rule of Law &amp; Policy, Thailand Institute of Justice (Public Organization), in association with the Institute for Global Law and Policy, Harvard Law School, 2017</li> </ul> |   |  |
| <b>Shareholding (%)</b>  | 0.10   |   |  |
| <b>Family Relationship among Directors and Executives</b>        | Mr. Plew Trivisvavet's daughter<br>Mr. Nattavut Trivisvavet's elder sister   |   |  |
| <b>Experience in Last Five Years</b><br><b>Listed Companies:</b> | <b>Period</b>  | <b>Position</b>   | <b>Organization/Company</b>                      |
|  | 2018-Present   | Corporate Governance and Risk Management Committee Member | CH. Karnchang Plc.                               |
|  | 2015-Present   | Director, Executive Director, and President               | CH. Karnchang Plc.                               |
|  | 2012-Present   | Director and Executive Director                           | CK Power Plc.                                    |
| <b>Other Companies:</b>  | 2009-2012  | Executive Vice President: Office of President             | CH. Karnchang Plc.                               |
|  | 2017-Present   | Director  | Kamala Senior Living Co., Ltd.                   |
|  | 2017-Present   | Director  | CH. Karnchang Real Estate Co., Ltd.              |
|  | 2016-Present   | Director  | CH. Karnchang-Tokyu Construction Co., Ltd.       |
|  | 2016-Present   | Director  | Mahasiri Siam Co., Ltd.                          |
|  | 2016-Present   | Director  | CH. Karnchang Holding Co., Ltd.                  |
|  | 2016-Present   | Director  | CK. Office Tower Co., Ltd.                       |
|  | 2008-Present   | Director  | Bang Pa-in Land Development Co., Ltd.            |
|  | 2008-Present   | Director  | Cholavet Civil Co., Ltd.                         |
|  | 2008-2009  | Lecturer of Graduate School of Public Administration      | National Institute of Development Administration |
|  | 1999-2000  | Research Assistant  | The World Bank Office, Thailand                  |

| 7. Mr. Narong Sangsuriya  |   |   |  |
|---|---|---|--|
| <b>Position</b>   | Director / Executive Director / Nomination and Remuneration Committee Member / Corporate Governance and Risk Management Committee Member / Authorized Signatory Director  |   |  |
| <b>Appointment Date as Director</b>   | October 10, 1994  |   |  |
| <b>Age</b>  | 74 years  |   |  |
| <b>Education/Training</b>   | <ul style="list-style-type: none"> <li>- Bachelor of Engineering (Civil), Chulalongkorn University</li> </ul>   |   |  |
|   | <ul style="list-style-type: none"> <li>- Director Certification Program (DCP 54/2005), Thai Institute of Directors Association</li> <li>- Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal Entities Against Bribery, Office of the National Anti-Corruption Commission (NACC)</li> </ul> |   |  |
| <b>Shareholding (%)</b>   | 0.03  |   |  |
| <b>Family Relationship among Directors and Executives</b>                   | - None -  |   |  |
| <b>Experience in Last Five Years</b><br><br><b><u>Listed Companies:</u></b> | <b>Period</b>   | <b>Position</b>   | <b>Organization/Company</b>                      |
|   | 2012-Present  | Corporate Governance and Risk Management Committee Member | CH. Karnchang Plc.                               |
|   | 2011-Present  | Director  | CK Power Plc.                                    |
|   | 2007-Present  | Nomination and Remuneration Committee Member              | CH. Karnchang Plc.                               |
|   | 1994-Present  | Director and Executive Director                           | CH. Karnchang Plc.                               |
|   | 2000-2015   | Director  | TTW Plc.   |
|   | <b><u>Other Companies:</u></b>  |   |  |
|   | 2016-Present  | Director  | Expert Transport Company Limited                 |
|   | 2006-Present  | Director  | Nam Ngum 2 Power Company Limited                 |
|   | 2004-Present  | Director  | SouthEast Asia Energy Limited                    |
|   | 1991-Present  | Director  | Royal Rayong Real Estate International Co., Ltd. |
|   | 1990-Present  | Director  | CH. Karnchang-Tokyu Construction Co., Ltd.       |
|   | 2009-2015   | Director  | Bangpa-in Cogeneration Limited                   |

| 8. Mr. Prasert Marittanaporn                                     |  |   |  |
|--|--|---|--|
| <b>Position</b>  | Director / Executive Director / Corporate Social and Environmental Responsibility Committee Member / Authorized Signatory Director   |   |  |
| <b>Appointment Date as Director</b>                              | April 28, 2006   |   |  |
| <b>Age</b>   | 62 years   |   |  |
| <b>Education/Training</b>  | - Master of Business Administration, Kasetsart University  |   |  |
|  | - Bachelor of Accounting, Chulalongkorn University   |   |  |
|  | - Director Certification Program (DCP 54/2005), Thai Institute of Directors Association  |   |  |
|  | - Role of the Compensation Committee (RCC 6/2008), Thai Institute of Directors Association   |   |  |
|  | - Capital Market Academy Leadership Program (CMA 9/2009), Capital Market Academy   |   |  |
|  | - Successful Formulation & Execution of Strategy (SFE 6/2010), Thai Institute of Directors Association   |   |  |
|  | - Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal Entities Against Bribery, Office of the National Anti-Corruption Commission (NACC) |   |  |
|  | - Basic Knowledge on Trade Finance and Prevention of Risk from Exchange Rate, Krung Thai Bank Plc.   |   |  |
|  | - IFRS 9, Krung Thai Bank Plc.   |   |  |
| <b>Shareholding (%)</b>  | - None -   |   |  |
| <b>Family Relationship among Directors and Executives</b>        | - None -   |   |  |
| <b>Experience in Last Five Years</b><br><b>Listed Companies:</b> | <b>Period</b>  | <b>Position</b>                                       | <b>Organization/Company</b>                |
|  | 2011-Present   | Director  | CK Power Plc.                              |
|  | 2007-Present   | Executive Director                                    | CH. Karnchang Plc.                         |
|  | 2006-Present   | Director  | CH. Karnchang Plc.                         |
|  | 2009-2015  | Senior Executive Vice President: Administration Group | CH. Karnchang Plc.                         |
|  | 2001-2008  | Executive Vice President: Accounting and Finance      | CH. Karnchang Plc.                         |
|  | 2000-2012  | Director  | TTW Plc.                                   |
| <b>Other Companies:</b>  | 2017-Present   | Director  | CH. Karnchang Real Estate Co., Ltd.        |
|  | 2008-Present   | Director  | Nam Ngum 2 Power Company Limited           |
|  | 2007-Present   | Director  | CH. Karnchang-Tokyu Construction Co., Ltd. |
|  | 2004-Present   | Director  | SouthEast Asia Energy Limited              |

| 9. Mr. Ratn Santaannop   |   |  |                                     |
|--|---|--|-------------------------------------|
| <b>Position</b>  | Director / Executive Director / Authorized Signatory Director   |  |                                     |
| <b>Appointment Date as Director</b>                            | April 28, 2006  |  |                                     |
| <b>Age</b>   | 75 years  |  |                                     |
| <b>Education/Training</b>                                      | - Bachelor of Engineering (Civil), Chulalongkorn University   |  |                                     |
|  | - Director Certification Program (DCP 88/2007), Thai Institute of Directors Association                       |  |                                     |
|  | - Understanding the Fundamental of Financial Statements (UFS 9/2007), Thai Institute of Directors Association |  |                                     |
| <b>Shareholding (%)</b>  | - None -  |  |                                     |
| <b>Family Relationship among Directors and Executives</b>      | - None -  |  |                                     |
| <b>Experience in Last Five Years</b><br><b>Listed Company:</b> | <b>Period</b>   | <b>Position</b>                          | <b>Organization/Company</b>         |
|  | 2007-Present  | Executive Director                       | CH. Karnchang Plc.                  |
|  | 2006-Present  | Director                                 | CH. Karnchang Plc.                  |
|  | 2001-2015   | Executive Vice President: Construction 1 | CH. Karnchang Plc.                  |
| <b>Other Companies:</b>  | 2010-Present  | Director                                 | Thai Water Operations Co., Ltd.     |
|  | 2006-Present  | Director                                 | CH. Karnchang (Lao) Co., Ltd.       |
|  | 2007-2009   | Director                                 | BJT Water Co., Ltd.                 |
|  | 2007-2008   | Director                                 | Bangkok Concrete Industry Co., Ltd. |
|  | 2005-2007   | Director                                 | Pathum Thani Water Co., Ltd.        |



| 10. Mr. Anukool Tuntimas                                  |  |
|---|--|
| <b>Position</b>   | Director / Executive Director / Corporate Social and Environmental Responsibility Committee Member / Authorized Signatory Director   |
| <b>Appointment Date as Director</b>                       | April 28, 2006   |
| <b>Age</b>  | 51 years   |
| <b>Education/Training</b>                                 | <ul style="list-style-type: none"> <li>- Doctor of Business Administration, University of South Australia</li> <li>- Master of Engineering (Engineering Management), Dhurakij Pundit University</li> <li>- Master of Laws, Chulalongkorn University</li> <li>- Master of Business Administration, Kasetsart University</li> <li>- Barrister at Law, The Institute of Legal Education</li> <li>- Bachelor of Laws, Chulalongkorn University</li> <li>- Bachelor of Business Administration (Accounting and Finance), Ramkhamhaeng University</li> <li>- Director Certification Program (DCP 43/2004), Thai Institute of Directors Association</li> <li>- Advanced Audit Committee Programs (AACP 1/2009), Thai Institute of Directors Association</li> <li>- Corporate Governance and Social Responsibility (CSR 1/2007), Thai Institute of Directors Association</li> <li>- Finance for Non-Finance Directors (FND 38/2007), Thai Institute of Directors Association</li> <li>- Role of the Compensation Committee (RCC 9/2009), Thai Institute of Directors Association</li> <li>- Tackling Corruption through Public-Private Collaboration, Thai Institute of Directors Association</li> <li>- Director Certification Program Update (DCPU 2/2014), Thai Institute of Directors Association</li> <li>- Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal Entities Against Bribery, Office of the National Anti-Corruption Commission (NACC)</li> <li>- Boards that Make a Difference (BMD 1/2016), Thai Institute of Directors Association</li> <li>- Legal Update : Criminal Liabilities of Directors, Thai Institute of Directors Association</li> <li>- Cultural Intelligence for Global Leaders: Developing the Capability to Lead Across Cultures, Thailand Management Association (TMA)</li> <li>- Thailand Insurance Leadership Program, Class 7, Advanced Insurance Institute</li> <li>- IFRS 9, Krung Thai Bank Plc.</li> <li>- Leadership Communication Batch#8 (Certificate Program 2018), Thailand Management Association (TMA)</li> </ul> |
| <b>Shareholding (%)</b>                                   | 0.01   |
| <b>Family Relationship among Directors and Executives</b> | - None -   |

| 10. Mr. Anukool Tuntimas (continued) |              |   |   |
|--------------------------------------|--------------|---|---|
| Experience in Last Five Years        | Period       | Position  | Organization/Company  |
| <b>Listed Companies:</b>             | 2014-Present | Corporate Social and Environmental Responsibility Committee Member  | CH. Karnchang Plc.  |
|                                      | 2007-Present | Executive Director  | CH. Karnchang Plc.  |
|                                      | 2006-Present | Director  | CH. Karnchang Plc.  |
|                                      | 2001-Present | Executive Vice President: Human Resource and General Administration | CH. Karnchang Plc.  |
|                                      | 2004-2012    | Director and Executive Committee Member                             | Bangkok Metro Plc.  |
| <b>Other Companies:</b>              | 2009-2017    | Director  | Bangkok Metro Networks Limited  |
|                                      | 2004-2008    | Director<br>Director<br>Director                                    | Metro Mall Development Limited<br>Triads Networks Co., Ltd.<br>BMCL Network Limited |
|                                      | 2004-2006    | Director and Vice President, Academic Affairs                       | Lawyers Association of Thailand   |



| 11. Mr. Sittidej Trivisvavet                                   |  |   |                             |
|--|--|---|-----------------------------|
| <b>Position</b>  | Senior Executive Vice President: Administration Group  |   |                             |
| <b>Appointment Date</b>  | February 16, 2016  |   |                             |
| <b>Age</b>   | 65 years   |   |                             |
| <b>Education/Training</b>                                      | - Bachelor of Business Administration in Construction Management, Sukhothai Thammathirat Open University   |   |                             |
|  | - Director Certification Program (DCP 127/2010), Thai Institute of Directors Association   |   |                             |
|  | - Advanced Certificate Course in Promotion of Peaceful Society, King Prajadhipok's Institute   |   |                             |
|  | - Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal Entities Against Bribery, Office of the National Anti-Corruption Commission (NACC) |   |                             |
|  | - Organizational Changes in Thailand 4.0, CH. Karnchang Plc.   |   |                             |
|  | - IFRS 9, Krung Thai Bank Plc.   |   |                             |
| <b>Shareholding (%)</b>  | - None -   |   |                             |
| <b>Family Relationship among Directors and Executives</b>      | Mr. Plew Trivisvavet's nephew  |   |                             |
| <b>Experience in Last Five Years</b><br><b>Listed Company:</b> | <b>Period</b>  | <b>Position</b>                                       | <b>Organization/Company</b> |
|  | 2016-Present   | Senior Executive Vice President: Administration Group | CH. Karnchang Plc.          |
|  | 2009-2015  | Executive Vice President: Purchasing                  | CH. Karnchang Plc.          |
| <b>Other Companies:</b>  | 2000-Present   | Director  | Expert Transport Co., Ltd.  |
|  | 1994-Present   | Director  | Vetprasert Co., Ltd.        |
|  | 1979-Present   | Director  | Songvet Co., Ltd.           |

| 12. Mr. Phongsarit Tantisuvanitchkul                                 |   |  |   |
|--|---|--|---|
| <b>Position</b>  | Senior Executive Vice President: Operation Group  |  |   |
| <b>Appointment Date</b>  | February 16, 2016   |  |   |
| <b>Age</b>   | 46 years  |  |   |
| <b>Education/Training</b>  | - Master of Engineering, University of Michigan Ann Arbor   |  |   |
|  | - Bachelor of Engineering, Kasetsart University   |  |   |
|  | - Understanding the Fundamental of Financial Statements (UFS 9/2007), Thai Institute of Directors Association |  |   |
|  | - Finance for Non-Finance Directors (FND 35/2007), Thai Institute of Directors Association                    |  |   |
|  | - Director Certification Program (DCP 155/2012), Thai Institute of Directors Association                      |  |   |
| <b>Shareholding (%)</b>  | 0.009   |  |   |
| <b>Family Relationship among Directors and Executives</b>            | - None -  |  |   |
| <b>Experience in Last Five Years</b><br><br><b>Listed Companies:</b> | <b>Period</b>   | <b>Position</b>                                  | <b>Organization/Company</b>                 |
|  | 2016-Present  | Director and Executive Director                  | Bangkok Expressway and Metro Plc.           |
|  | 2016-Present  | Senior Executive Vice President: Operation Group | CH. Karnchang Plc.                          |
|  | 2016-Present  | Director and Chairman of the Executive Committee | TTW Plc.                                    |
|  | 2011-2015   | Executive Vice President: Business Development   | CH. Karnchang Plc.                          |
|  | 2014-2015   | Director   | Bangkok Metro Plc.                          |
|  | <b>Other Companies:</b>   |  |   |
|  | 2017-Present  | Director and Chairman of the Board of Directors  | Bangkok Metro Networks Limited              |
|  | 2016- Present   | Director and Executive Director                  | Northern Bangkok Expressway Company Limited |
|  | 2016- Present   | Director   | CH. Karnchang-Tokyu Construction Co., Ltd.  |
|  | 2009-2017   | Director and Executive Director                  | Bangkok Metro Networks Limited              |
|  | 2012-2015   | Director   | Transit Expert Co., Ltd.                    |

| 13. Mr. Pornnarong Siriyothin                                  |   |  |   |
|--|---|--|---|
| <b>Position</b>  | Executive Vice President: Construction 1  |  |   |
| <b>Appointment Date</b>  | February 16, 2016   |  |   |
| <b>Age</b>   | 68 years  |  |   |
| <b>Education/Training</b>                                      | - Bachelor of Engineering (Irrigation Engineering), Kasetsart University  |  |   |
|  | - Innovations for Unpredictable Ground Condition and Water Ingress, The Engineering Institute of Thailand (EIT) |  |   |
|  | - Seminar on Japanese Construction Technology in Thailand 2018, Advanced Construction Technology Center         |  |   |
|  | - IFRS 9, Krung Thai Bank Plc.  |  |   |
| <b>Shareholding (%)</b>  | - None -  |  |   |
| <b>Family Relationship among Directors and Executives</b>      | - None -  |  |   |
| <b>Experience in Last Five Years</b><br><b>Listed Company:</b> | <b>Period</b>   | <b>Position</b>                          | <b>Organization/Company</b>   |
|  | 2016-Present  | Executive Vice President: Construction 1 | CH. Karnchang Plc.  |
|  | 1990-2015   | Project Manager                          | CH. Karnchang Plc.  |
| <b>Other Companies:</b>  | 1981-1990   | Project Manager                          | Sanga Machinery Ltd. Part.  |
|  | 1979-1981   | Civil Engineer, Level 5                  | Office of Central Land Consolidation,<br>Office of the Permanent Secretary for Ministry of Agriculture and Cooperatives |
|  | 1975-1979   | Civil Engineer, Level 4                  | Royal Irrigation Department   |
|  | 1973-1975   | Irrigation Engineer                      | Royal Irrigation Department   |

| 14. Mr. Prapon Chanpradubfa                             |  |  |                      |
|---|--|--|----------------------|
| Position  | Executive Vice President: Construction 2   |  |                      |
| Appointment Date  | February 16, 2016  |  |                      |
| Age   | 63 years   |  |                      |
| Education/Training                                      | - Bachelor of Business Administration in Construction Management, Sukhothai Thammathirat Open University |  |                      |
|   | - Seminar on Japanese Construction Technology in Thailand 2018, Advanced Construction Technology Center  |  |                      |
| Shareholding (%)  | - None -   |  |                      |
| Family Relationship among Directors and Executives      | - None -   |  |                      |
| Experience in Last Five Years<br><u>Listed Company:</u> | Period   | Position                                 | Organization/Company |
|   | 2016-Present   | Executive Vice President: Construction 2 | CH. Karnchang Plc.   |
|   | 1982-2015  | Project Manager                          | CH. Karnchang Plc.   |
|   | - None -   |  |                      |
| <u>Other Company:</u>                                   |  |  |                      |



| 15. Mr. Phairat Prom-in   |   |  |  |
|---|---|--|--|
| <b>Position</b>   | Executive Vice President: Construction 3  |  |  |
| <b>Appointment Date</b>   | February 16, 2016   |  |  |
| <b>Age</b>  | 60 years  |  |  |
| <b>Education/Training</b>   | - Bachelor of Engineering (Civil), Songklanakarin University  |  |  |
|   | - Innovations for Unpredictable Ground Condition and Water Ingress, The Engineering Institute of Thailand (EIT) |  |  |
|   | - IFRS 9, Krung Thai Bank Plc.  |  |  |
| <b>Shareholding (%)</b>   | - None -  |  |  |
| <b>Family Relationship among Directors and Executives</b>             | - None -  |  |  |
| <b>Experience in Last Five Years</b><br><b><u>Listed Company:</u></b> | <b>Period</b>   | <b>Position</b>                                | <b>Organization/Company</b>                      |
|   | 2016-Present  | Executive Vice President: Construction 3       | CH. Karnchang Plc.                               |
|   | 2014-2015   | Si Rat Expressway Construction Project Manager | CH. Karnchang Plc.                               |
|   | 2011-2014   | MRT Purple Line Project 1 Manager              | CH. Karnchang Plc.                               |
| <b><u>Other Companies:</u></b>  | 1981-1990   | Site Engineer, Civil Unit                      | The Electricity Generating Authority of Thailand |
|   | 1980-1981   | Supervising Engineer                           | Italian-Thai Development Corporation Limited     |

| 16. Mr. Thammanoon Surarat                              |  |  |                      |
|---|--|--|----------------------|
| Position  | Executive Vice President: Construction 4   |  |                      |
| Appointment Date  | February 16, 2016  |  |                      |
| Age   | 74 years   |  |                      |
| Education/Training                                      | - Bachelor of Engineering, Civil Engineering, Chulalongkorn University   |  |                      |
|   | - Safety Officer in Management Level Course, Class 4, SAFETECH-Safety and Environment Technology Center  |  |                      |
|   | - Construction Management for Thai Construction Industry, King Mongkut's University of Technology Thonburi   |  |                      |
|   | - Taiwan High-Speed Railway Track Construction, The Engineering Institute of Thailand  |  |                      |
|   | - Challenges of Thai Tunnel Engineers from Diversion Tunnel Construction for the Nam Ngum 2 Hydroelectric Power Project, The Engineering Institute of Thailand |  |                      |
| Shareholding (%)  | - None -   |  |                      |
| Family Relationship among Directors and Executives      | - None -   |  |                      |
| Experience in Last Five Years<br><u>Listed Company:</u> | Period   | Position                                 | Organization/Company |
|   | 2016-Present   | Executive Vice President: Construction 4 | CH. Karnchang Plc.   |
|   | 1995-2015  | Project Manager                          | CH. Karnchang Plc.   |
| <u>Other Company:</u>                                   | - None -   |  |                      |
|   |  |  |                      |





| 17. Mr. Watchara Sanghattawattana                                     |  |  |                             |
|---|--|--|-----------------------------|
| <b>Position</b>   | Executive Vice President: Engineering  |  |                             |
| <b>Appointment Date</b>   | July 25, 2011  |  |                             |
| <b>Age</b>  | 60 years   |  |                             |
| <b>Education/Training</b>   | - Bachelor of Engineering (Civil),<br>Chiang Mai University  |  |                             |
|   | - Director Certification Program (DCP 155/2012),<br>Thai Institute of Directors Association  |  |                             |
|   | - Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal<br>Entities Against Bribery,<br>Office of the National Anti-Corruption Commission (NACC) |  |                             |
|   | - Things to Know about Investment Promotion,<br>The Board of Investment of Thailand  |  |                             |
|   | - EEC Mega Infrastructure Project Development: An Innovation Approach by New<br>space Technology Frontier GISTDA   |  |                             |
|   | - IFRS 9, Krung Thai Bank Plc.   |  |                             |
| <b>Shareholding (%)</b>   | - None -   |  |                             |
| <b>Family Relationship among<br/>Directors and Executives</b>         | - None -   |  |                             |
| <b>Experience in Last Five Years</b><br><b><u>Listed Company:</u></b> | <b>Period</b>  | <b>Position</b>                          | <b>Organization/Company</b> |
|   | 2011-Present   | Executive Vice President:<br>Engineering | CH. Karnchang Plc.          |
|   | 1997-2011  | Business Development<br>Manager          | CH. Karnchang Plc.          |
| <b><u>Other Company:</u></b>  | - None -   |  |                             |

| 18. Mr. Pichai Cheybumroong                                   |  |   |                             |
|---|--|---|-----------------------------|
| <b>Position</b>   | Executive Vice President: Purchasing   |   |                             |
| <b>Appointment Date</b>                                       | February 16, 2016  |   |                             |
| <b>Age</b>  | 58 years   |   |                             |
| <b>Education/Training</b>                                     | - Bachelor of Engineering (Civil Engineering),<br>King Mongkut's Institute of Technology Ladkrabang  |   |                             |
|   | - Reinforced-Concrete Structure Repair,<br>The Engineering Institute Of Thailand   |   |                             |
|   | - Pre-Injection Technology,<br>The Engineering Institute of Thailand   |   |                             |
|   | - The Leadership Grid,<br>Grid Thailand  |   |                             |
|   | - Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal<br>Entities Against Bribery,<br>Office of the National Anti-Corruption Commission (NACC) |   |                             |
|   | - Anti-Corruption and Prevention of Bribe Offering or Acceptance,<br>Office of the National Anti-Corruption Commission (NACC)  |   |                             |
|   | - Things to Know about Investment Promotion,<br>The Board of Investment of Thailand  |   |                             |
|   | - Customs Rates, Tariffs, and Formality relating to Import of Products from Overseas<br>for Construction Business,<br>The Customs Department                                     |   |                             |
|   | - Construction Price Estimation,<br>Kasetsart University   |   |                             |
|   |  |   |                             |
| <b>Shareholding (%)</b>                                       | 0.008  |   |                             |
| <b>Family Relationship among<br/>Directors and Executives</b> | - None -   |   |                             |
| <b>Experience in Last Five Years</b>                          | <b>Period</b>  | <b>Position</b>                           | <b>Organization/Company</b> |
|   | <b>Listed Company:</b>   |   |                             |
|   | 2016-Present   | Executive Vice President:<br>Purchasing   | CH. Karnchang Plc.          |
|   | 2009-2015  | Vice President:<br>Purchasing/Procurement | CH. Karnchang Plc.          |
| <b>Other Company:</b>   | - None -   |   |                             |
|   |  |   |                             |

|  |  |  |                             |
|--|--|--|-----------------------------|
| <b>19. Mrs. Rinrada Tangtrongkid</b>                           |  |  |                             |
| <b>Position</b>  | Executive Vice President: Accounting and Finance   |  |                             |
| <b>Appointment Date</b>  | February 16, 2016  |  |                             |
| <b>Age</b>   | 58 years   |  |                             |
| <b>Education/Training</b>                                      | - Master of Business Administration, Kasetsart University  |  |                             |
|  | - Bachelor of Accountancy, Ramkhamhaeng University   |  |                             |
|  | - Director Certification Program (DCP 234/2017), Thai Institute of Directors Association   |  |                             |
|  | - Anti-Corruption: The Practical Guide, Class 35/2016, Thai Institute of Directors Association   |  |                             |
|  | - Strategic CFO in Capital Markets Program, Class 3/2016 Stock Exchange of Thailand  |  |                             |
|  | - Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal Entities Against Bribery, Office of the National Anti-Corruption Commission (NACC) |  |                             |
|  | - Strategic Planning for Executive / Strategic Center, 2014  |  |                             |
|  | - Anti-Corruption and Prevention of Bribe Offering or Acceptance, Office of the National Anti-Corruption Commission (NACC)   |  |                             |
|  | - Basic Knowledge on Trade Finance and Prevention of Risk from Exchange Rate, Krung Thai Bank Plc.   |  |                             |
|  | - Things to Know about Investment Promotion, The Board of Investment of Thailand   |  |                             |
|  | - “Story Telling for Leaders”, Thai Institute of Directors Association   |  |                             |
|  | - Mergers & Acquisitions : Financial, Legal and Tax Strategies and Planning, Omega World Class Research Institute  |  |                             |
|  | - Customs Rates, Tariffs, and Formality relating to Import of Products from Overseas for Construction Business, The Customs Department                                     |  |                             |
|  | - e-Tax Invoice and e-Receipt, Dharmniti Seminar and Training Co., Ltd.  |  |                             |
|  | - IFRS 9, Krung Thai Bank Plc.   |  |                             |
|  | - Innovation-Driven New Investing Strategies to keep pace with the World Business, the Stock Exchange of Thailand  |  |                             |
| <b>Shareholding (%)</b>  | - None -   |  |                             |
| <b>Family Relationship among Directors and Executives</b>      | - None -   |  |                             |
| <b>Experience in Last Five Years</b><br><b>Listed Company:</b> | <b>Period</b>  | <b>Position</b>                                  | <b>Organization/Company</b> |
|  | 2016-Present   | Executive Vice President: Accounting and Finance | CH. Karnchang Plc.          |
|  | 1990-2015  | Vice President: Accounting                       | CH. Karnchang Plc.          |
| <b>Other Company:</b>  | - None -   |  |                             |

| 20. Mr. Wiboon Ungapipathanachai                        |  |   |                      |
|---|--|---|----------------------|
| Position  | Executive Vice President: Internal Audit Office  |   |                      |
| Appointment Date  | February 16, 2016  |   |                      |
| Age   | 63 years   |   |                      |
| Education/Training                                      | - Bachelor of Science (Accounting), Kasetsart University   |   |                      |
|   | - Project Management Program, Chulalongkorn University   |   |                      |
|   | - Internal Audit Program, Chulalongkorn University   |   |                      |
|   | - International Accounting Standard Program, EY Office Limited   |   |                      |
|   | - Propelling Guidelines for Stipulating Appropriate Internal Control Measures for Legal Entities Against Bribery, Office of the National Anti-Corruption Commission (NACC) |   |                      |
|   | - Director Certification Program (DCP 234/2017), Thai Institute of Directors Association   |   |                      |
|   | - Anti-Corruption and Prevention of Bribe Offering or Acceptance, Office of the National Anti-Corruption Commission (NACC)   |   |                      |
|   | - Things to Know about Investment Promotion, The Board of Investment of Thailand   |   |                      |
|   | - “Story Telling for Leaders”, Thai Institute of Directors Association   |   |                      |
|   | - Property, Plant and Equipment for 2017 and Financial Reporting Standard and Taxes, Dharmniti Seminar and Training Co., Ltd.  |   |                      |
|   | - Key Finance for Accountants, NYC Management Co., Ltd.  |   |                      |
|   | - Accounting X-Ray for Construction Business, NYC Management Co., Ltd.   |   |                      |
|   | - Problems and Practices on Expenditures for Investment under the New Law, Impacts on Bookkeeping, NYC Management Co., Ltd.  |   |                      |
|   | - Customs Rates, Tariffs, and Formality relating to Import of Products from Overseas for Construction Business, The Customs Department                                     |   |                      |
|   | - Withholding Tax Deducted at Source and Specific Business Tax, Full Version, Dharmniti Seminar and Training Co., Ltd.   |   |                      |
|   | - Now Analysis & Knowing the Future through Financial Statements, NYC Management Co., Ltd.   |   |                      |
|   | - Direct and Indirect Utilization of Statement of Cash Flows, NYC Management Co., Ltd.   |   |                      |
|   | - Financial Information Analysis and Financial Forecasting for Managerial Decision Making, NYC Management Co., Ltd.  |   |                      |
|   | - Customs Duty Accountants Need to Know, NYC Management Co., Ltd.  |   |                      |
|   | - IFRS 9, Krung Thai Bank Plc.   |   |                      |
|   | - 63 Accounting Techniques and Taxes for Foreign Exchange Rate-Related Business, Dharmniti Seminar and Training Co., Ltd.  |   |                      |
|   | - TFRS 15: Revenue from Contracts with Customers, NYC Management Co., Ltd.   |   |                      |
| Shareholding (%)  | - None -   |   |                      |
| Family Relationship among Directors and Executives      | - None -   |   |                      |
| Experience in Last Five Years<br><u>Listed Company:</u> | Period   | Position  | Organization/Company |
|   | 2016-Present   | Executive Vice President: Internal Audit Office | CH. Karnchang Plc.   |
|   | 2008-2015  | Vice President: Internal Audit Department       | CH. Karnchang Plc.   |
| <u>Other Company:</u>                                   | - None -   |   |                      |

| 21. Mr. Keerati Luangchookiat                           |   |  |                      |
|---|---|--|----------------------|
| Position  | Executive Vice President: Business Development                |  |                      |
| Appointment Date  | January 1, 2018   |  |                      |
| Age   | 45 years  |  |                      |
| Education/Training                                      | - Master of Project Management, Northwestern University       |  |                      |
|   | - Master of Business Administration, Chulalongkorn University |  |                      |
|   | - Bachelor of Engineering, Chulalongkorn University           |  |                      |
| Shareholding (%)  | 0.002   |  |                      |
| Family Relationship among Directors and Executives      | - None -  |  |                      |
| Experience in Last Five Years<br><u>Listed Company:</u> | Period  | Position                                       | Organization/Company |
|   | 2018-Present  | Executive Vice President: Business Development | CH. Karnchang Plc.   |
|   | 2014-2017   | Project Manager                                | CH. Karnchang Plc.   |
| <u>Other Company:</u>                                   | - None -  |  |                      |
|   |   |  |                      |
|   |   |  |                      |
|   |   |  |                      |



| 22. Mr. Nattavut Trivisvavet                                   |   |  |   |
|--|---|--|---|
| <b>Position</b>  | Company Secretary   |  |   |
| <b>Appointment Date</b>  | June 26, 2013<br>(Details of duties and responsibilities of Company Secretary appear on page 84 of the Annual Report) |  |   |
| <b>Age</b>   | 39 years  |  |   |
| <b>Education/Training</b>                                      | - Master of Management Science & Engineering,<br>Stanford University, U.S.A.  |  |   |
|  | - Bachelor of Science in Electrical Engineering,<br>Brown University, U.S.A.  |  |   |
|  | - Bachelor of Fine Arts in Visual Art,<br>Brown University, U.S.A.  |  |   |
|  | - Company Secretary Program (CSP 51/2013),<br>Thai Institute of Directors Association                                 |  |   |
| <b>Shareholding (%)</b>  | 0.148   |  |   |
| <b>Family Relationship among Directors and Executives</b>      | Mr. Plew Trivisvavet's son<br>Miss Supamas Trivisvavet's brother  |  |   |
| <b>Experience in Last Five Years</b><br><b>Listed Company:</b> | <b>Period</b>   | <b>Position</b>                                  | <b>Organization/Company</b>                                 |
|  | 2013-Present  | Company Secretary                                | CH. Karnchang Plc.  |
|  | 2012-Present  | Vice President:<br>Office of President           | CH. Karnchang Plc.  |
|  | 2012-2013   | Assistant Secretary of the<br>Board of Directors | CH. Karnchang Plc.  |
|  | 2011-2012   | Vice President:<br>Strategy and Planning         | CH. Karnchang Plc.  |
| <b>Other Companies:</b>  | 2017-Present  | Director   | CH. Karnchang Real Estate Co., Ltd.                         |
|  | 2015-Present  | Director and Managing Director                   | Bangkok Metro Networks Limited                              |
|  | 2009-2011   | Valuation AVP                                    | Barclays Capital Inc,<br>New York, NY                       |
|  | 2006-2009   | Valuation Senior Associate                       | International Fund Services (State Street),<br>New York, NY |

## 1. Directors, Executives and Controllers Holding Positions as Directors or Executives in Subsidiaries, Associated Companies or Related Companies

| Director Name                    | CH. Karnchang Public Company Limited | Subsidiaries                               |                                     |                               |                                      |                                   |
|----------------------------------|--------------------------------------|--|-------------------------------------|-------------------------------|--------------------------------------|-----------------------------------|
|                                  |                                      | CH. Karnchang-Tokyu Construction Co., Ltd. | CH. Karnchang Real Estate Co., Ltd. | CH. Karnchang (Lao) Co., Ltd. | Phrompratharn Construction Co., Ltd. | Prasertvit Construction Co., Ltd. |
| Mr. Aswin Kongsiri               | X                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Plew Trivisavet              | /, //, o                             | X  | X                                   | -                             | -                                    | -                                 |
| Mr. Vitoon Tejtassanasoontorn    | /                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Thawansak Sukhawun           | /                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Pavich Tongroach             | /                                    | -  | -                                   | -                             | -                                    | -                                 |
| Miss Supamas Trivisavet          | /, //, o                             | /  | /                                   | -                             | -                                    | -                                 |
| Mr. Narong Sangsuriya            | /, //, o                             | /  | -                                   | -                             | -                                    | -                                 |
| Mr. Prasert Maritanaporn         | /, //, o                             | /  | /                                   | -                             | -                                    | -                                 |
| Mr. Ratn Santaanop               | /, //, o                             | -  | -                                   | /                             | -                                    | -                                 |
| Mr. Anukool Tuntinas             | /, //, o                             | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Sittidej Trivisavet          | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Phongsarit Tantisuvanitchkul | o                                    | /  | -                                   | -                             | -                                    | -                                 |
| Mr. Pornnarong Siriyothin        | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Prapon Chanpradubfa          | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Phairat Prom-in              | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Thammanoon Surarat           | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Watchara Sanghattavattana    | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Phichai Choebamrung          | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mrs. Rinrada Tangtrongkid        | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Wiboon Ungapipathanachai     | o                                    | -  | -                                   | -                             | -                                    | -                                 |
| Mr. Keerati Luangchookiat        | o                                    | -  | -                                   | -                             | -                                    | -                                 |

Remark: X = Chairman; / = Director; // = Executive Director; /// = Managing Partner; O = Executive

| Director Name                    | CH. Karnchang<br>Public<br>Company<br>Limited | Associated Companies   |  | Related Companies                |                                      |                                       |   |                                  |                                      |
|----------------------------------|---|--|--|----------------------------------|--------------------------------------|---------------------------------------|---|----------------------------------|--------------------------------------|
|                                  |   | Bangkok<br>Expressway<br>and Metro<br>Public<br>Company<br>Limited | CK Power<br>Public<br>Company<br>Limited | TTW Public<br>Company<br>Limited | Bangkok Metro<br>Networks<br>Limited | CH. Karnchang<br>Holding<br>Co., Ltd. | Royal Rayong<br>Real Estate<br>International<br>Co., Ltd. | SouthEast Asia<br>Energy Limited | Xayaburi Power<br>Company<br>Limited |
| Mr. Aswin Kongsiri               | X   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Plew Trivisavet              | /, //, 0                                      | /, //  | /, //                                    | /                                | -                                    | /                                     | /   | /, //                            | /, //                                |
| Mr. Vitoon Tejatussanasoontorn   | /   | /  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Thawansak Sukhawun           | /   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Pavich Tongroach             | /   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Miss Supamas Trivisavet          | /, //, 0                                      | -  | /  | -                                | -                                    | /                                     | -   | -                                | -                                    |
| Mr. Narong Sangsuriya            | /, //, 0                                      | -  | /  | -                                | -                                    | /                                     | -   | /                                | -                                    |
| Mr. Prasert Maritanaporn         | /, //, 0                                      | -  | /  | -                                | -                                    | -                                     | /   | /                                | -                                    |
| Mr. Ratn Santiaannop             | /, //, 0                                      | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Anukool Tuntimas             | /, //, 0                                      | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Sittidej Trivisavet          | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Phongsarit Tantisuvanitchkul | 0   | /  | -  | /                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Pornnarong Siriyothin        | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Prapon Chanpradubfa          | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Phairat Prom-in              | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Thammanoon Surarat           | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Watchara Sanghattawattana    | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Phichai Choeibamrung         | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mrs. Rirrada Tangtrongkid        | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Wiboon Ungapipathanachai     | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |
| Mr. Keerati Luangchookiat        | 0   | -  | -  | -                                | -                                    | -                                     | -   | -                                | -                                    |

Remark: X = Chairman; / = Director; // = Executive Director; O = Executive



| Director Name                   | CH. Karnchang Public Company Limited | Related Companies          |                            |                         |                    |                                       |                                |
|---------------------------------|--------------------------------------|----------------------------|----------------------------|-------------------------|--------------------|---------------------------------------|--------------------------------|
|                                 |                                      | CK. Office Tower Co., Ltd. | Expert Transport Co., Ltd. | Mahasiri Siam Co., Ltd. | Mahasiri Co., Ltd. | Bang Pa-in Land Development Co., Ltd. | Kamala Senior Living Co., Ltd. |
| Mr. Aswin Kongsiri              | X                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Plew Trivisvavet            | /, //, o                             | /                          | /                          | /                       | /                  | /                                     | -                              |
| Mr. Vitoon Tejatussanasoontorn  | /                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Thawansak Sukhawun          | /                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Pavich Tongroach            | /                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Miss Supamas Trivisvavet        | /, //, o                             | /                          | -                          | /                       | -                  | /                                     | /                              |
| Mr. Narong Sangsuriya           | /, //, o                             | -                          | /                          | -                       | -                  | -                                     | -                              |
| Mr. Prasert Marittanaporn       | /, //, o                             | -                          | /                          | -                       | -                  | -                                     | -                              |
| Mr. Ratn Santaannop             | /, //, o                             | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Anukool Tuntimas            | /, //, o                             | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Sittidej Trivisvavet        | o                                    | -                          | /                          | -                       | -                  | -                                     | -                              |
| Mr. Phongsarit Tantisuvanichkul | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Pornnarong Siriyothin       | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Prapon Chanpradubfa         | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Phairat Prom-in             | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Thammanoon Surarat          | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Watchara Sanghattawattana   | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Phichai Choeibamrung        | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mrs. Rinrada Tangtrongkid       | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Wiboon Ungapipathanachai    | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |
| Mr. Keerati Luangchookiat       | o                                    | -                          | -                          | -                       | -                  | -                                     | -                              |

Remark: X = Chairman; / = Director; // = Executive Director; o = Executive

## Attachment 2 : Details of Directors of Subsidiaries

| Subsidiary Name<br>Director Name | CH. Karnchang-Tokyu<br>Construction Co., Ltd. | CH. Karnchang<br>Real Estate Co., Ltd. | CH. Karnchang<br>(Lao) Co., Ltd. | Phrompratharn<br>Construction Co., Ltd. | Prasertvit Construction<br>Co., Ltd. |
|----------------------------------|---|--|----------------------------------|---|--------------------------------------|
| Mr. Yim Trivisvavet              | -   | -                                      | -                                | /                                       | -                                    |
| Mrs. Ornanong Trivisvavet        | -   | -                                      | -                                | -                                       | /                                    |
| Mr. Plew Trivisvavet             | X   | X                                      | -                                | -                                       | -                                    |
| Miss Supamas Trivisvavet         | /   | /                                      | -                                | -                                       | -                                    |
| Mr. Nattavut Trivisvavet         | -   | /                                      | -                                | -                                       | -                                    |
| Mr. Narong Sangsuriya            | /   | -                                      | -                                | -                                       | -                                    |
| Mr. Prasert Marittanaporn        | /   | /                                      | -                                | -                                       | -                                    |
| Mr. Phongsarit Tanisuvanichkul   | /   | -                                      | -                                | -                                       | -                                    |
| Miss Khajornwit Sae-chia         | /   | -                                      | -                                | -                                       | -                                    |
| Mr. Hideo Miyagawa               | /   | -                                      | -                                | -                                       | -                                    |
| Mr. Tsuneo Izuka                 | /   | -                                      | -                                | -                                       | -                                    |
| Mr. Mitsuhiro Terada             | /   | -                                      | -                                | -                                       | -                                    |
| Mr. Masatoshi Shimizu            | /   | -                                      | -                                | -                                       | -                                    |
| Mr. Shigehiko Shibusawa          | /   | -                                      | -                                | -                                       | -                                    |
| Mr. Ratn Santaannop              | -   | -                                      | /                                | -                                       | -                                    |

Remark X = Chairman; / = Director.

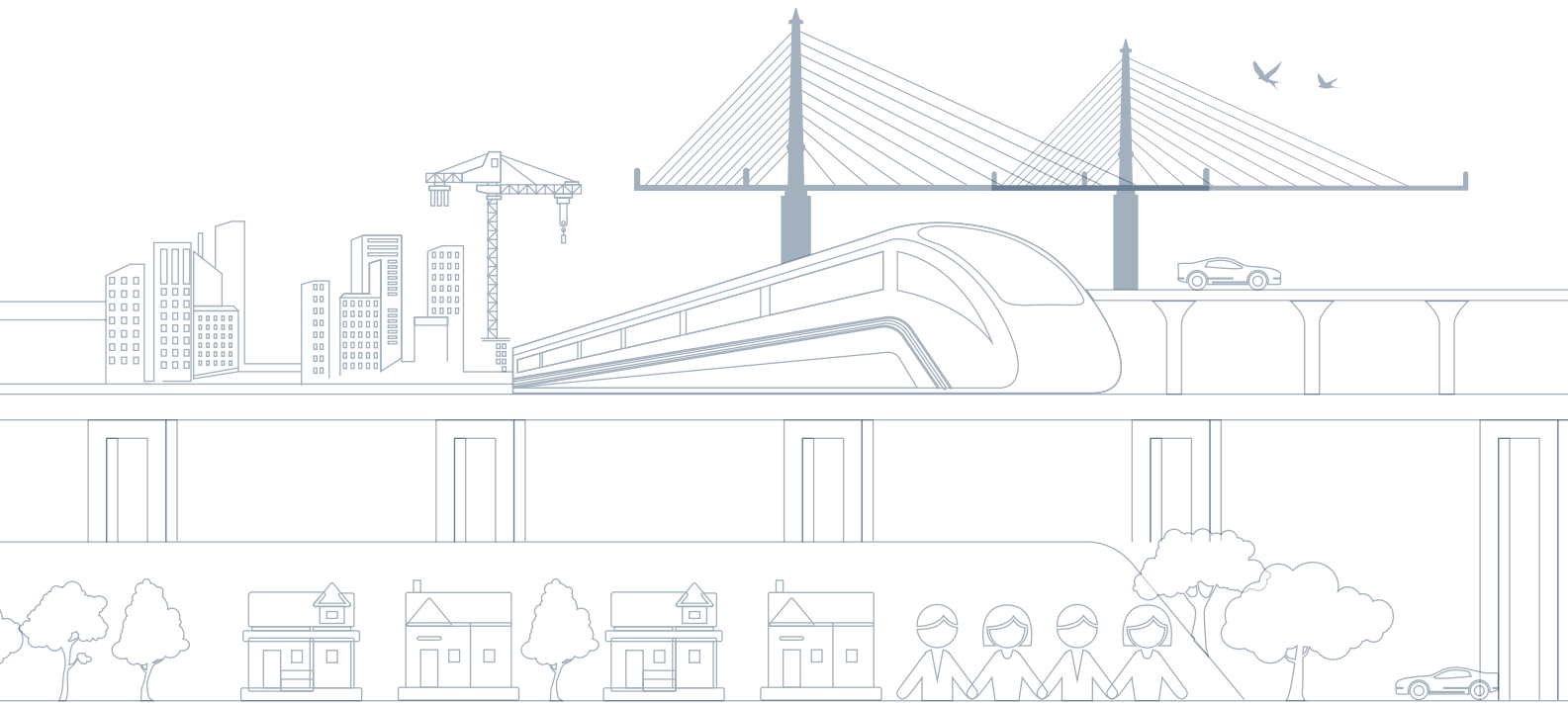
## Attachment 3 : Details of Head of Internal Audit Unit and Head of Compliance Unit

### 1. Head of Internal Audit Unit

|                             |  |
|-----------------------------|--|
| Name-Surname                | Mr. Wiboon Ungapipathanachai   |
| Position                    | Executive Vice President: Internal Audit Office  |
| Education                   | - Bachelor of Science (Accountancy)<br>Kasetsart University  |
| Work Experience             | 2016 - Present - Executive Vice President: Internal Audit Office<br>2008 - 2015 - Vice President:<br>Internal Audit Department   |
| Related Training            | - Project Management Program<br>Chulalongkorn University<br>- Internal Audit Program<br>Chulalongkorn University<br>- International Accounting Standards<br>EY Company Limited<br>- Property, Plant and Equipment for 2017 and Financial<br>Reporting Standard and Taxes<br>- Key Finance for Accountants<br>- Problems and Practices on Expenditures for Investment<br>under New Law, Impacts on Bookkeeping<br>- Now Analysis & Knowing the Future through Financial<br>Statements   |
| Duties and Responsibilities | 1. Internal audit works<br>1.1 Preparing the annual internal audit plan;<br>1.2 Supervising the review of performance, adequacy and<br>appropriateness of the internal control system of the<br>Company's internal work systems in compliance with<br>the plan;<br>1.3 Concluding the results, together with observations<br>and suggestions for improvement of the audited<br>works, as well as following up the suggested<br>improvement;<br>1.4 Reporting on the audit results to management and the<br>Audit Committee.<br>2. Works in support of the Audit Committee<br>2.1 Reviewing the annual and quarterly financial<br>statements;<br>2.2 Preparing information in support of the selection and<br>nomination of the Company's auditor;<br>2.3 Reviewing the disclosure of information to ensure<br>compliance with the rules and regulations and the<br>good corporate governance principles;<br>2.4 Coordinating and organizing the Audit Committee's<br>meetings.<br>3. Other works as assigned by the Audit Committee. |

## 2. Head of Compliance Unit

|                             |  |
|-----------------------------|--|
| Name-Surname                | Mrs. Thipwaree Athagrisna  |
| Position                    | Vice President: Legal Department /<br>Compliance Manager   |
| Education                   | <ul style="list-style-type: none"> <li>- Master of Laws<br/>Ramkhamhaeng University</li> <li>- Bachelor of Laws<br/>Thammasat University</li> </ul>  |
| Work Experience             | 2016 - Present      - Vice President:<br>Legal Department<br>2008 - 2015        - Compliance Manager<br>2006 - 2007        - Legal Manager   |
| Related Training            | <ul style="list-style-type: none"> <li>- Corporate Secretary Development Program (CSDP 15)<br/>Thai Listed Companies Association</li> <li>- Company Secretary Program (CSP 29/2009)<br/>Thai Institute of Directors Association</li> <li>- Board Reporting Program (BRP 4/2010)<br/>Thai Institute of Directors Association</li> <li>- Effective Minute Taking (EMT 18/2012)<br/>Thai Institute of Directors Association</li> </ul>  |
| Duties and Responsibilities | <ol style="list-style-type: none"> <li>1. Reviewing the appropriateness and adequacy of the Company's good corporate governance policy, as well as their revisions to meet the international practices for good corporate governance;</li> <li>2. Reviewing with management as to compliance with the good corporate governance principles as specified by the Company and disclosed in the Annual Report;</li> <li>3. Providing suggestions for preparation of the Company's corporate governance development plan in compliance with the good corporate governance principles;</li> <li>4. Providing advice and suggestions on the good corporate governance practices to the Board of Directors.</li> </ol> |





**CH. KARNCHANG PUBLIC COMPANY LIMITED**



587 Viriyathavorn Building, Sutthisarnvinitchai Road,  
Ratchadaphisek Subdistrict, Dindaeng District, Bangkok 10400

Tel : 66(0)-2277-0460  
66(0)-2275-0026  
Fax : 66(0)-2275-7029

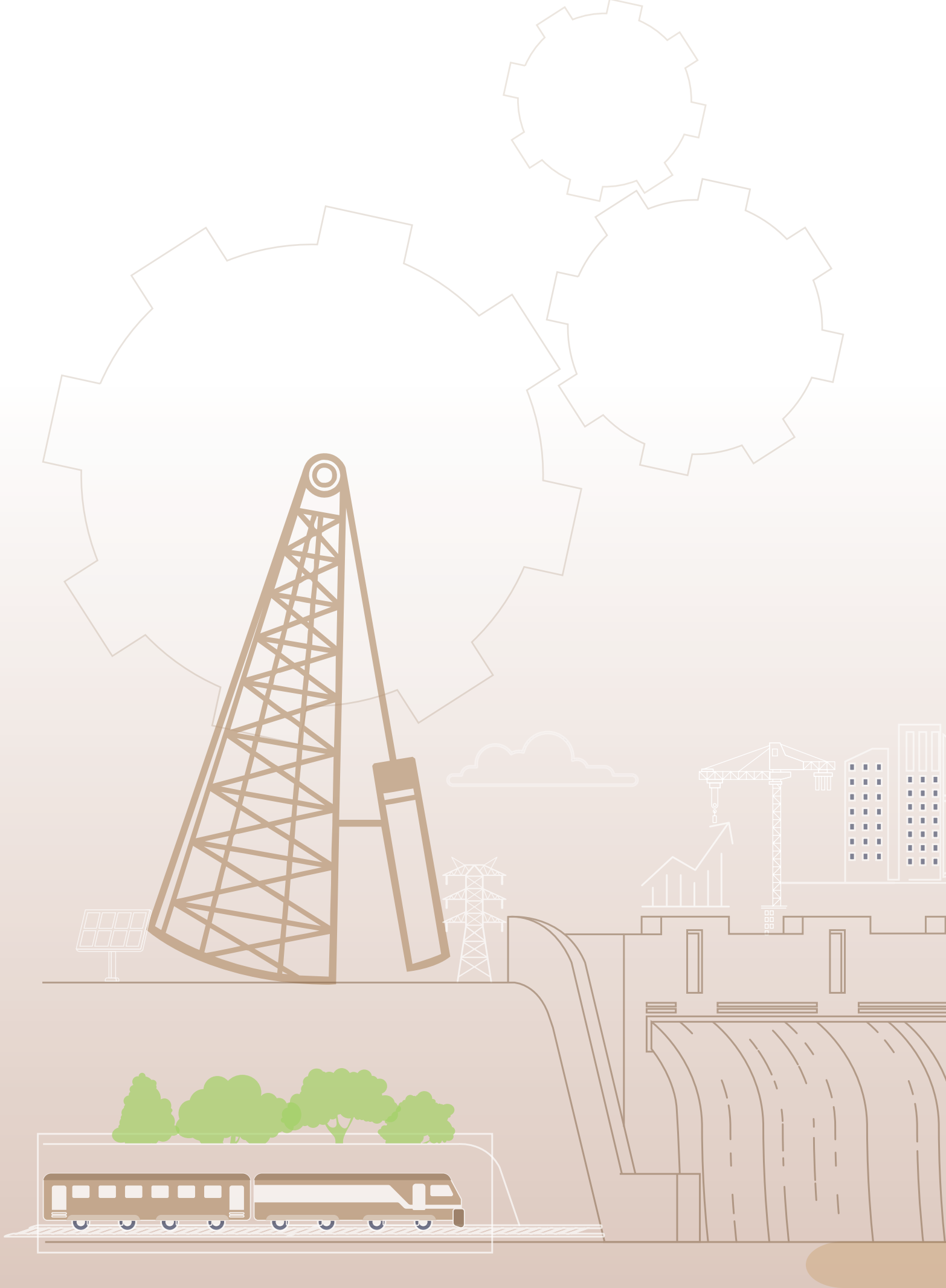


CH. KARNCHANG PUBLIC COMPANY LIMITED

## Sustainable Development Report

# 2018







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## Message from the Chairman of the Board of Directors

“

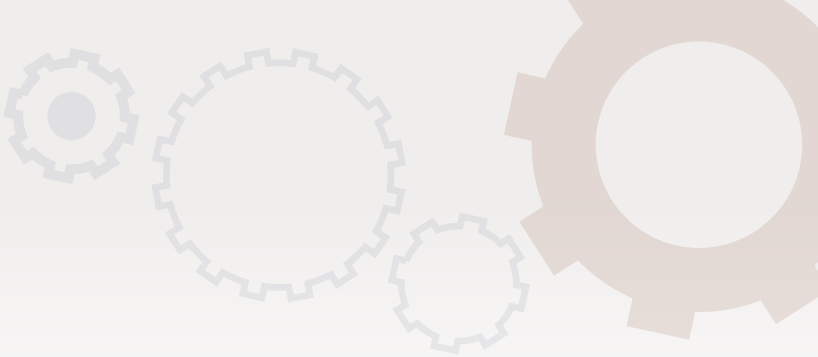
*CH. Karnchang recognizes  
the importance and necessity  
of establishing  
interconnected balance and  
care to the environment and  
the society*

”



Mr. Aswin Kongsiri

Chairman of the Board of Directors



CH. Karnchang has been a country's leading construction company, all operations and decision-makings require prudence and professionalism, fundamentally based on facts and social responsibility so as to bring about balance and enhance long-term business competitiveness. All operations could not have become successful, should there be no pivotal drive from all staff, alliances, trading partners and stakeholders. CH. Karnchang recognizes the importance and necessity of establishing interconnected balance and care to the environment and the society. With awareness to preservation and nurture to the environment, determination and operations with professionalism in the framework of sustainable and environmental-friendly business operations, including the communities and society, we thus are determined to operate under the concept "CH. Karnchang, CH constructs sustainably.", for which the principle of social and environmental responsibilities is incorporated into all business operational proceedings, namely, the construction business which is carried out with responsibility, creativity, conducive to good construction, including the instilling of positive awareness - mutual responsibility awareness on the environment and society to internal personnel, implementation for public benefits, in cooperation with other sectors in certain aspects - so as to be aligned with our strategic operational plan or known as "Green Construction".

In adherence to the business operations, we adopt the United Nations' international framework for Sustainable Development Goals (SDG) into managing the sustainability in alignment with the business and growth strategy. This thus enables CH. Karnchang to be selected, by ThaiPat Institute, as one of 100 listed companies for environmental, social and governance (ESG) recognition of the real-estate and construction class for 3 consecutive years (2015 - 2017) and also considered as one in the list of 79 listed companies as Thailand Sustainability Investment (THSI) for the year 2018. These are credentials of CH. Karnchang's business operational potential in regard to the governance and social responsibility in integration with business growth - a good sample of corporate development with sustainability.

With prominent business structure and financial stability, TRIS thus declared the corporate credit rating and rating of the Company's senior unsecured debentures at "A-" level. Further, the Company is considered, by the Stock Exchange of Thailand and the Money and Banking Magazine, to be awarded with the Best Investor Relations Award in the group of listed companies having the securities value range between Baht 30,000 - 100,000 Million for the year 2018. It is proven of the business operational potential of the Group of companies in regard to adherence to the principle of governance and social responsibility incorporated with the business expansion - a good sample of corporate development with sustainability. Additionally, CH. Karnchang values in-house personnel development, emphasizes potential personnel development to support business expansion in the future, promotes anti-corruption efforts, take care of employee's health - an integral part to support the Company's growth with value and sustainability, establishes the corporate stability and unity, and is ready to push the business to become the leader in the construction industry.

Eventually, I, as Chairman of the Board of Directors of CH. Karnchang Public Company Limited, would like to express our thankfulness to staff, customers, trading partners, including stakeholders of all sectors, be it shareholders, customers, trading partners, communities and society for incessant cooperation and support until CH. Karnchang has moved through the year 2018 with sustainability. I am confident that the cooperation from all sectors incorporated with true intent in investment and operations by taking into account the environment, society and economy will result that CH. Karnchang be capable to move forward with sustainability and stability. Please be assured that I and all staff would dedicate our best capabilities to grow CH. Karnchang in parallel with the society with sustainability as well as participation in the promotion and enhancement of the quality of lives, the country's good environment and society further.



## Message from the Chairman of the Executive Board and the President

“

*We believe the crucial  
importance of corporate  
sustainable development is  
the people*

”



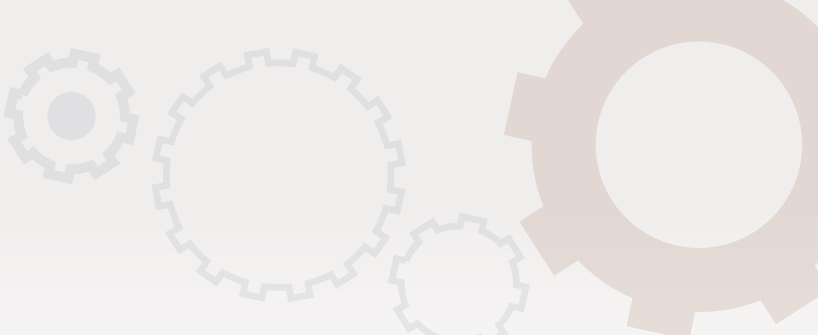
Mr. Plew Trivisvavet

Chairman of the Executive Board

Dr. Supamas Trivisvavet

President





Strong foundation of CH. Karnchang's business structure enables the Company to be well managed amid economic fluctuations and world's changes so occurred. The construction contract business can be operated with stability and attain the set targets whereas impacts to the communities and society can be reduced through the environmental quality control to be at par with the standard level as well as recognizing the importance of occupational health and safety in accordance with the Company's core policy. Regarding the investment business in the utilities infrastructure projects, the returns are consistently profitable, generating non-interrupting rise to both quality value and price value to companies within the CH. Karnchang Group - guidance to sustainable development of CH. Karnchang. As such, CH. Karnchang communicates with stakeholders of all sectors so as to learn of impacts, expectations and demands in relevant aspects for the purpose of analysis, feasibility study, risk management, planning for efficiency development and enhancement of operational capacity, aimed to bring about optimum benefits to stakeholders of all sectors and the country at the same time.

In regard to the Company's operational results in the previous year, the revenue was recognized according to the goal at Baht 31,176 Million, gross profit rate was 7.92%. Construction projects have been implemented to completion according to the set schedules and opened for services, namely, Project of MRT Green Line, Bearing — Samut Prakarn Section, Project of Expressway Linking Srirat Expressway — Bangkok Outer Ring heading to Chaengwattana Road, Project of Mae Fah Luang Medical Complex Hospital, Project of the 2<sup>nd</sup> Water Treatment Plant of Samut Sakhon - Nakorn Pathom and Pathum Thani - Rangsit, while all other projects also progressed according to the plans. Projects about to be completed in 2019 include Project of MRT Blue Line Extension, 6th Agreement, Management, Procurement, Installation, Test of System Works and Trial-Run, as well as Project of Xayaburi Hydroelectric Power Plant which commands high value, having taken a long construction period and imposed by myriads of challenges but the

Company has been able to manage the Project well, its completion is expected according to the plan in October 2019.

We believe the crucial importance of corporate sustainable development is the people. CH. Karnchang places importance to people development in all fields which include the engineering, construction project management, financial management through emphasis on learning - sharing, linking experiences and new concepts of people of various batches so as to capture new body of knowledge and innovation to ensure the business be on par with the technology and changes in the digital era.

During the previous year, CH. Karnchang has supported the "Startup Thailand 2018 Project" the objective of which is to promote 2 parts of corporate development at the same time, namely, internal innovation development and external innovation search. In regard to the Company's operations, the technology for design and construction with the Building Information Modeling (BIM) system is adopted for use in construction planning to generate efficiency, rapidity, quality control of construction works and control of resources use to turn out maximum benefits and better cost management. Both the search for innovation and adopting modern technology into the work are believed to be beneficial to people development, development of body of knowledge, corporation development while serving as a part in developing the Thai construction industry to be modernized with stability and leading to sustainability of the country.

Lastly, Dr. Supamas and I, on behalf of the Executive Board, the management and all staff, would like to express our gratitude to shareholders and stakeholders of all sectors for giving CH. Karnchang the opportunity to work for the society and the country for a long period. We would perform the duties to our best with honesty, integrity, adherence to the moral principle, based on ethics, transparency, accountability and corporate governance with the purpose to jointly establish sustainability to CH. Karnchang and the country further.



## 2. Our CH. Karnchang

### 2.1 Background and Significant Changes



CH. Karnchang Public Company Limited or CH. Karnchang was incorporated as a limited company, with the initial registered capital of Baht 1,400,000, on November 27, 1972, to engage in general construction business. Initially, CH. Karnchang's scope of work covered construction of buildings and general civil works, and its major clients were government agencies, such as, the Royal Thai Army and the Royal Thai Air Force. The achievements bringing reputation to the Company in the initial period included, for example, Chulachomklao Royal Military Academy, various buildings, hospitals and public utilities for the Royal Thai Army and the television station building for the Mass Communication Organization of Thailand (MCOT).

Subsequently, CH. Karnchang realized the need to enlarge the scope of its business operations. In this respect, in 1981, CH. Karnchang entered into a joint venture with Tokyu Construction Co., Ltd., one of Japan's top ten construction contractors, for the purpose of learning of construction technology and business alliance.

On October 10, 1994, CH. Karnchang was converted into a public company, resulting in an increase in its registered capital to Baht 700,000,000, and listed on the Stock Exchange of Thailand on August 3, 1995. On April 19, 1996, the Company registered the increase of its registered capital from Baht 700,000,000 to Baht 1,050,000,000, at which time, the Company had construction technology



development through its joint ventures with foreign companies which possess expertise, e.g., Bilfinger AG from Germany, Thames Water International Limited from England. This has enabled CH. Karnchang to expand its scope of engagements to the point CH. Karnchang has become one of a few construction contractors which are sufficiently well-prepared to carry out sophisticated construction requiring advanced construction technology.

As at December 31, 2018, CH. Karnchang's registered capital was Baht 1,693,899,970 Baht 1,693,896.872

of which was paid-up, with executives, permanent and daily staff totaling 1,556 persons\* Head Office: 587 Viriyathavorn Building, Sutthisarnvinitchit Road, Ratchadaphisek Subdistrict, Dindaeng District, Bangkok 10400

Registration No.: 0107537002575 (formerly Bor Mor Jor. 504) CH. Karnchang's operating revenues comprise two core revenues, namely, revenue from construction services and revenue from investment.

\* The number of staffs as reported above is the number of all full-time staffs. There also are 415 staff members of daily staff, 1,940 staff members of CKCH Joint Venture, 890 staff members of CKST Joint Venture, including 2,457 staff members of CH.Karnchang (LAO)



## 2.2 Milestones of CH.Karnchang







**2003**

Thai International Airways Catering Building Project, Suvarnabhumi Airport



**2004**

Founded SouthEast Asia Energy Limited (SEAN) Kanchanaphisek Expressway Project



**2005**

SOMDEJ BRA DEBARATANA Building, Ramathibodi Hospital



**2006**

Nam Ngum 2 Hydroelectric Power Project



**2009**

MRT Chalong Ratchadham Line Project



**2010**

Founded Xayaburi Power Company Limited (XPCL)



**2011**

Founded CK Power Company Limited (CKP) Xayaburi Hydropower Project



**2012**

Sirat Expressway Project - Bangkok Outer Ring Road



**2016**

Double Track Railway Project (Chira Junction - Khonkaen)



**2017**

MRT Orange Line Project (Thailand Cultural Center - Min Buri)

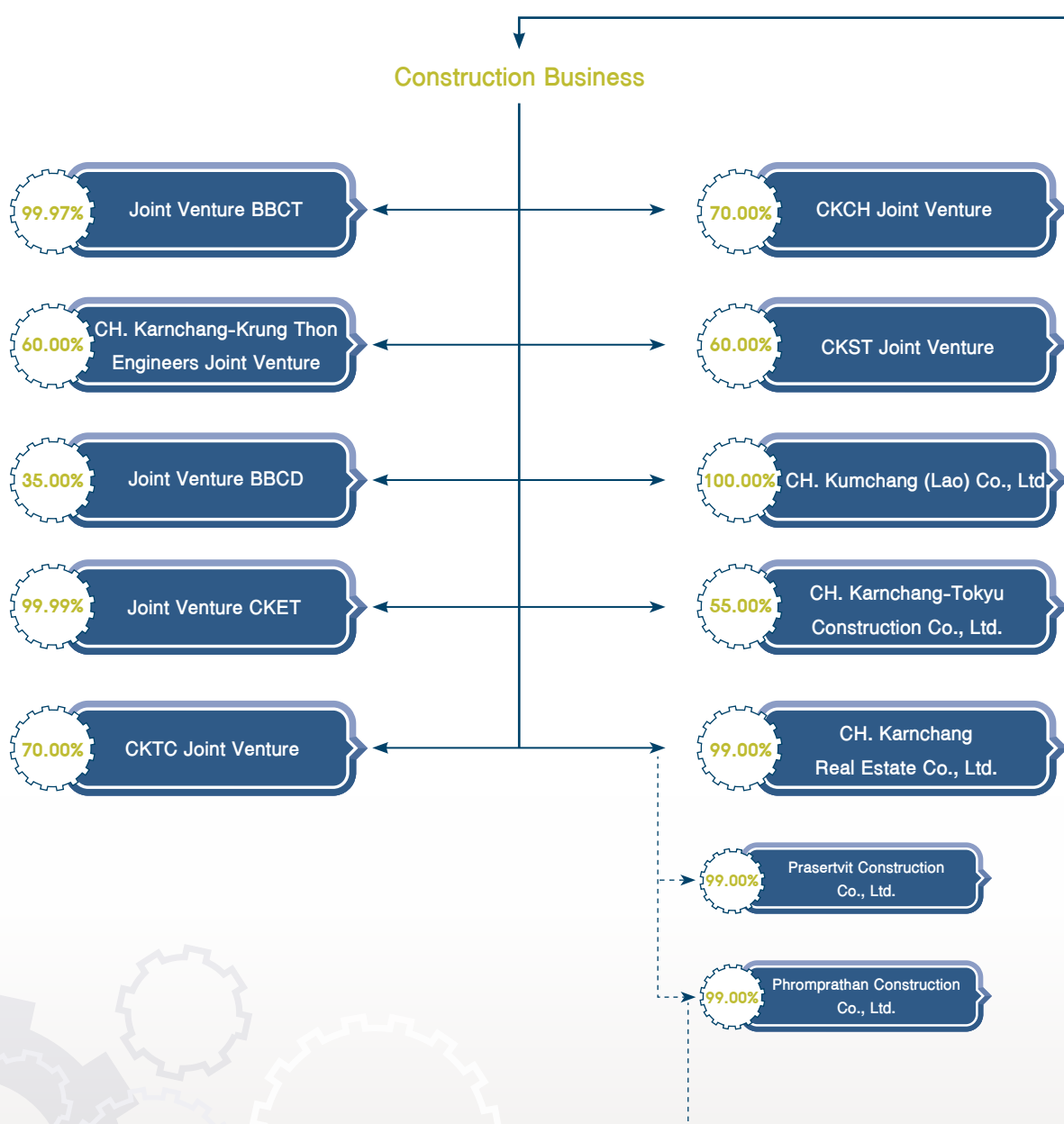
## 2.3 Nature of Business Operations

### 2.3.1 Organization Chart of Group of CH.Karnchang Public Company Limited

Business Operations of the Company, Subsidiaries and Associated Companies, divided into:

Organization Chart of CH. Karnchang Public Company Limited.

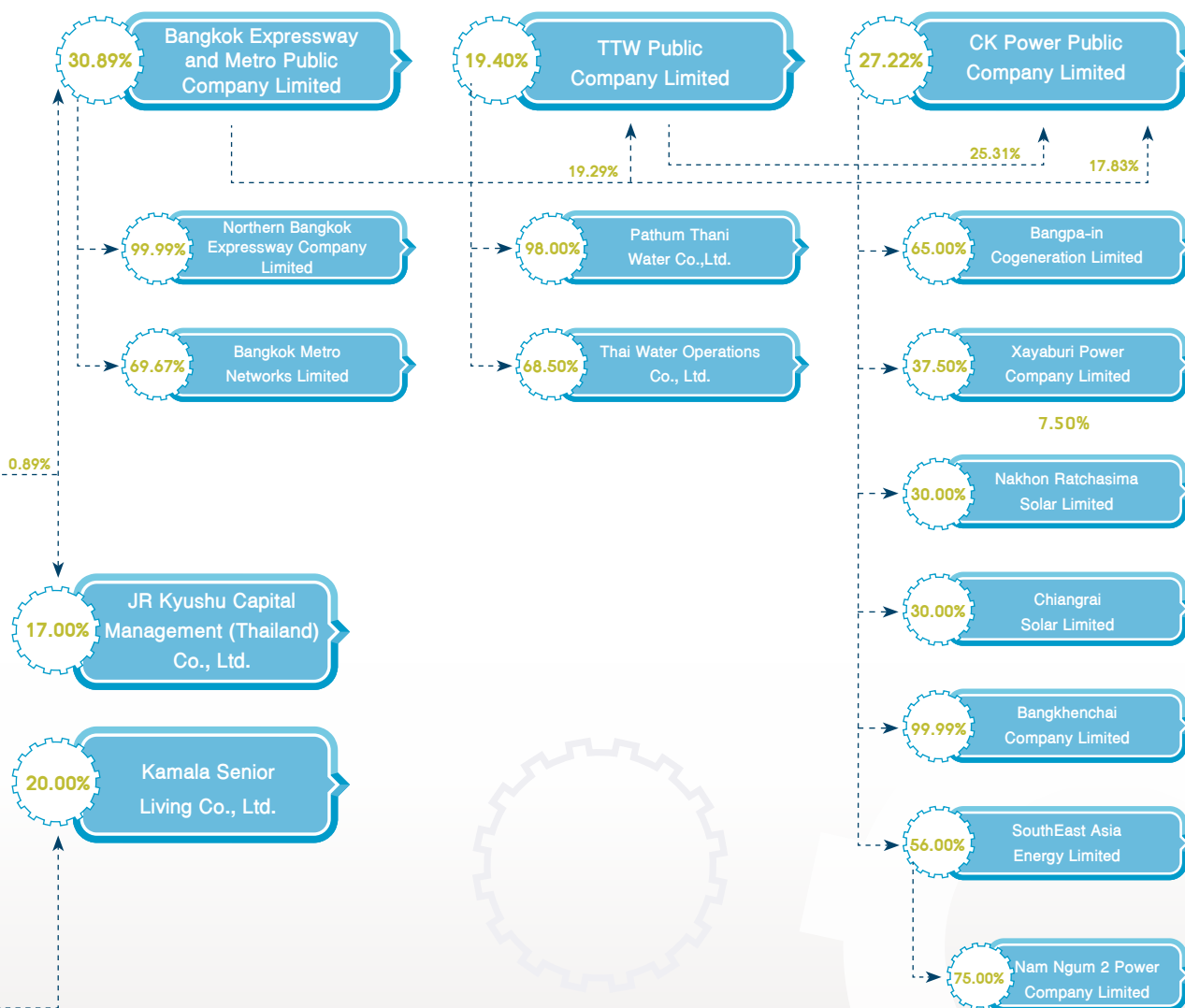
(As at December 31, 2018)





## CH. Karnchang Public Company Limited

### Infrastructure Investment





### 2.3.2 Construction Business

CH. Karnchang engages in the business of contract construction as a primary business activity for government agencies, state enterprises and private entities, in the form of main contractor and sub-contractor.

#### 1. Main Contractor

CH. Karnchang accepts engagement for construction through bidding process and negotiation in the capacity as main contractor, directly from project owner. CH. Karnchang may submit proposals in its own name and in collaboration with any specialized foreign company under the terms of reference of the project owner in case of a large-scale project, which requires participation of such specialized foreign company.

#### 2. Sub Contractor

CH. Karnchang accepts subcontract work from other main contractor that is awarded the work directly from project owner. Most works of this nature will involve a production process utilizing large-sized and sophisticated machinery, which are usually operated by foreign companies. CH. Karnchang will consider accepting subcontract work from companies with reputation and good financial standing, so as to enable it to have the opportunity to accept transfer of technology in respect of engineering, production process and management, as well as creating business alliance with qualified capability to carry out large-scale projects which require more advanced technology in the future.

### 2.3.3 Concession Business

CH. Karnchang will participate in bidding for various concession projects of the government, which involve the country's infrastructure systems. These projects are carried out in various forms as described below:

#### 1. Build Operate and Transfer (BOT)

The private entity shall be granted the right under a concession agreement from the government for investment in construction and operation to derive returns within a specified period, and during the operation, the ownership of the property shall remain vested in the private entity. After the end of the concession period, the ownership of the invested property shall be transferred to the government in consideration of the grant of the concession. Projects of this nature include Pathum Thani Water Co., Ltd., with a concession period of 25 years, SouthEast Asia Energy Limited, with a concession period of 25 years, and Xayaburi Power Company Limited, with a concession period of 29 years.

#### 2. Build Transfer and Operate (BTO)

The private entity shall carry out the design, supply and construction of property, the ownership of which shall be transferred to the government immediately after the construction completion. The private entity shall be granted the right to utilize such invested property under the concession agreement to derive returns within a specified period. During the period the private entity is still entitled to utilize such property under



the concession period, such property will be recorded as the right to utilize property, which is amortized throughout the concession period. An example of projects of this nature is Bangkok Expressway and Metro Public Company Limited, with a concession period of 30 years.

### **3. Build Own and Operate (BOO)**

The private entity shall carry out construction and management by its own investment. The ownership of the invested property is vested in the private entity. However, the private entity shall have an agreement with the government to guarantee long-term revenue, whereby the government agency shall purchase goods during the term of the agreement, and upon expiration of the concession period, such property shall remain vested in the investing company. An example of projects of this nature is TTW Public Company Limited, with a concession period of 30 years.

### **4. Acquire Operate and Transfer (AOT)**

In the concession of this nature, the private entity shall be granted the concession right from the government and the private entity shall acquire property as its own assets, for example, in the MRTA Initial System Project, Chaloem Ratchamongkhon Line. The private entity shall be entitled to operate the project to derive returns within a specified period as agreed upon with the government. After the end of the concession agreement, the ownership of the property invested by the private entity shall be transferred to the government. An example of projects of this nature is Bangkok Expressway and Metro Public Company Limited, with a concession period of 25 years.





**Investment Percentage in Concession Business**  
(As at December 31, 2018)


| Company Name                      | Stock Quote | Shareholding (%) | Year Established | Concessionaire | Registered Capital (MB) | Par Value (Bt/share) |
|-----------------------------------|-------------|------------------|------------------|----------------|-------------------------|----------------------|
| Bangkok Expressway and Metro PCL. | BEM         | 30.89            | 2015             | EXAT MRTA      | 15,285                  | 1.00                 |
| TTW PCL.                          | TTW         | 19.04            | 2000             | PWA            | 3,990                   | 1.00                 |
| CK Power PCL                      | CKP         | 27.22            | 2011             | EGAT PEA       | 9,240                   | 1.00                 |

### 2.3.4 Details of Business Operations of the Company, Subsidiaries, Associated Companies and Joint Ventures

| Joint Venture/Company Name  | Shareholding Ratio  | Nature of Work   |
|---|---|--|
| Construction Business   |   |  |
| 1. CH. Karnchang (Lao) Co., Ltd.  | 100.00%   | Construction of the Nam Ngum 2 Hydroelectric Power Project and the Xayaburi Hydroelectric Power Project  |
| 2. CH. Karnchang Real Estate Co., Ltd.  | 99.00%  | Trading of Land, Allocation of Land and Residential Buildings  |
| 3. Phrompratharn Construction Co., Ltd.   | 99.00% of shares held by CH. Karnchang Real Estate Co., Ltd.        | Construction   |
| 4. Prasertvit Construction Co., Ltd.  | 99.00% of shares held by CH. Karnchang Real Estate Co., Ltd.        | Construction   |
| 5. Kamala Senior Living Co., Ltd.   | 20.00% of shares held by CH. Karnchang Real Estate Co., Ltd.        | Development and management of the elderly residential project located at Tambon Kamala, Amphoe Kathu, Phuket Province  |
| 6. CH. Karnchang-Tokyu Construction Co., Ltd.   | 55.00%  | Construction of All Kinds  |
| 7. JR Kyushu Capital Management (Thailand) Co., Ltd.  | 17.00% of shares held by CH. Karnchang-Tokyu Construction Co., Ltd. | Holding Company by holding shares in other companies engaging in businesses of hotels and serviced apartments for rent   |
| 8. Joint Venture BBCT comprising CH. Karnchang Public Company Limited, Bilfinger+ Berger Bauaktiengesellschaft, Tokyu Construction Co., Ltd. and CH. Karnchang-Tokyu Construction Co., Ltd. | 99.97%  | (Sectors D and C1A) Construction of the Second Stage Expressway, Sector C+, Chaeng Watthana - Bang Phun - Bang Sai, Sector D, Asoke - Srinagarindra, and Sector C1A, Ngam Wong Wan - Chaeng Watthana   |
| 9. Joint Venture CKET comprising CH. Karnchang Public Company Limited and Expert Transport Co., Ltd.  | 99.99%  | Project Operation and Management under the Agreement for Concession for Design, Manufacture, Delivery, Installation, Testing and Commissioning of M&E Equipment and for Operation and Maintenance of the MRTA Initial System, Chaloem Ratchamongkhon Line. |
| 10. CKTC Joint Venture comprising CH. Karnchang Public Company Limited and Tokyu Construction Co., Ltd.   | 70.00%  | Operations for Construction Project of the MRT Purple Line, Bang Yai - Rat Burana, Bang Yai - Bang Sue Section; Contract 1: Elevated Structures (East)   |



| Joint Venture/Company Name   | Shareholding Ratio  | Nature of Work  |
|--|---|---|
| 11. CH. Karnchang-Krung Thon Engineers<br>Joint Venture comprising CH. Karnchang Public Company Limited and Krung Thon Engineers Company Limited | 60.00%  | Operations for Construction of Phra OngChao Chaianuchit Canal Conduit System - Bang Phra Reservoir and Appurtenant Structures Contract 1 Project, Project for Diversion of Water from Eastern Chao Phraya River Basin - Bang Phra Reservoir, Chon Buri Province |
| 12. BBCD Joint Venture comprising Bilfinger + Berger AG, CH. Karnchang Public Company Limited and Walter Bau AG                                  | 35.00%  | Construction of the (Bang Na - Bang Pli - Bang Pakong) Expressway   |
| 13. CKCH Joint Venture comprising CH. Karnchang Public Company Limited and Ch. Thavee Construction Co., Ltd.                                     | 70.00%  | Construction of Double Track Railroad, Chira Junction - Khon Kaen Section   |
| 14. CKST Joint Venture comprising CH. Karnchang Public Company Limited and Sino-Thai Engineering & Construction Public Company Limited           | 60.00%  | Construction of the MRT Orange Line Project (East Section), Thailand Cultural Centre - Min Buri Section, Contracts 1, 2 and 5   |
| <b>Infrastructure Investment</b>   |   |   |
| 1. Bangkok Expressway and Metro Public Company Limited   | 30.89%  | Expressway and Metro Services, including Commercial Development in connection with the Metro and Expressway Systems   |
| 2. Northern Bangkok Expressway Company Limited   | 99.99% of shares held by Bangkok Expressway and Metro Public Company Limited                                  | Construction and Management of the Udon Rattaya Expressway  |
| 3. Bangkok Metro Networks Limited  | 69.67% of shares held by Bangkok Expressway and Metro Public Company Limited                                  | Commercial Development Business   |
| 4. TTW Public Company Limited  | 19.40%  | Tap Water Production and Distribution for the Provincial Waterworks Authority in Nakhon Pathom Province and Samut Sakhon Province   |
| 5. Pathum Thani Water Co., Ltd.  | 98.00% of shares held by TTW Public Company Limited   | Tap Water Production and Distribution in Pathum Thani and Rangsit   |
| 6. Thai Water Operations Co., Ltd.   | 68.50% of shares held by TTW Public Company Limited and 31.50% of shares held by Pathum Thani Water Co., Ltd. | Administration and Management of Tap Water Production and Distribution Systems and Wastewater Treatment System  |



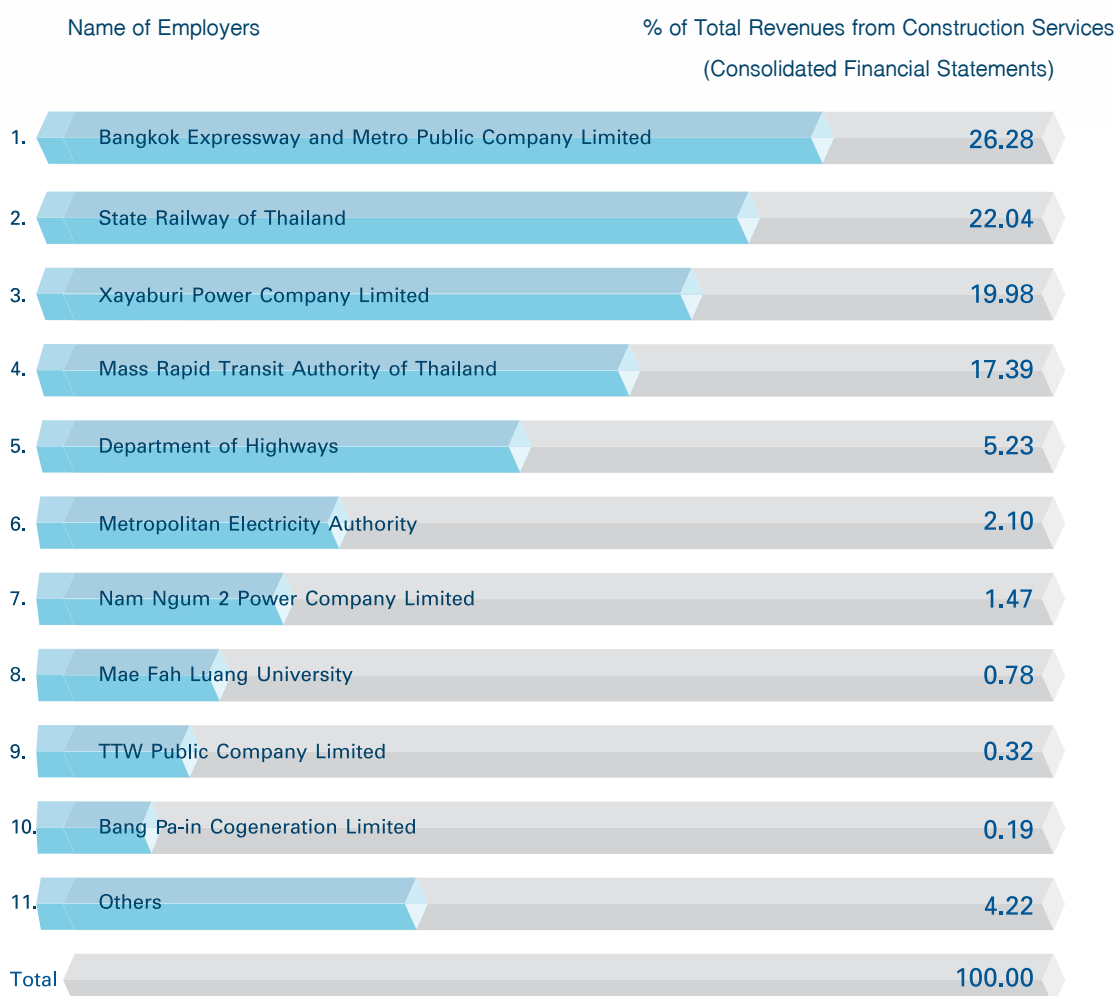
| Joint Venture/Company Name           | Shareholding Ratio                                       | Nature of Work  |
|--------------------------------------|--|---|
| 7. CK Power Public Company Limited   | 27.22%   | Holding Company by holding shares in other companies engaging in electricity production and distribution businesses   |
| 8. Bang Pa-in Cogeneration Limited   | 65.00% of shares held by CK Power Public Company Limited | Construction and Management of Two Cogeneration Power Projects for Production of Electricity and Steam, namely, BIC 1 with the production capacity of 117.5 MW for electricity and that of 20 tons per hour for steam; and BIC 2 with the production capacity of 120 MW within Bang Pa-in Industrial Estate to generate and distribute electricity to EGAT and industrial operators in Bang Pa-in Industrial Estate |
| 9. Xayaburi Power Company Limited    | 37.50% of shares held by CK Power Public Company Limited | Construction and Operation of the Xayaburi Hydroelectric Power Project  |
| 10. Nakhon Ratchasima Solar Limited  | 30.00% of shares held by CK Power Public Company Limited | Construction and Operation of the Project for Electricity Generation by Solar Energy, with a production capacity of 6 MW, to generate and distribute electricity to the Provincial Electricity Authority (PEA)  |
| 11. Chiangrai Solar Limited          | 30.00% of shares held by CK Power Public Company Limited | Construction and Operation of the Project for Electricity Generation by Solar Energy, with a production capacity of 8 MW, to generate and distribute electricity to PEA   |
| 12. Bangkhenchai Company Limited     | 99.99% of shares held by CK Power Public Company Limited | Construction and Operation of the Project for Electricity Generation by Solar Energy, with a production capacity of 8   |
| 13. SouthEast Asia Energy            | 56.00% of shares held by CK Power Public Company Limited | MW, to generate and distribute electricity to PEA   |
| 14. Nam Ngum 2 Power Company Limited | 75.00% of shares held by SouthEast Asia Energy Limited   | Investment and Development of Power Production Business in the Lao People's Democratic Republic (Lao PDR) Production and Distribution of Electricity from the Hydroelectric Power Project, as the concessionaire from the government of the Lao PDR under the concession for the Nam Ngum 2 Hydroelectric Power Project, with a production capacity of 615 MW   |

## 2.4 Characteristics of Customers

CH. Karnchang's customers in construction business can be divided into two groups, namely government agencies or state enterprises, and private sector, their respective percentages cannot be ascertained, given the fact that customers will be different in terms of periods and nature of their projects.

CH. Karnchang does not rely on any specific group of customers. However, considering the projects in the past, most of our customers are the government agencies and state enterprises in the country.

### Top 10 Major Customers as at December 31, 2018

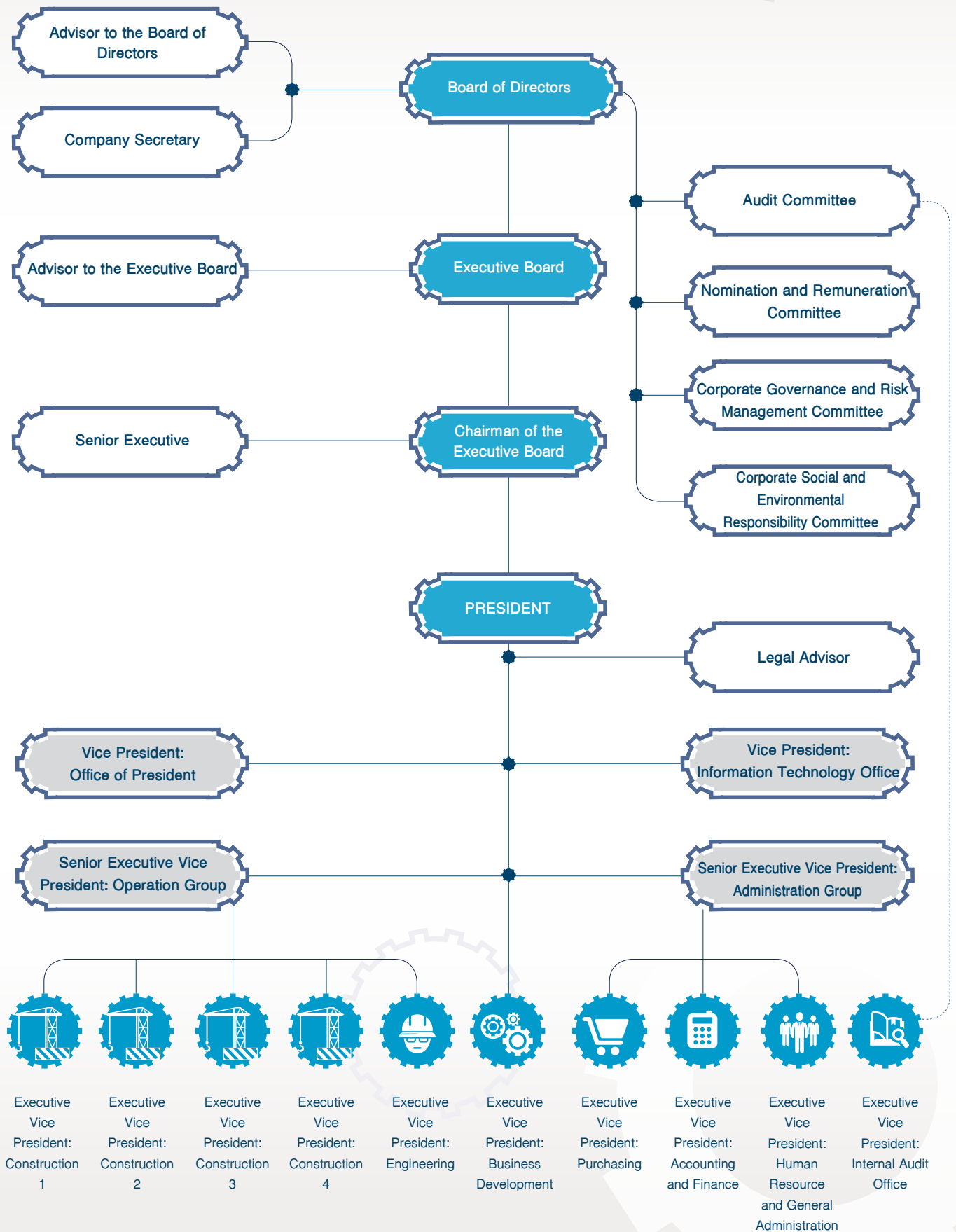


With respect to concession business, customer groups depend on concession category, per the table as follows:

| Company  | Customer   |
|--|--|
| TTW Public Company Limited<br>Pathum Thani Water Co., Ltd. | Provincial Waterworks Authority  |
| Bangkok Expressway and Metro<br>Public Company Limited     | The public using the services  |
| CK Power Public Company Limited                            | Electricity Generating Authority of Thailand<br>Provincial Electricity Authority<br>Bang Pa-in Industrial Estate |

# The Company's Management Structure as

at December 31, 2018



## 2.6 The Company's Overall Operational Policy

To ensure the accomplishment of the Company's operations for the utmost benefits of all stakeholders, the Company has thus adopted the operational policies subject to the principles as follows: Company has thus adopted the operational policies subject to the principles as follows:

### Vision

To be the leader in construction business and the pre-eminent and comprehensive basic infrastructure developer in the region.

### Missions

Deliver quality work for our customers while committed to creating work that contributes to the society and country with good returns to our shareholders and providing fair treatment to all our stakeholders

Manage our business with professionalism and in accordance with the guidelines of good Corporate Governance

Be responsible to the community, society and the country

Develop human capital and organization on a continuous and consistent basis

### Corporate (Q-C-I-S-T)

Q

Quality of Services

C

Customer Satisfaction

I

Integrity

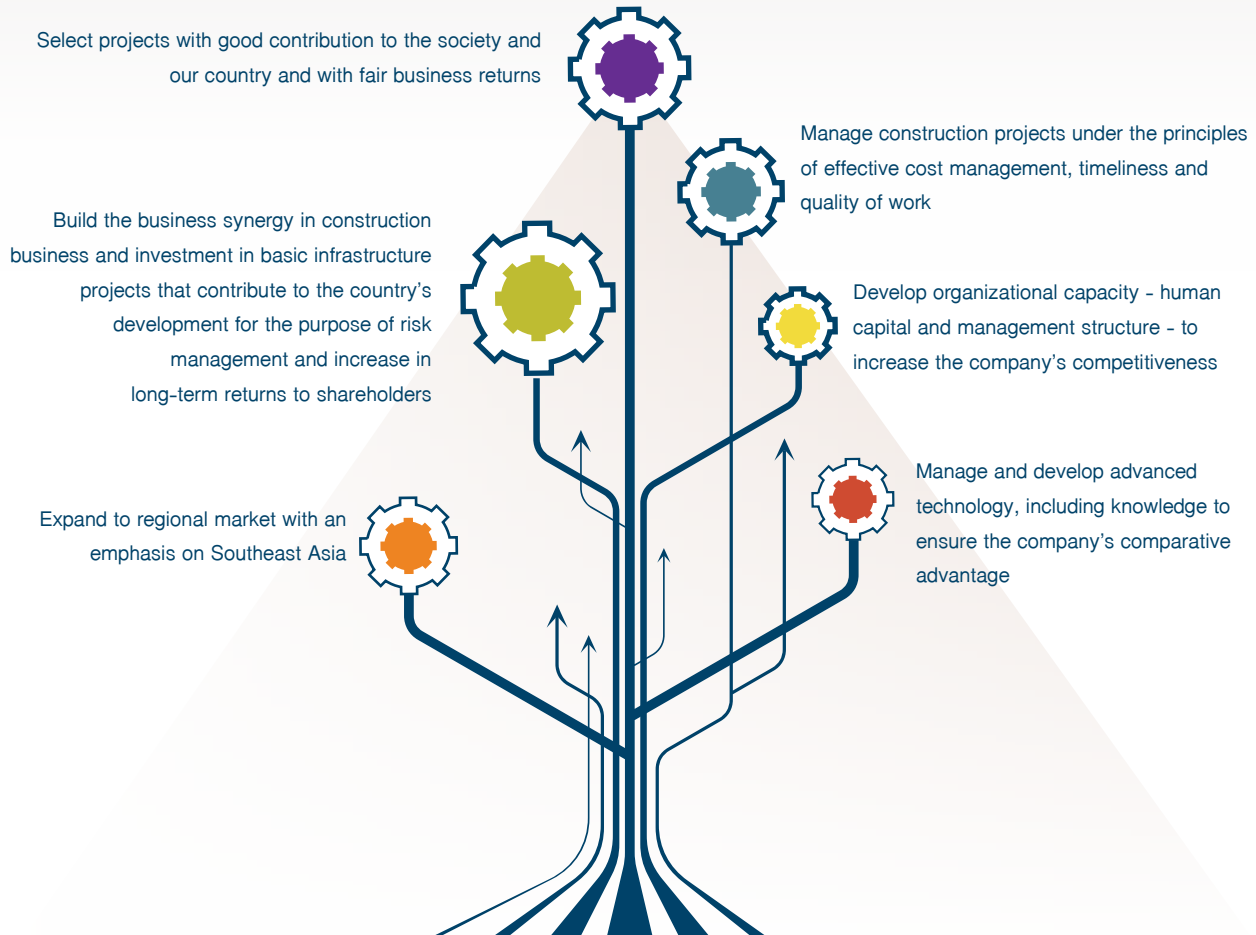
S

Social and Environmental Responsibilities

T

Teamwork

## Strategies: Sustainable Growth



To ensure the Company's business operations in compliance with the policies, the Company has complied with the strategies and action plans in 2018 as follows:

1. The Company carried out construction and performed various related works, with progress according to schedule;
2. The Company followed the procedures under every project agreement;
3. The Company conducted feasibility studies and made preparations for investments in various projects;
4. The Company maintained its liquidity and efficiently managed short-term and long-term investments to generate more revenues, as well as used various financial instruments for risk management, including reduction of finance cost;
5. The Company maintained an efficient, transparent, and auditable management system subject to the good corporate governance principles, including the Quality Management System (ISO 9001), and developed the information system with updated technology to enhance performance with updated technology to enhance performance.



## 3. About This Report

### 3.1 Scope of Report

This Sustainable Development Report is aimed to state the intention to operate business for a sustainable growth of CH. Karnchang Public Company Limited or CH. Karnchang, covering the development under the sustainable development framework, comprising three core indicators, namely, the economy, society and environment.

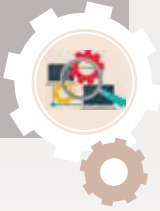
The year 2018 is deemed the 6th year that the Company has prepared and publicized the Sustainability Development Report for the purpose to express determination in disclosure of significant information in regard to sustainable development of the corporation. Information is compiled by the working group or responsible persons from divisions to ensure clear and correct information, then sent to the Head Office for processing and preparation as a report. The Report discloses operational results from 1 January 2018 to 31 December 2018 to stakeholders with validity and transparency. The preparation is made in accordance with the reporting guideline of the Organization for Cooperation on International Reporting on Standard Sustainability (Global Reporting Initiative: GRI Standard (Volume 4), Core Level.

On a yearly basis, CH. Karnchang plans to prepare the Report as well as to continuously develop the system and

method for compiling the information so as to acquire clear guidance and information of which the information is at utmost completion. Also, the importance of the Sustainable Development Goals under the United Nations' Framework (SDGs) is recognized; primary alignment of the corporate operations is considered against the Goals. This is for the purpose to adopt SDGs into the corporate continuous development as well as to establish the same as the guideline for setting the corporate strategy. Alignment to SDGs is also presented in this Report.

Scope of the Report is considered from business relationships, information readiness and impact to the operations under the core business, namely, the construction business, with coverage of specific businesses of CH. Karnchang Public Company Limited, V.R.T. (51) Company Limited as well as the information on community relations from the Project of Double-Track Railway System for Transportation and Logistics Management (Urgent Phase: Thanon Chira Junction - Khon Kaen Section) and Project of MRT Orange Line, Thailand Cultural Center - Minburi Section. Disclosure of the stated information of this Report is not that of all construction projects since the information of all construction projects could not be compiled and some construction projects were already completed during the year 2018. However, CH. Karnchang intends to compile the complete information of all construction projects to report to stakeholders subsequently.





## 4. Corporate Governance

The Board of Directors adopts the good corporate governance principles of the Stock Exchange of Thailand (SET) and practices of the Securities and Exchange Commission (SEC) and the Capital Market Supervisory Board as guidelines for the corporate governance to ensure a sustainable development.

### 4.1 Management Structure

As at December 31, 2018. The Board of Directors consists of 10 qualified members, with useful skills, knowledge and experience to efficiently perform their duties, comprising: six executive directors, four independent directors, and four non-executive directors, constituting a counterbalance from non-executive directors. The Company has four independent directors, which represents more than one-third of the total number of directors. The Chairman of the Board of Directors is an independent director by the definition of the Stock Exchange of Thailand and has no relationship with management and is not the Chief Executive Officer, so as to separate the policy-making and supervisory duty from the regular managerial duty. The Board of Directors clearly determines power and duties of the Chairman of the Board of Directors and the Chief Executive Officer. The Chairman of the Board of Directors is an independent director by the definition of the Stock Exchange of Thailand and has no relationship with management.

The Company determines qualifications of “independent directors” stricter than the minimum requirements of the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand.

The Board of Directors establishes the policy on limitation to the number of listed companies in which each director will hold office as director which shall not exceed five companies, without any exemption, since, after considering the matter, it is deemed that such number enables all directors to devote their time to regularly attend meetings. In this regard, the Board of Directors has not established the policy on limitation to the number of term of office as director since directors have a good understanding

of the Company’s business and provide suggestions which are useful for both the Company and shareholders. Furthermore, the Board of Directors also appoints the Company Secretary in accordance with the guidelines for the good corporate governance principles to provide suggestions relating to various laws and regulations as required by the Board of Directors and to supervise activities of the Board of Directors as well as coordinating to ensure compliance with the Board of Directors’ resolutions.

The Board of Directors establishes the policy on holding of office as director in other companies by the Chief Executive Officer, whereby the Board of Directors’ meetings shall be notified of reasons and details of companies in which he/she holds such office, which shall not exceed five listed companies. In this regard, authority and responsibilities of each subcommittee and remuneration for directors are shown in the Annual Report 2018.

### 4.2 Sustainable Development Policy

CH. Karnchang and all members of the Board of Directors have been complying with the good corporate governance principles, by realizing the significance of and responsibilities towards all shareholders and stakeholders of the Company. To reinforce the confidence of shareholders, investors and all related parties, the good corporate governance policy and other policies are reviewed at least once a year. Moreover, various working groups are appointed, such as, risk management working group, to assess risks in various issues on a quarterly basis. CH. Karnchang also foresees the significance of activities to build up good relationships and participation between management and staff, e.g., 5S, with a 5S Promotion Committee as the main working group; or corporate social responsibility activities which is under the responsibility of the CSR Working Group, etc. Each working group comprises representatives from all work units who will efficiently and clearly communicate and coordinate with each other via written circulars issued by the responsible work units.

#### 4.2.1 Corporate Governance Policy

##### 1. Shareholders' Rights

CH. Karnchang promotes shareholders to exercise their basic rights and taking care of shareholders better than their rights as specified by law without any actions in violation of or depriving shareholders of their rights.

##### 2. Equitable Treatment of Shareholders

CH. Karnchang monitors to ensure that all shareholders are equally treated and protected in respect of their basic rights, and implements measures to prevent inside

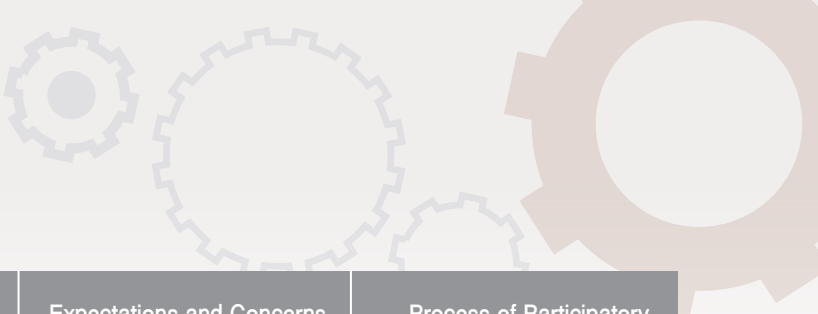
information usage for personal gain or others, which would cause damage to shareholders as a whole.

##### 3. Role of Stakeholders

CH. Karnchang realizes the significance of rights of all stakeholders, in respect of their legal or contractual rights, and acknowledges that the relationships and collaboration with stakeholders will be a factor in support of CH. Karnchang's sustainable growth. In 2018, CH. Karnchang promotes participation and treatment of our stakeholders as follows:

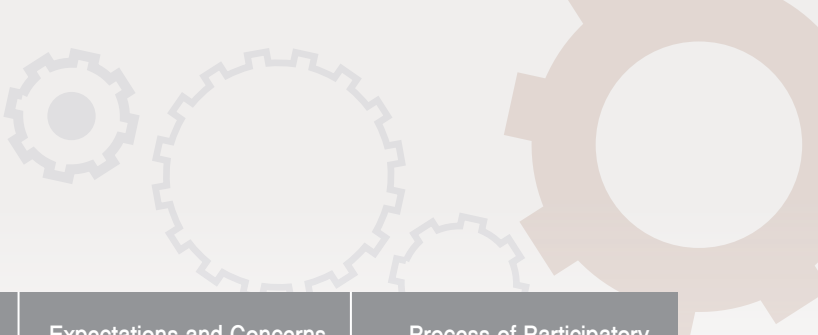
#### Stakeholder's Participation

| Stakeholders                         | Examples of Stakeholders                   | Treatment of Stakeholders   | Expectations and Concerns of Stakeholders  | Process of Participatory Communication and Frequency   |
|--------------------------------------|--|---|--|--|
| Shareholders and Investors/ Analysts | Major shareholders/ Minor shareholders     | 1. Complying with various laws, rules and regulations to ensure treatment of shareholders in accordance with the good corporate governance principles.<br>2. Providing accurate and complete information to analysts and investors. | 1. Rights and benefits under laws, e.g., dividend.<br>2. Compliance with laws with transparency and auditability.<br>3. The Company's results of operations and financial position are stable and achieve the set goals. | 1. Reports: <ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Annual Registration Statement (Form 56-1),</li> <li>• Good Corporate Governance Policy,</li> <li>• Summary of quarterly performance from Investor Relations, 4 times</li> </ul>  |
|                                      | Analysts Institutional Investors and Funds | Providing information to analysts, investors, funds and institutional investors with efficiency, rapidity, accuracy and punctuality.  | 1. Clear, pertinent accurate information disclosure.<br>2. Rapid and equal access to information.  | 1. Reports: <ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Annual Registration Statement (Form 56-1),</li> <li>• Good Corporate Governance Policy,</li> <li>• Summary of quarterly performance from Investor Relations, 4 times</li> </ul> 2. Meetings: <ul style="list-style-type: none"> <li>• 3 Analyst Meetings</li> <li>• Company Visit</li> </ul> |




| Stakeholders | Examples of Stakeholders              | Treatment of Stakeholders  | Expectations and Concerns of Stakeholders   | Process of Participatory Communication and Frequency   |
|--------------|---------------------------------------|--|---|--|
|              |                                       |  |   | 3. Activities: <ul style="list-style-type: none"> <li>• Local and overseas road shows</li> </ul> 4. Communication Channels: <ul style="list-style-type: none"> <li>• Telephone</li> <li>• Website</li> </ul> |
| Staff        | Monthly and daily staff               | 1. Complying with labor laws, taking into account human rights and demand of staff.<br>2. Providing fair returns.<br>3. Arranging for whistle-blowing channels for staff in case of unfair treatment.<br>4. Giving priority to competency development.<br>5. Providing explanation on understanding and application of work rules and regulations. | 1. Payment of appropriate remuneration and welfares.<br>2. Continued promotion of career path.<br>3. Work security.   | 1. Reports: <ul style="list-style-type: none"> <li>• Annual Report, 1 times</li> </ul>   |
|              | Management and the Board of Directors | 1. Setting out policies to ensure the utmost benefits of CH. Karnchang, including other stakeholders.  | Monitoring and managing the operations of CH. Karnchang to ensure compliance with resolutions and specified policies.   | 1. Reports: <ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Annual Registration Statement (Form 56-1),</li> <li>• Good Corporate Governance Policy</li> </ul>                              |
| Customers    | Project Owners                        | 1. Complying with regulations and terms of reference of bidding and contracts.<br>2. Delivering quality projects which meet standards and terms of reference.  | 1. Successful implementation of projects.<br>2. Completeness of technical details and construction costs in respective types of works.<br>3. Timely completion according to plan without delay. | 1. Reports: <ul style="list-style-type: none"> <li>• Documents/evidence per terms of reference</li> <li>• Satisfaction questionnaires</li> </ul>   |

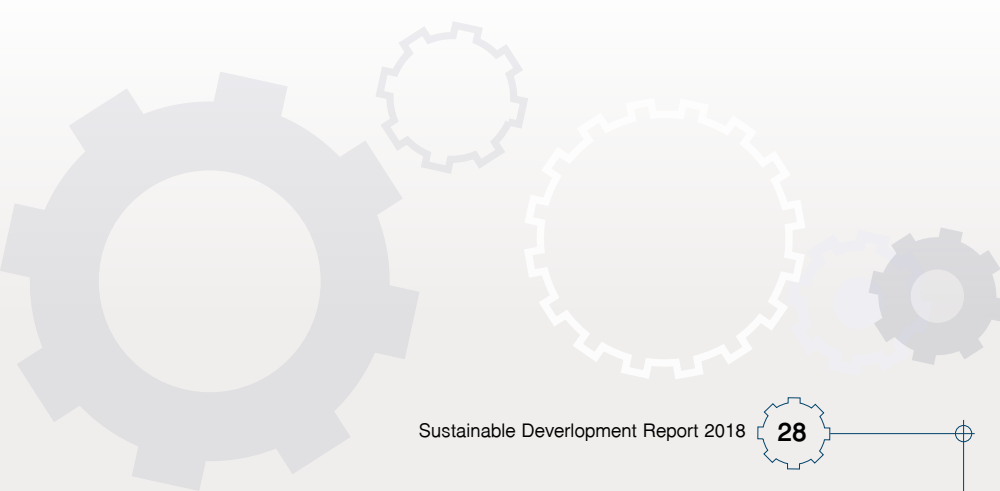
| Stakeholders | Examples of Stakeholders        | Treatment of Stakeholders   | Expectations and Concerns of Stakeholders  | Process of Participatory Communication and Frequency   |
|--------------|---------------------------------|---|--|--|
|              |                                 | 3. Keeping project owners' information confidential.<br>4. Providing project warranty for the period as specified in construction contracts.<br>5. Preparing questionnaires as to satisfaction of project owners. | 4. Quality of works meets project owners' requirements.  |  |
| Customer     | Design and Consulting Companies | Complying with layout design and terms of reference of bidding.   | 1. Details of layout design and terms of reference as proposed are complete and clear, with reasonable price.<br>2. Construction technique is accurate and complete according to layout design, terms of reference and engineering practices.<br>3. Quality Assurance (QA) and Quality Control (QC) systems with efficiency.<br>4. Monitoring and managing safety and occupational health during performance of works, with measures to control environmental impact.<br>5. Personnel with efficiency and adequacy for performance of works.<br>6. Tools, machinery and equipment with efficiency adequacy for performance of works.<br>7. Having competency and experience to work. | 1. Report: <ul style="list-style-type: none"> <li>Submission of documents/evidence per terms of reference</li> </ul> |



| Stakeholders | Examples of Stakeholders                   | Treatment of Stakeholders  | Expectations and Concerns of Stakeholders  | Process of Participatory Communication and Frequency   |
|--------------|--|--|--|--|
| Traders      | Suppliers<br>Subcontractors                | <ol style="list-style-type: none"> <li>1. Treating all traders equally and fairly, in their capacity as the Company's business partners.</li> <li>2. Setting out bidding standards with transparency and auditability.</li> <li>3. Obtaining quality goods and services from traders.</li> </ol> | <ol style="list-style-type: none"> <li>1. Timely delivery of complete goods under contracts.</li> <li>2. Quality goods and services.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Reports: <ul style="list-style-type: none"> <li>• Purchase/Work Orders</li> <li>• Contracts</li> </ul> </li> <li>2. Meeting: <ul style="list-style-type: none"> <li>• Meeting with contractors and shops</li> </ul> </li> <li>3. Communication Channels: <ul style="list-style-type: none"> <li>• Telephone</li> <li>• Email</li> </ul> </li> </ol>  |
| Press        | Newspapers<br>Websites                     | Communications of information with efficiency, rapidity, accuracy and punctuality  | <ol style="list-style-type: none"> <li>1. Clear, pertinent and accurate information disclosure.</li> <li>2. Rapid and equal access to information.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Reports: <ul style="list-style-type: none"> <li>• Dissemination of information and news of the organization via press releases and news articles, 20 times a year</li> </ul> </li> <li>2. Meetings: <ul style="list-style-type: none"> <li>• Interview and meeting with the management to share opinions, 5 times</li> </ul> </li> <li>3. Communication Channels: <ul style="list-style-type: none"> <li>• Email</li> <li>• Telephone</li> </ul> </li> </ol> |
| Public       | Public using vehicles and roads            | Establishing measures to check tools and machinery, including potential impact on the public.  | <ol style="list-style-type: none"> <li>1. Accidents from utilization of machinery and transportation of large-sized equipment.</li> <li>2. Air emission and noise pollution.</li> </ol>                                      | <ol style="list-style-type: none"> <li>1. Meeting: <ul style="list-style-type: none"> <li>• Monthly meeting via supervisors</li> </ul> </li> </ol>   |
| Communities  | Communities adjacent to construction sites | <ol style="list-style-type: none"> <li>1. Meeting with local people in communities to monitor and make inquiries about impact from construction.</li> <li>2. Making inquiries about demand of local people</li> </ol>  | <ol style="list-style-type: none"> <li>1. Potential impact on communities in respect of pollution, e.g., air, dust, noise, and water.</li> <li>2. Impact upon the quality of life of local people in communities.</li> </ol> | <ol style="list-style-type: none"> <li>1. Reports: <ul style="list-style-type: none"> <li>• Monthly environmental impact assessment report by consulting companies</li> </ul> </li> <li>2. Meetings: <ul style="list-style-type: none"> <li>• Monthly meeting with communities (representatives)</li> </ul> </li> </ol>  |



| Stakeholders | Examples of Stakeholders | Treatment of Stakeholders   | Expectations and Concerns of Stakeholders  | Process of Participatory Communication and Frequency   |
|--------------|--------------------------|---|--|--|
|              |                          | <p>in the communities.</p> <p>3. Jointly determining common practices and supporting activities.</p> <p>4. Providing protection and ensuring proper understanding with communities, and improving the quality of life of local people in communities.</p> <p>5. Organizing community relations activities for skill development of local people in communities.</p> |  | <p>3. Activities:</p> <ul style="list-style-type: none"> <li>• Staff for community relations meeting</li> </ul> <p>4. Communication Channels:</p> <ul style="list-style-type: none"> <li>• Facebook</li> <li>• Telephone</li> <li>• Project website</li> </ul> |
| Competitors  |                          | <p>1. Competing with competitors under applicable rules and laws.</p> <p>2. Operating business based on fairness, transparency and auditability.</p> <p>3. Refraining from infringe intellectual property and copyright.</p>  | <p>1. Refrain from discrediting any competitors' reputation.</p> <p>2. Refraining from access to any competitors' confidential information through any dishonest and illegal means.</p> <p>3. Properly treating competitors based on legal ethics.</p> |  |



#### 4. Disclosure and Transparency

All activities are undertaken with transparency, open for inspection, and sufficient disclosure to all stakeholders as well as monitoring disclosure of material information, both financial and non-financial, through easy access with equality, accuracy, timeliness, transparency and reliability.

#### 5. The Board of Directors' Responsibilities

The Board of Directors performs duties with honesty and due care to the best interests of CH. Karnchang and in fairness to all stakeholders under the good internal control system and appropriate risk management, including compliance with the code of ethics.

##### 4.2.2 Environmental Policy

The Board of Directors has set out a policy to operate the business by taking into account the environment, with a commitment to compliance with applicable laws, regulations, standards and requirements, including strict adherence to the government's environmental policies, together with its readiness to continuously and seriously carry out the development of the environmental management procedures within the organization to ensure the cost-efficient resources utilization and minimize waste with the environmental impact from the organization's activities, including provision of knowledge and training regarding environment to staff and participation in support of activities related to community development to ensure the continuity of environmental activities and reflect the business sustainability;

The Company has developed and improved the environmental management system in all activities of the Company to continuously minimize pollution and impact on the environment, with clear objectives, goals, action plans and evaluation;

The Company has promoted the environment preservation, as well as publicizing the information and news, and cooperated with the staff, customers, government agencies and private entities, including the public, as a gesture of the Company's image and awareness of the environmental management;

The Company has rapidly and efficiently responded to any events giving rise to impact on the environment and communities caused by the Company's operation;

The Company has raised the consciousness and responsibility of staff in relation to environment under the environment management system as well as campaigning conservation and consumption of energy and resources with efficiency through training and public relations media, such as, internal newsletters, notice board, internal circular letters, in order to regularly keep them well informed on knowledge and skills on environment;

The Company has presented the results of performance in compliance with the policy and action plans in respect of the social responsibility by reporting directly to the Board of Directors and disseminating the social and environmental activities to the Company's staff, shareholders, and persons related to the Company, as well as publicizing such information via website and Annual Report of the Company.

##### 4.2.3 Human Rights Policy

To show respect for human rights which are the foundation of personnel care and development, the Board of Directors has set out a human rights policy which will play a significant role in building CH. Karnchang's quality and achievements as a whole. In this regard, CH. Karnchang is committed to our staff care as follows:

1. In terms of remuneration and welfare, other than the fundamental welfares as required by laws, CH. Karnchang provides appropriate remuneration and welfares to our staff which are always reviewed to be competitive with market condition;
2. In terms of personnel development, CH. Karnchang has set out a personnel development policy by ensuring satisfaction of remuneration and working environment through staff competency development in response to requirements of each work unit for the purpose of the organization's competitiveness.

##### 4.2.4 Non-Infringement of Intellectual Property or Copyright Policy and Practices

To prevent any problems which may damage or discredit the Company's reputation, the Board of Directors has set out a policy to prohibit management and staff from using any illegal software and copying any copyrighted software for any reason whatsoever without permission from software owners.



#### 4.2.5 Anti-Corruption and Bribery Policy

The Company determines an anti-corruption and bribery policy to prohibit any bribe payment for the Company's business interest or granting of any items or any other benefits to any persons having a duty or business related to the organization for the Company's business interest. It is clearly set out as a guideline to prevent any problems due to corruption and unfairness in the business operation, such as, compliance with prohibitions, action plans or internal control measures, morality, and work supervision, as a duty of staff at all levels in the Company, as well as monitoring code of ethics, morality and action plans or measures in work supervision relating to anti-corruption and bribery, including authority and duty to report on various matters directly to the Company's independent unit for inspection and monitoring. Moreover, the Company has adopted the corruption risk assessment process and the practices relating to supervision and control for prevention and monitoring of corruption risks, including guidelines for following up and evaluation of performance in compliance with the anti-corruption policy, by providing staff training to ensure their knowledge relating to the anti-corruption policy and practices at least once a year.

#### 4.2.6 Risk Management Policy

1. The Board of Directors, all executives, staff and units own the risks and have the duties to be responsible for, assess, follow up, and support the risk management process with efficiency.
2. All units of the Company shall have a risk management process, as well as having a systematic and continuous assessment and follow-up, subject to regular review at least once a year in line with business changes.
3. The risk assessment shall form an integral part of the annual work plan of all units, by considering all risks of the entire organization, taking into account such risk factors, both inside and outside the organization, including proper risk management.
4. The Corporate Governance and Risk Management Committee has the duties to assess the risk management and propose its opinion to the Board of Directors.
5. The organization culture will focus on common understanding and awareness of risks. The body of knowledge shall be established for staff at all


levels to have access for study and research and sharing of experiences, which would pave the way for development and improvement of the risk management process to become an efficient mechanism in the strategic administration.

Moreover, CH. Karnchang schedules to regularly review such policies. In this regard, if the practices in the code of conduct do not cover any aspects of CH. Karnchang's business operations, such practices will be promptly revised and updated as appropriate. Top and middle level management are encouraged to regularly attend training courses relating to corporate governance in order to enhance their knowledge, understanding, vision and positive attitude towards management in accordance with the good corporate governance principles to ensure their leadership and succession in management.

#### 5. Legal Disputes

The Company or the subsidiaries have no legal disputes, to which the Company or the subsidiaries are a party or respondent, and which would give rise to negative impact on the assets of the Company or of the subsidiaries by more than 5 percent of the shareholders' equity as at the most recent accounting year end, and there is no lawsuit which would significantly affect the Company's business operations. In addition, the Company has no material lawsuit which is not resulted from the Company's ordinary course of business.

In 2000, Joint Venture BBCD claimed the increased costs from the Expressway Authority of Thailand (the employer), whereby the employer's consulting engineer considered the Joint Venture's claim and issued a letter confirming and accepting the certification of such increased costs. The Arbitral Tribunal then issued its arbitral award requiring the employer to pay the increased costs, together with interest, to the Joint Venture. Subsequently, the employer issued a letter notifying the Joint Venture that the employer had considered the matter and deemed it appropriate to comply with such arbitral award. On this ground, the Joint Venture recorded such amount as its assets and revenue in the financial statements for 2001 in proportion to the Company group's participation in the Joint Venture, representing approximately Baht 2,500 Million.



Due to the delay in payment of such costs, the Joint Venture filed a lawsuit against the employer with the Civil Court to enforce compliance with the said arbitral award. On December 30, 2003, the Civil Court adjudged enforcing compliance with the arbitral award, by requiring the Expressway Authority of Thailand (the employer) to make such payment to the Joint Venture in accordance with the arbitral award. Later in January 2004, the employer filed an appeal with the Supreme Court.

On February 15, 2007, the Supreme Court adjudicated reversing the Civil Court's judgment which enforced the arbitral award requiring the employer to make such payment to Joint Venture BBCD. The Joint Venture therefore recorded an allowance for doubtful accounts in full for accounts receivable for - claims for additional costs as expenses in profit or loss for 2006 in proportion to the Company group's participation in the Joint Venture, representing approximately Baht 2,500 Million.

Subsequently, after the thorough study of the details of the judgment of the Supreme Court, the Company's management filed a lawsuit against the employer with the Civil Court on February 11, 2008 to claim the costs paid by Joint Venture BBCD from the employer on charge of undue enrichment, bringing the costs included interest calculated until the date of the plaint to approximately Baht 3,400 Million (in proportion to the Company group's participation in the Joint Venture).

On September 15, 2011, the Civil Court adjudged requiring the employer to make payment to Joint Venture BBCD in the amount of Baht 1,750 Million (in proportion to the Company group's participation in the Joint Venture), together with interest at the rate of 7.5 percent per annum from such principal from February 15, 2007 until the employer would make such payment to Joint Venture BBCD in full. The employer and Joint Venture BBCD filed their appeals with the Appeal Court.

On December 27, 2013, the Appeal Court adjudicated reversing the Civil Court's judgment, thereby dismissing Joint Venture BBCD's plaint on the grounds that at the time when the Plaintiff and the Defendant executed the turnkey contract in dispute, both parties were well aware that the Defendant was not yet ready to deliver the construction site under the contract to the Plaintiff, and

as a result, several problems subsequently arose after the date of execution of the contract, which were raised by the Plaintiff to request an extension of time for the construction period and claim the increased costs. Therefore, it must be deemed that the Plaintiff executed the turnkey contract in dispute with the Defendant whereby the Plaintiff agreed to accept potential risks relating to burden of additional costs for design and construction of the expressway project, and as such, the Plaintiff may not demand the Defendant to return the expressway project to the Plaintiff under Section 411 of the Civil and Commercial Code despite the fact that the Defendant had accepted the delivery of the project from the Plaintiff before the Supreme Court rendered the judgment, in which case, it was deemed that the Defendant had accepted the project in good faith. Furthermore, as the Supreme Court did not adjudge that the turnkey contract in dispute was null and void, but only refused to enforce compliance with the arbitral award, and the Court of First Instance did not have jurisdiction over such issue, it was then no longer required to decide on other issues in the Defendant's appeal, particularly the issues as to whether or not the Plaintiff had power to file its plaint; the Plaintiff's plaint was barred by prescription; and the Plaintiff's plaint was repeated, since the Appeal Court's judgment would not change. Thus, the Defendant was not required to return the expressway project to the Plaintiff on charge of undue enrichment nor pay additional costs, together with interest, nor deliver any interest from toll revenue to the Plaintiff under the plaint. Therefore, the Court of First Instance's judgment was opposed to the Appeal Court's opinion.

Subsequently, in February 2014, Joint Venture BBCD filed an appeal with the Supreme Court to demand the employer to pay all increased costs, together with interest, until the payment would be made in full.

On June 22, 2017, the Supreme Court adjudicated dismissing Joint Venture BBCD's plaint under the Appeal Court. Currently, the Company is studying to find out guidelines and legal issues for further litigating the case. For that reason, the Company has had the legal advisor study various guidelines for proceeding with such case for submission to the management for consideration in the near future.



## 5. RISKS OF THE ORGANIZATION

### 5.1 Economic Risk

This section is described in Annual Report 2018.

### 5.2 Social Risk

Risk regarding Fair Treatment of Labor

CH. Karnchang realizes that human resources represent the key factor in our business operations and are essentially instrumental in developing the organization. Therefore, in order to protect such valuable resources and to prevent various potential risks, CH. Karnchang has given high priority to fair treatment of labor by means of respect for their basic rights to work under the human right declaration, social protection, protection in terms of working conditions, including health and safety. The main issues adopted by the Company to prevent such risks are as follows:

#### Employment

CH. Karnchang strictly implements the policies and practices on employment as required by the labor protection law, namely, CH. Karnchang has no policy to employ child labor aged below 18 years, and prevent employment discrimination by ensuring equal treatment as to gender, nationality, religion, race and educational institution, to minimize risks of violation of labor and human rights.

#### Rights and Participation of Staff

CH. Karnchang realizes the significance of staff's basic rights in all respects by encouraging staff's participation in negotiations between each other and providing opportunities for staff to freely express their opinions in order to prevent potential risks of conflicts between staff and the organization, which may have affect the operations and business as a whole.





### Training and Provision of Knowledge

CH. Karnchang sets out guidelines for development of skills and training for staff's career advancement on an equitable basis without discrimination. The development of staff's competency is recognized as an essential factor for business growth in response to competition in construction industry.

CH. Karnchang prepares an annual plan for a variety of training programs, both internal and external, which are organized in response to questionnaires and surveys on interesting areas of training from staff in all work units.

### Health and Safety

By nature of business, CH. Karnchang is required to comply with laws, requirements and rules relating to work safety.

CH. Karnchang thus regards staff's health and work safety as our priority, by promoting safety awareness of staff at all levels. For instance, at each site, staff will be provided with construction safety handbook, along with safety officer's close monitoring in order to prevent potential risk factors during accidents and work performance.

### Welfares

The Company is well aware that caring and respect for staff's personal life, including their families, to ensure a work-life balance, is considered a key factor to retain staff with the Company.

## 5.3 Environmental Risk

CH. Karnchang recognizes that the business operations under the corporate social and environmental responsibility is an important factor for the organization's steady and sustainable growth. The Company therefore selects such projects which are beneficial to the country and society as a whole, with the least possible environment impact in compliance with the Green Construction, and ensures proper understanding and acceptance of CH. Karnchang's operations from communities and society, on the concept that business is not sustainable without social and environmental responsibility.

The compliance with criteria, requirements and appropriate measures on safety, occupational health and environment, including effective utilization of natural resources and construction materials to ensure the optimum efficiency, will help minimize environment impact from construction projects, and environmental risk. As such, the Company makes its best efforts to raise our staff's environmental awareness through the working processes and CSR activities.



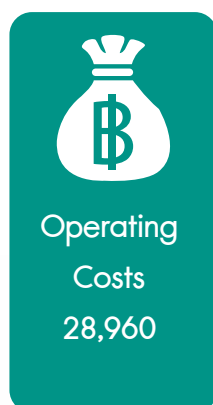
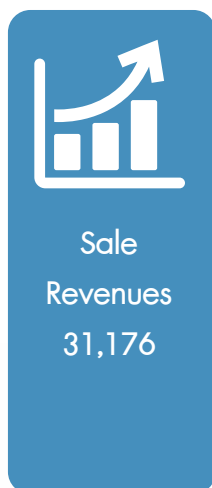


## 6. ECONOMIC PERFORMANCE

(Unit : Million Baht)

| Description                   | 2013   | 2014   | 2015   | 2016   | 2017   |
|-------------------------------|--------|--------|--------|--------|--------|
| Sale Revenues <sup>/1</sup>   | 42,010 | 35,443 | 38,028 | 47,020 | 37,731 |
| Operating Costs <sup>/2</sup> | 30,738 | 31,303 | 33,744 | 44,311 | 35,219 |
| Employee Wages and Benefits   | 3,442  | 4,008  | 4,433  | 4,088  | 3,773  |
| Payments to Government        | 801    | 420    | 607    | 448    | 369    |
| Community Investment          | 39     | 26     | 86     | 37     | 24     |

2018



Employee Wages and Benefits  
3,679



Payments to Government  
(278)\*



Community Investment  
64



Note: <sup>/1</sup> Sale Revenues including total revenues from group of companies

<sup>/2</sup> Operating Costs including revenues from Construction services, sales of construction materials and management incomes

(\*) Got Tax Refund



## 7. ECO-FRIENDLY BUSINESS OPERATIONS

Given concerns about environmental impact at present, several organizations set out policies and measures to control their business operations, taking into account more environmental responsibility. CH. Karnchang focuses on the corporate development and sustainability, in its capacity as a leading construction contractor and investor in full-scale infrastructures in Thailand. CH. Karnchang is determined to operate its business responsibly and eco-friendly with efficient management in parallel. As one of its core businesses is construction business which causes environmental impact around construction sites in respect of air quality, noise level, transportation and waste management, under the “Green Construction” concept or eco-friendly construction, which lies in the environmental management in all construction projects of CH. Karnchang.

CH. Karnchang realizes the significance of the procurement process under the quality management systems, as well as the criteria for selection of manufacturers, suppliers and contractors, and regular inspection of product quality, support for shops and traders with eco-friendly production process, including screening process for efficient contractors who perform works with environmental responsibility. In addition, CH. Karnchang strictly complies with environmental standards, rules and regulations of the public sector concerning construction. In this regard, key materials utilized in construction may be summarized as follows:

### 7.1 Procurement of Products or Services

#### Construction Materials, Products and Services

Significant construction materials and products produced in Thailand comprise cement, steel rods, structural steel, stones, sands, etc. The materials in architecture are, for example, sanitary ware, ceramic, granite, ceiling and wall, glass steel doors and windows, aluminum doors and windows, wood doors and windows, PVC and equipment, as specified in the details of the construction contract.

The Thailand Industrial Standards of the project owner shall be taken into account. The Company does not

purchase construction materials exclusively from any particular distributor since the procurement procedure requires checking of price, quality, delivery of goods and reliability at all times to ensure obtaining the best distributor, both in respect of quality, price and service. The Company shall conduct evaluation of the distributor at least twice a year. Each procurement and engagement requires approval of the project owner and supervisor. The Company is also required to execute a procurement contract to ensure the best conditions and the price can be valid until the project completion. As for the service, the Company shall be responsible for the quality of the goods and service for a period of at least two years or under a contract with the project owner.

Construction materials and products from overseas import: The Company has a policy to purchase this type of materials via a local distributor, by taking into account the after sale service and experience of an agent. In case the materials are required to be directly purchased from overseas, the Company shall open letters of credit (L/C). Such materials from overseas shall meet the standard per the requirements of the project owner, such as, ASTM, BS, JIS, API, etc. In this regard, the terms and conditions of the L/C shall be carefully specified to minimize risks.

The Company has procured products and services under the quality management system, including the criteria for selection of manufacturers, suppliers and contractors, as well as regular review and inspection of product quality based on the performance of current manufacturers, suppliers and contractors, in order to confirm and assure at all times that the products and services after delivery to project owners are correct and complete in accordance with the agreed terms and conditions.

In procuring goods, products and services for use in various construction projects, the Company has selected suppliers/contractors with potential, experience, performance and qualifications for each work and checked prices, quality and delivery of goods that meet standards

as required by owners in purchase orders for such goods, products and services.

The Company gives priority to raw materials which cause environmental impact, for example, materials made of asbestos. The Company avoids using such materials and uses other materials which cause no environmental impact instead. Moreover, the Company arranges for whistle-blowing channels relating to violation of environmental laws in order to mitigate environmental impact. In the past, the Company never receives any report or complaint relating to violation of environmental laws.

In procuring goods, products and services for construction in various projects of the Company based on categories of both domestic and overseas products, the Company has benefited from cooperation from various potential business partners which are major and retail manufacturers and suppliers of construction materials. Given the Company's improved operational results and continued business growth, the Company has more channels to procure and select goods, products and equipment in the construction from higher quality standard and qualified manufacturers and suppliers in line with the growth of the manufacturing

industry. As a result, the Company is confident in its ability to supply quality goods, products and services in accordance with the requirements and objectives of project owners.

In addition, the Company has enhanced its potentials in respect of procurement of products and services, by introducing the ERP (Enterprise Resource Planning) system since 2009, to ensure that the procurement of products and services is improved, with a more systematic control and recording process, for example, process for issuance of purchase orders and inventory management, thereby resulting in an efficient inventory management and reduction of waste materials in construction projects.

#### 7.1.1 Key Materials Utilized in Construction and Utilization

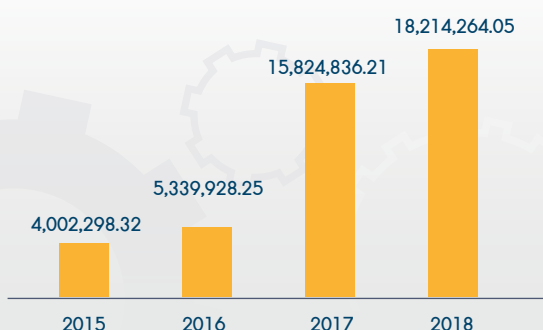
CH. Karnchang keeps records on key materials used in its business operations, such as, steel, cement and oil, to track the utilization and assess demand in the following year. CH. Karnchang will select key materials with minimum impact on the environment, taking into account optimal use of natural resources and environmental impact; while maintaining its highest construction standards and quality.

### Summary of Yearly Volume of Oil during 2015 - 2018



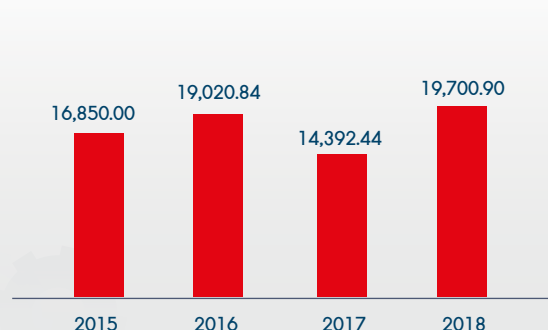
#### Diesel Oil

(Unit : Liter)



#### Benzene Oil

(Unit : Liter)



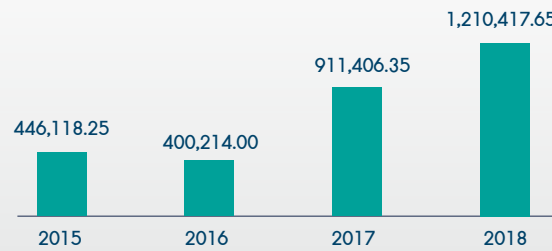


## Summary of Yearly Volume of Ready-Mixed Concrete during 2015 - 2018



### Ready-mixed concrete

(Unit : m<sup>3</sup>)

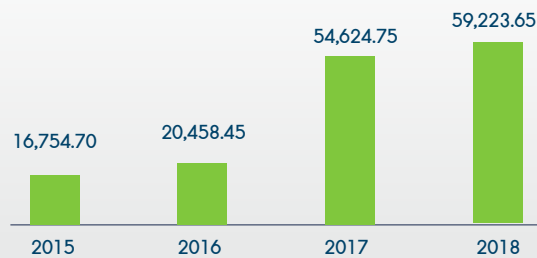


## Summary of Yearly Volume of Cement during 2015 - 2018



### Cement

(Unit : Ton)



## Summary of Yearly Volume of Steel during 2015 - 2018



### Steel

(Unit : Ton)

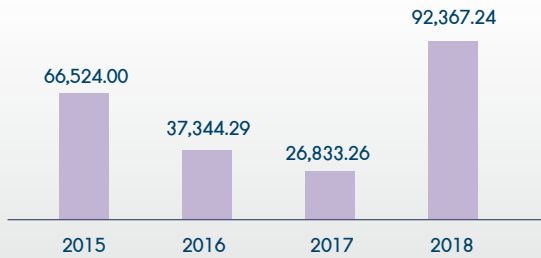


## Summary of Yearly Volume of Steel Bar during 2015 - 2018



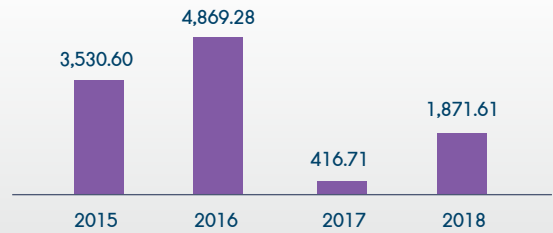
### Deformed Steel Bars

(Unit : Ton)



### Round Bars

(Unit : Ton)

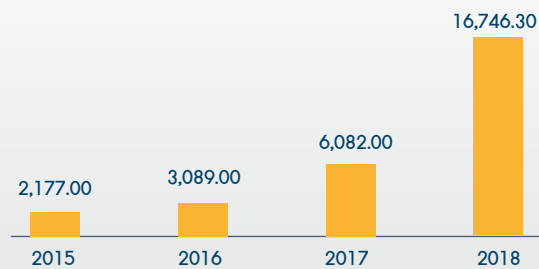


## Summary of Yearly Volume of Piles during 2015 - 2018



### Drilling Rigs and Precast Prestressed Concrete Piles

(Unit : Ton)

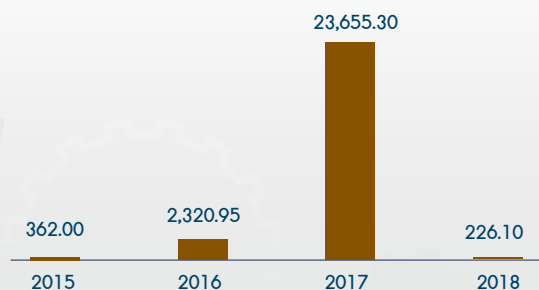


## Summary of Yearly Volume of Segment-Girder during 2015 - 2018



### Segment-Girder

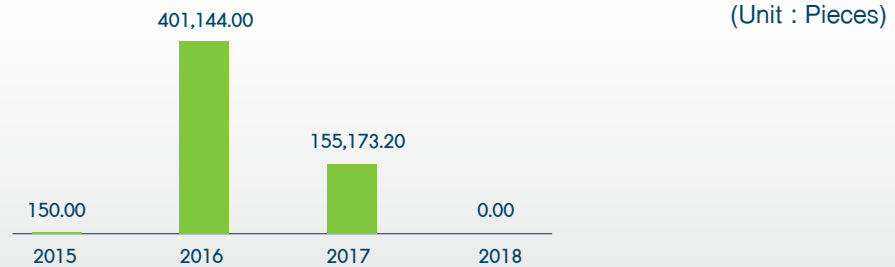
(Unit : Pieces)



## Summary of Yearly Volume of Concrete Sleeper during 2015- 2018



### Concrete Sleeper



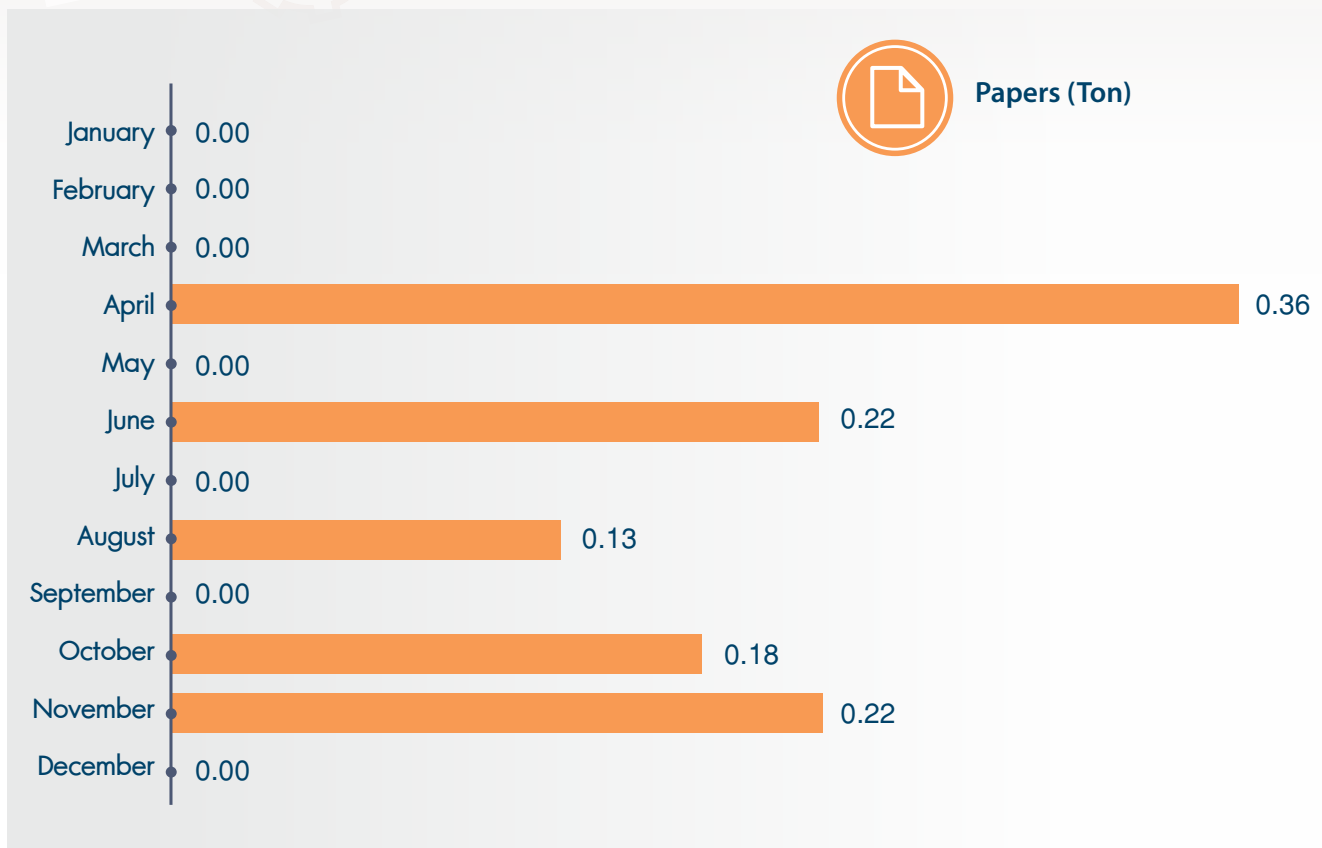
CH. Karnchang has a purchase procedure which requires entering into contract with the seller that has standardized production process and which is environmental friendly in order to encourage the manufacturer to pay attention to products that reduce the environmental impact and to be in consistence with the environmental friendly construction operation or green construction, which is the Company's core policy for construction operation.

### 7.1.2 Key Materials Utilized in Office Buildings and Utilization

At the Head Office, key materials in the operations are papers. In 2018, CH. Karnchang purchased A4 papers with a total weight of 9.59 tons, when compared to the purchased amount of the same in 2017, it was found that the purchased amount in 2018 was less. Furthermore, to reduce energy consumption, CH. Karnchang has adopted the policy to use both sides of papers or reuse, and has

been participating in the Shred 2 Share campaign with Thai British Security Printing Public Company Limited, an affiliate of Siam Cement Public Company Limited or SCG, since 2009. Thai British Security Printing Public Company Limited has an unused paper shredding process that meets international standard and then recycles them for paper box production. For every ton of collected papers, Thai British will contribute Baht 2,000 for scholarships and donation of learning materials and sports equipment for students of the Border Patrol Police School.

In 2018, CH. Karnchang continued participating in the Shred 2 Share campaign as the fifth year consecutively. A total volume of donated papers was 1.11 tons, as per the following details.



**288.54 kg.**

The use of natural resources and gas emission can be reduced as follows:



**122.08 kg.**



**55.49 m<sup>3</sup>**

## 7.2 Energy Management

At present, energy is necessary for living, People's lifestyle nowadays requires more energy consumption. Therefore, cooperation from all of us is essential to efficiently manage our energy use. In the preparation of this report in 2018, the utilization of electricity and water at the Head Office

and the Machinery Service Center is included, with energy management measures as follows;

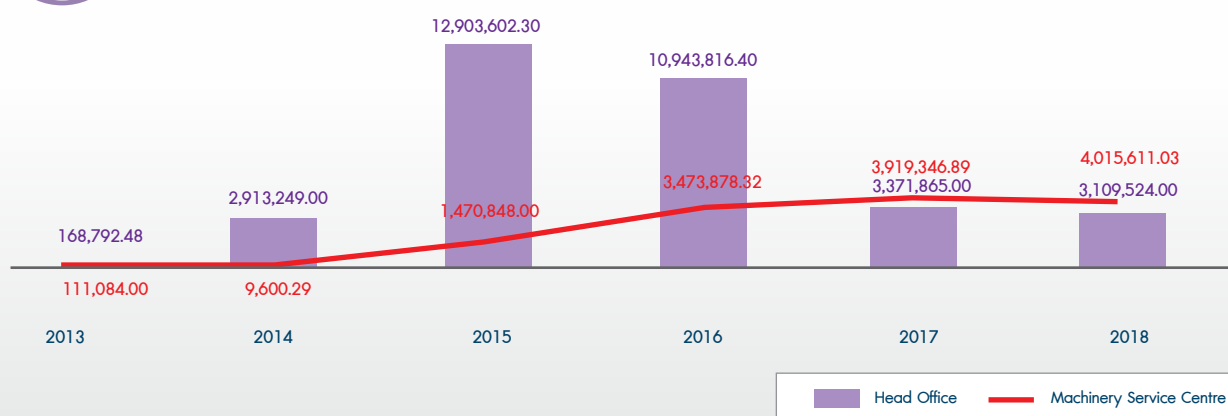
### 7.2.1 Electricity Utilization

The electricity utilization at the Head Office and the Machinery Service Centre during 2013-2018



### Electricity Utilization

(Unit : Kilo Joule)



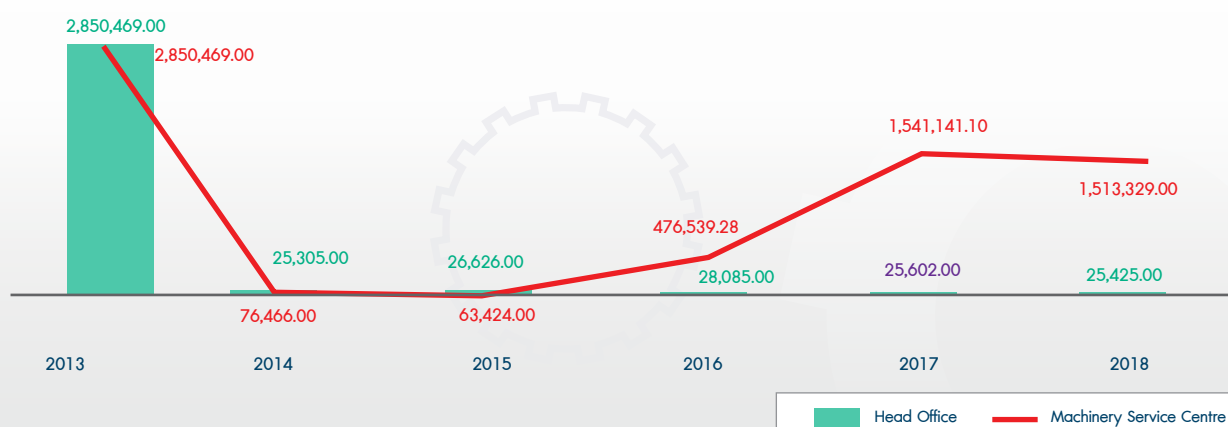
## 7.3 Water Management

The tap water utilization at the Head Office and the Machinery Service Centre during 2013-2018



### Water Utilization

Unit : Cubic Meter



## 7.4 Environmental Management in Construction Process

At all steps of construction project operation, CH. Karnchang has strictly complied with the laws on construction in order to control and mitigate the environmental impact caused by the construction. It applies modernized technology and technique of high standard and complies with the quality management standard according to the international standardized system regarding management system which will create satisfaction on the part of customers of the product or service of an organization, or ISO 9001/2008, and other related requirements and standardized international practices. It also requires the management of every project to prepare a management system and work plan with regard to safety and occupational health in workplace and monitoring plan in order to mitigate the impact to community and the environment.

It also requires its employees at all levels to have passed trainings process and have quality check system regularly, consecutively and seriously, in order to achieve safety and to assure the employees, the people and the neighboring communities that there will be least impact because of the efficient measures and management plan.

### 7.4.1 Management and Mitigation of Environmental Impact from Construction

CH. Karnchang's construction projects are subject to strict environmental management in construction sites, project offices, and construction materials warehouses. Each project will have a different period to conduct study on the environment, such as, monthly or quarterly, etc. Examples of various measures are as follows:

#### Measures to Minimize Dust

- 1) Arrange for effective supports for materials which may fall from overhead construction activities in order to prevent such materials from spreading;

- 2) Wash truck wheels before leaving construction sites;
- 3) Securely cover trucks before leaving construction sites;
- 4) Construction activities, such as, open-cut excavation, building demolition, stockpiling, drilling, and concrete mixing, must be carried out within an enclosed area with fences of at least two meters high;
- 5) Regularly clean up soil and sand outside the fences; and clean all roads adjacent to construction sites;
- 6) For a construction site with open-cut excavation, regularly damp down surfaces with water to prevent dust from spreading.

#### Measures to Reduce Noise

- 1) Carry out noise generating construction activities during 6:00 - 22:00 hours, and if continued after 22:00 hours, give advance notice to nearby communities;
- 2) Impose measures to prevent noise, such as, install temporary noise barriers around construction sites;
- 3) With respect to areas for open-cut excavation, demolition, stockpiling, drilling, or concrete mixing, erect fences with a height of at least 2.0 meters around construction sites.

#### Measure to Minimize Impact on Surface Water

- 1) Install settling ponds or sedimentation filters to minimize impact from suspended loads prior to release to water sources, particularly around metro station construction sites;
- 2) Carry out heavy construction activities during dry season, such as, site adjustment and excavation, etc.;
- 3) Provide restrooms in construction sites and workers' quarters, and install a wastewater water treatment system for effluent from workers;
- 4) Provide trash cans in various areas in construction sites, regularly clean construction sites and adjacent areas, and prevent waste disposal into water source;
- 5) Collect and keep hazardous substances, including used fuel oil, lubricating oil and contaminated containers under proper control and disposal by sanitary methods.

#### 7.4.2 Inspection of Environmental Quality

CH. Karnchang has engaged a specialized consulting company group recognized by various organizations for inspection of environmental quality and study on potential impact during construction, especially for large-sized projects with high value. The consulting company will prepare and submit reports on compliance with measures to prevent and remedy the environmental impact, and monitoring measures of environmental impact, to CH. Karnchang and project owners.

In addition, there will be a total of four environmental committees comprising an environmental committee from project owners, and the respective committees from the environmental consulting company, external expert on environment, and CH. Karnchang's environmental management, to conduct monthly inspection as to whether each construction project has complied with the approved measures to prevent and remedy the environmental impact. In case of any failure to remedy after being notified for three times, the committee will impose a clear and relatively severe punishment, for example, change of management in charge or suspension of the construction until such problem will be solved.

In 2018, there was no construction project of CH. Karnchang that failed to comply with the measures to prevent and remedy the environmental impact. The standards used in comparing the results on monitoring and inspection of the environmental quality refer to Thailand's environmental quality standards, as follows:

##### 1. Ambient Air Quality

- Notification of the National Environment Board No.24 (B.E. 2547 (2004)), Re: Determination of Ambient Air Quality Standards, issued under the Enhancement and Conservation of National Environment Quality Act B.E. 2535 (1992), published in the Government Gazette, Volume 121, Special Section 104 Ngor, dated September 22, 2004

- Regulations of Bangkok Metropolitan Administration and Guidelines on Control of Particulate matter from Construction of Pollution Control Department.

##### 2. Inspection of vibration

- Notification of the National Environmental Board No. 15 (B.E. 2540), dated 12 March 1997, Re Prescription of Standard of Loudness in General, published in the Government Gazette Volume 114, Section 27 Ngor, dated 3 April 1997.
- Notification of the National Environmental Board No. 37 (B.E. 2553), dated 26 April 2010, Re Prescription of Standard of Vibration for Avoidance of Impact on Buildings, published in the Government Gazette Volume 127, Section 69 Ngor, dated 2 June 1997.

##### 3. General Noise Level

- Notification of the National Environment Board No. 15 (B.E.2540 (1997)) dated March 12, 1997, Re: Determination of General Noise Level Standard, published in the Government Gazette, Volume 114, Section 27 Ngor, dated April 3, 1997.

##### 4. Surface Water Quality

- The Notification of the National Environment Board No.8 (B.E.2537 (1994)), issued under the Enhancement and Conservation of National Environmental Quality Act B.E.2535 (1992) dated February 24, 1994, Re: Water Quality Standards in Surface Water Sources, Type 4, namely, water sources which receive effluent from certain categories of activities and can be utilized for:
  - (a) consumption, which such water must be first sterilized and undergo a specific water quality improvement process;
  - (b) industrial purpose;
- The Notification of the National Environment Board No.8 (B.E.2537 (1994)) stipulates NO<sub>3</sub>-N standards.



#### 7.4.2.1 Air Quality Measurement

##### • MRT Orange Line Project, Thailand Cultural Centre — Ramkhamhaeng 12 Section, Contract 1

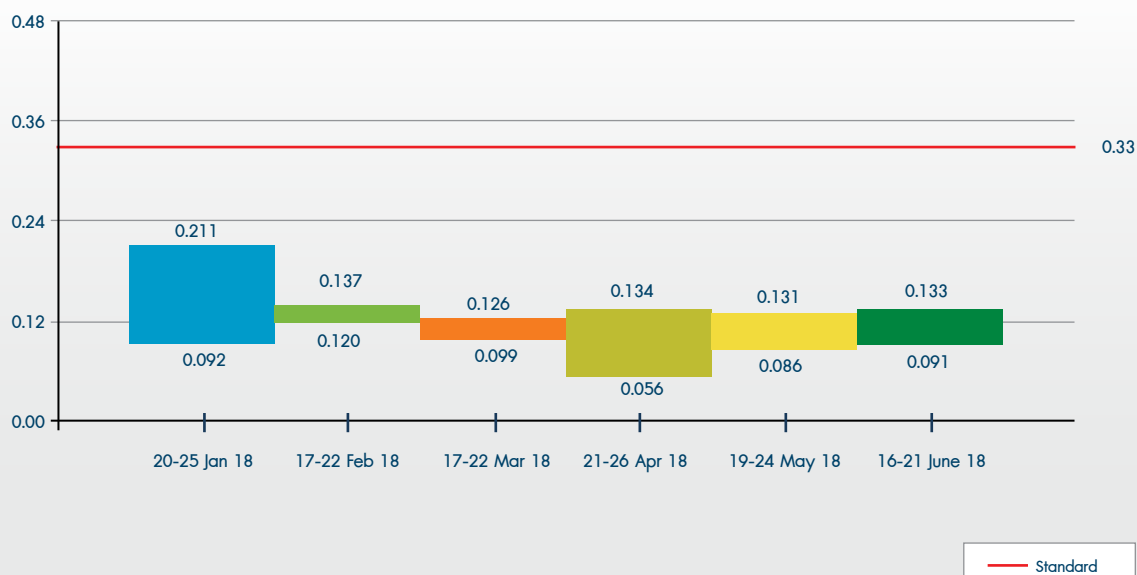
The monitoring the quality of air in the atmosphere in general along the route of MRTA Orange Line Project, Thailand Cultural Centre — Ramkhamhaeng 12 Section, Contract 1, construction period at 1 location, namely,

Chanwit School, from January - June 2018. It monitored the quantity of total suspended particulate average of 24 hours and the particulate matter of the size of no larger than 10 micron average of 24 hours, as detailed below:

#### The monitored the quantity of total suspended particulate average of 24 hours at Chanwit School from January – June 2018



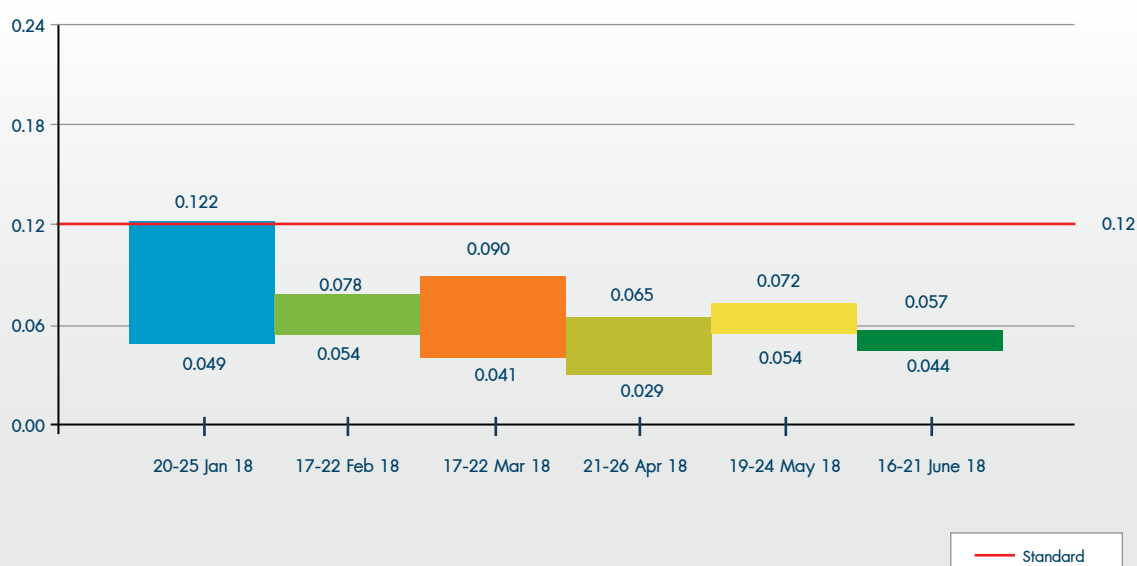
total suspended particulate average of 24 hours (mg./m<sup>3</sup>)



## The monitored the quantity of particulate matter of not larger than 10 microns (PM10) <sup>2/</sup> average of 24 hours at Chanwit School from January – June 2018



particulate matter of not larger than 10 microns (PM10) <sup>2/</sup> average of 24 hours (mg./m<sup>3</sup>)



The monitoring the quality of air in the atmosphere in general along the route of MRTA Orange Line Project, Thailand Cultural Centre — Ramkhamhaeng 12 Section, Contract 1, construction period at 1 location, namely,

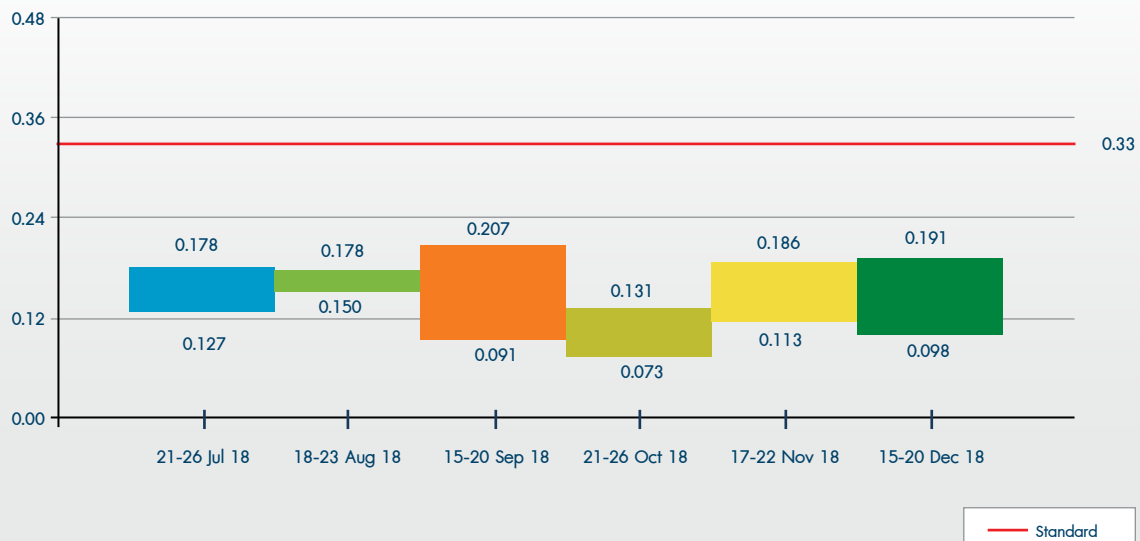
Chanwit School, from July - December 2018. It monitored the quantity of total suspended particulate average of 24 hours and the particulate matter of the size of no larger than 10 micron average of 24 hours, as detailed below:



## The monitored the quantity of total suspended particulate average of 24 hours at Chanwit School from July – December 2018



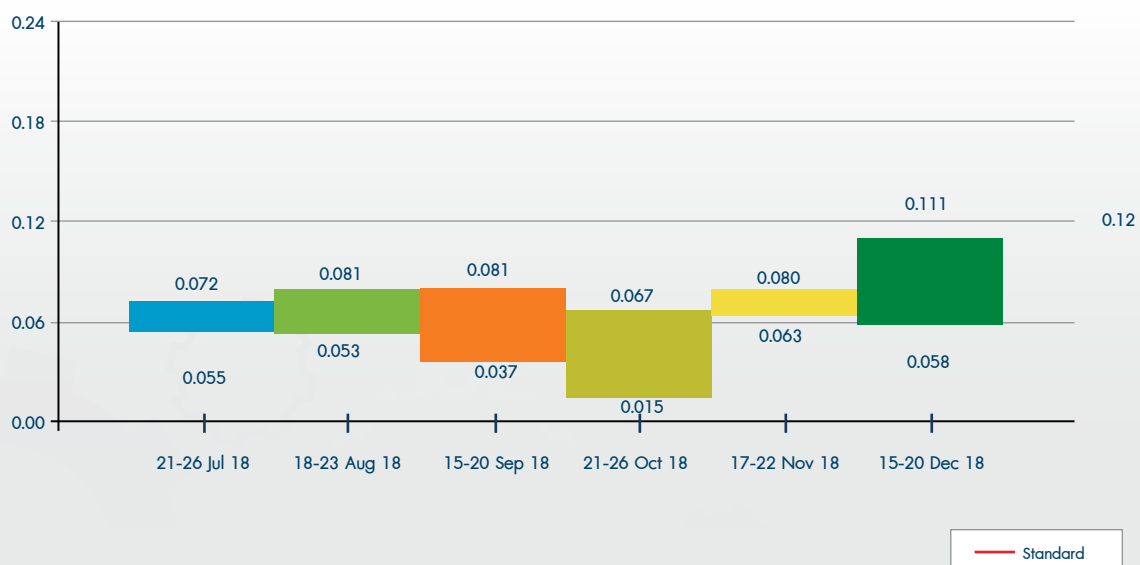
total suspended particulate average of 24 hours (mg./m<sup>2</sup>)



## The monitored the quantity of particulate matter of not larger than 10 microns (PM10) <sup>2/</sup> average of 24 hours at Chanwit School from July – December 2018



particulate matter of not larger than 10 microns (PM10) <sup>2/</sup> average of 24 hours (mg./m<sup>2</sup>)



• **MRT Orange Line Project, Ramkhamhaeng 12 - Hua Mak Section, Contract 2**

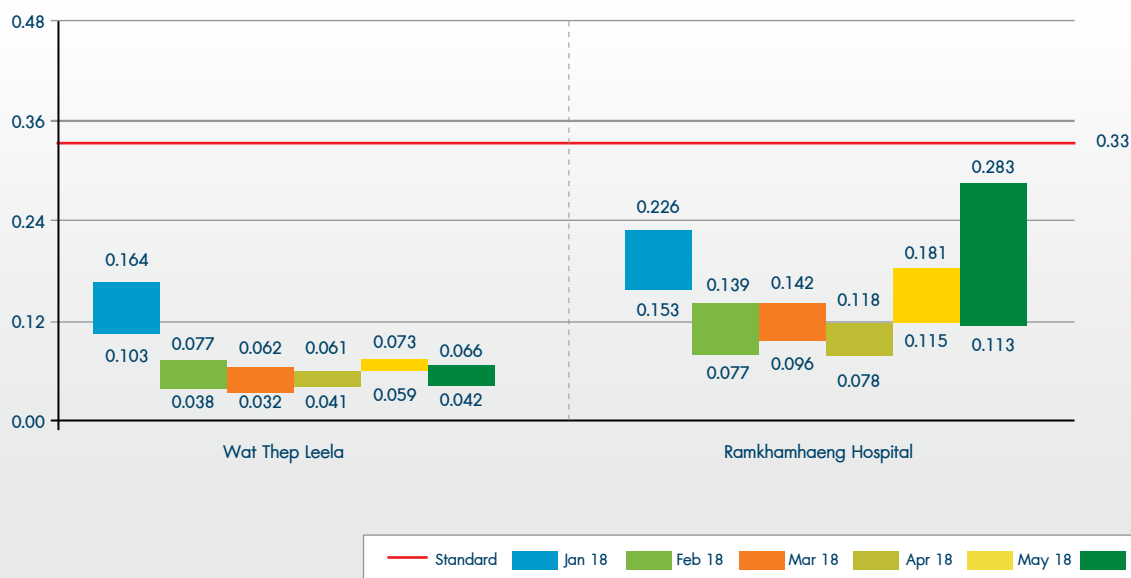
The monitoring the quality of air in the atmosphere in general along the route of MRTA Orange Line Project, Ramkhamhaeng 12 - Hua Mak Section, Contract 2, construction period at 2 locations, namely, Wat Thap Leela,

Ramkhamhaeng Hospital, from January - June 2018. It monitored the quantity of total suspended particulate average of 24 hours and the particulate matter of the size of no larger than 10 micron average of 24 hours, as detailed below:

**The monitored the quantity of total suspended particulate average of 24 hours at Wat Thap Leela and Ramkhamhaeng Hospital from January – June 2018**



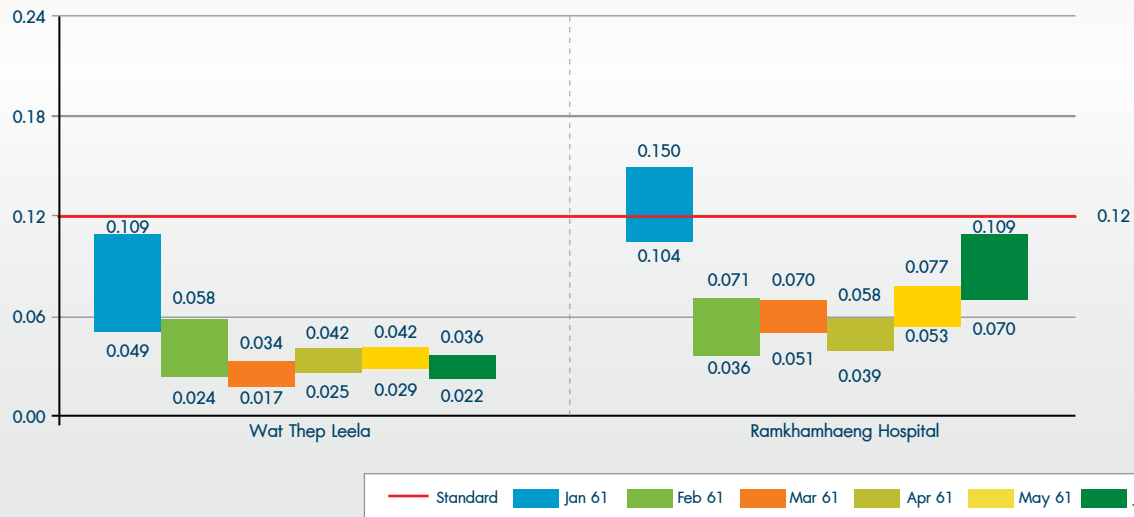
total suspended particulate average of 24 hours (mg./m<sup>3</sup>)



## The monitored the quantity of particulate matter of not larger than 10 microns (PM10) <sup>2/</sup> average of 24 hours from January – June 2018



particulate matter of not larger than 10 microns (PM10) <sup>2/</sup> average of 24 hours (mg./m<sup>3</sup>)



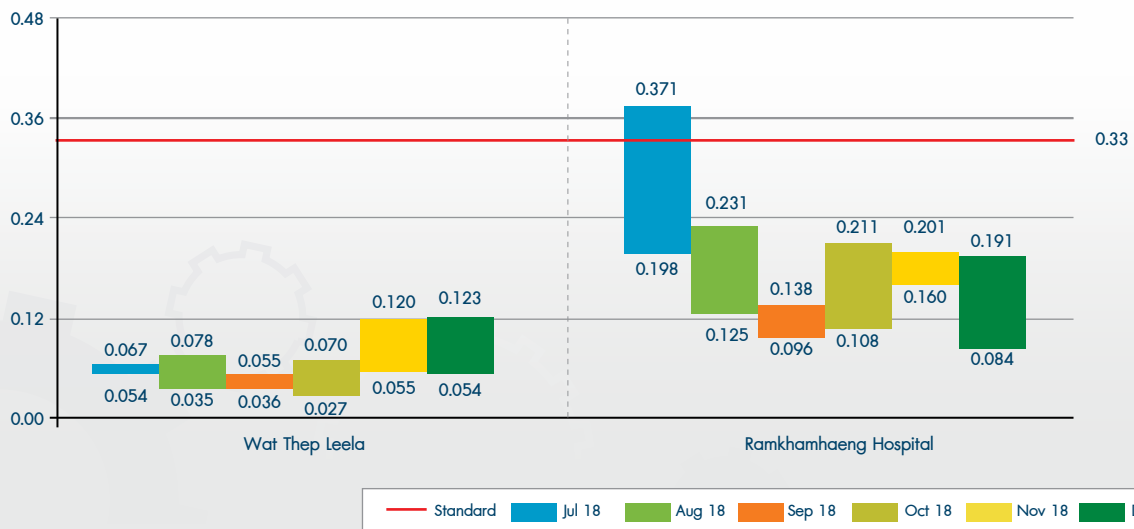
The monitoring the quality of air in the atmosphere in general along the route of MRTA Orange Line Project, Ramkhamhaeng 12 - Hua Mak Section, Contract 2, construction period at 2 locations, namely, Wat Thap Leela, Ramkhamhaeng Hospital, from July - December 2018.

It monitored the quantity of total suspended particulate average of 24 hours and the particulate matter of the size of no larger than 10 micron average of 24 hours, as detailed below:

## The monitored the quantity of total suspended particulate average of 24 hours at Wat Thap Leela and Ramkhamhaeng Hospital from July – December 2018



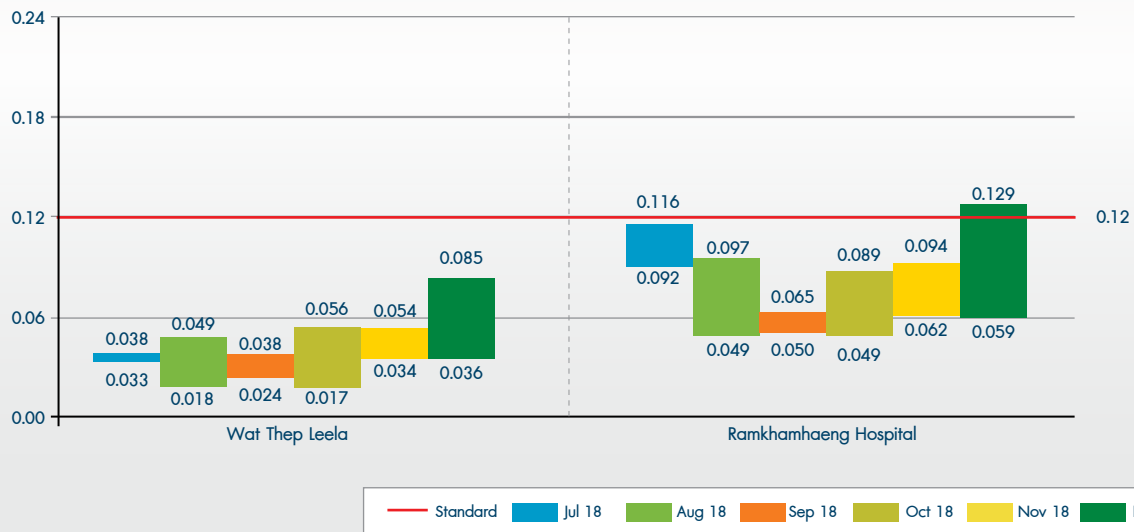
total suspended particulate average of 24 hours (mg./m<sup>3</sup>)



## The monitored the quantity of particulate matter of not larger than 10 microns (PM10) <sup>2/</sup> average of 24 hours from July – December 2018



particulate matter of not larger than 10 microns (PM10) <sup>2/</sup> (mg./m<sup>3</sup>)



### 7.4.2.2 Monitoring of Vibration

#### • The MRT Orange Line Project, Thailand Cultural Centre - Ramkhamhaeng 12, Contract 1

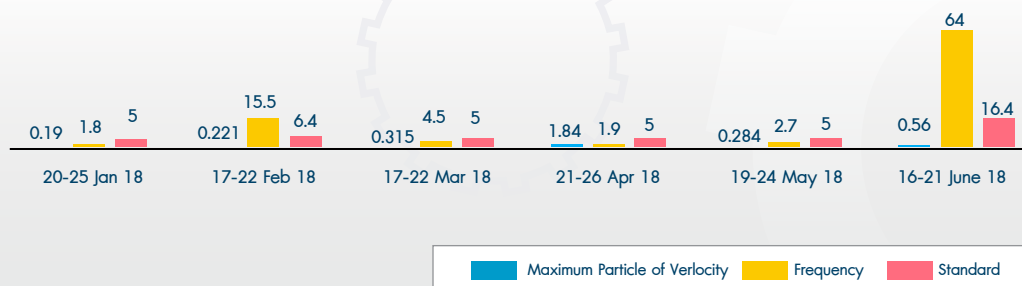
As for the results of monitoring and inspection of Vibration Level in general along the route of the MRTA Orange Line Project, Thailand Cultural Centre - Ramkhamhaeng 12, Contract 1, construction period from January - June 2018, conducted from 20-25 January 2018, 17-22 February 2018, 17-22 March 2018, 21-26 April 2018, 19-24 May 2018 and 16-21 June 2018 at one location, namely Chanwit School. It was found that the values of the average total suspended were mostly within specified standard under

the Notification of the National Environment Board No.37 (B.E. 2553 (2010)), Re : Prescription of Standard of Vibration for Avoidance of Impact on Buildings (26 April 2010), published in the Government Gazette, Volume 127, Special Section 69 Ngor, dated June 2, 1997, in the case of category 2 building the ground floor of the building, it may be concluded project did not have any effect on the structure and accessories of the building. The details as follow:



Horizontal : X-Axis

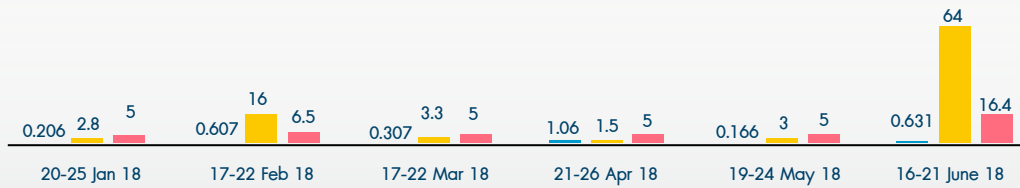
Unit : MM. / Seconds / Hertz





## Horizontal : Y-Axis

Unit : MM. / Seconds / Hertz

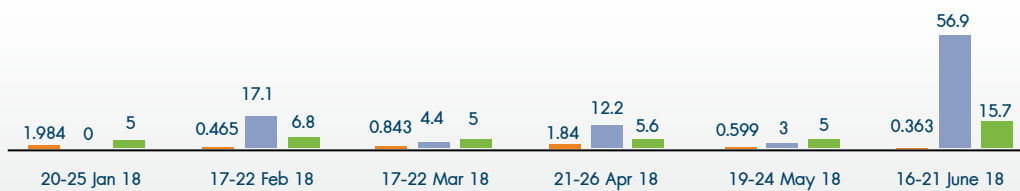


Maximum Particle of Verlocity Frequency Standard



## Vertical : X-Axis

Unit : MM. / Seconds / Hertz



Maximum Particle of Verlocity Frequency Standard

As for the results of monitoring and inspection of Vibration Level in general along the route of the MRTA Orange Line Project, Thailand Cultural Centre - Ramkhamhaeng 12, Contract 1, construction period from July-December 2018 at one location, namely Chanwit School. It was found that the values of the average total suspended were mostly within specified standard under the Notification of the National Environment Board No.37 (B.E. 2553 (2010)),

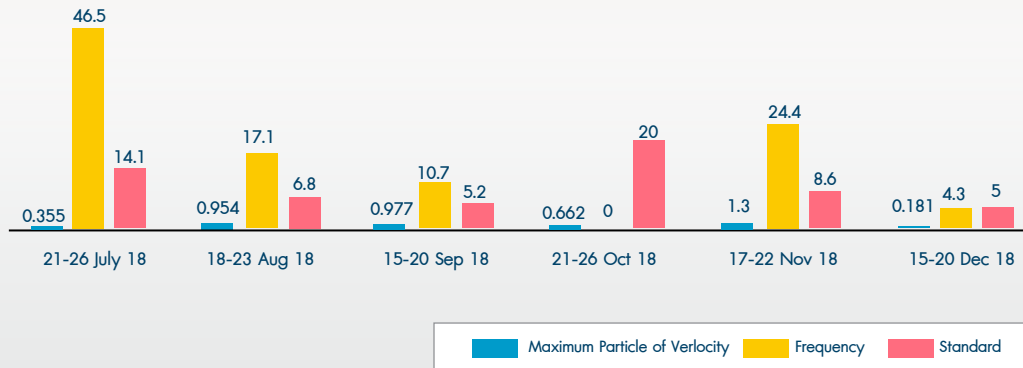
Re : Prescription of Standard of Vibration for Avoidance of Impact on Buildings (26 April 2010), published in the Government Gazette, Volume 127, Special Section 69 Ngor, dated June 2,1997, in the case of category 2 building the ground floor of the building, it may be concluded project did not have any effect on the structure and accessories of the building. The details as follow:





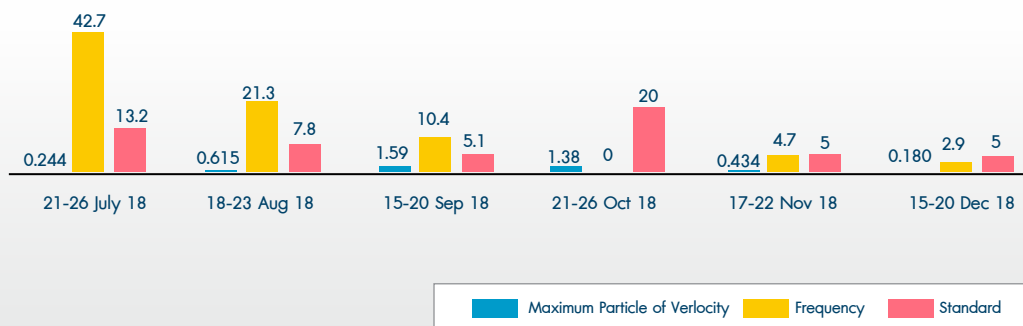
### Horizontal : X-Axis

Unit : MM. / Seconds / Hertz



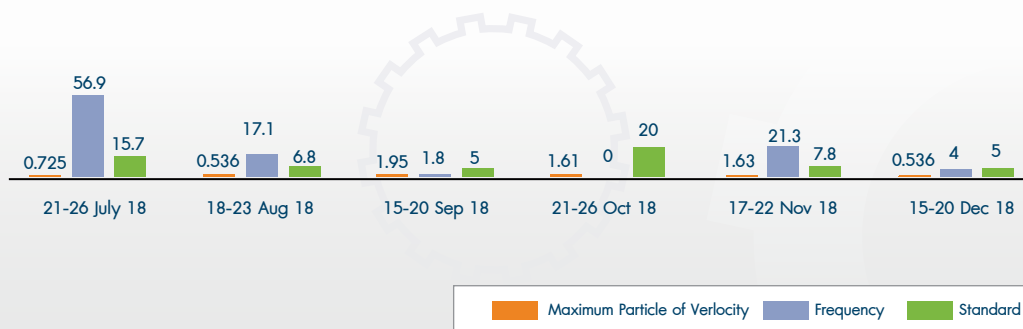
### Horizontal : Y-Axis

Unit : MM. / Seconds / Hertz



### Vertical : X-Axis

Unit : MM. / Seconds / Hertz



### • MRT Orange Line Project, Ramkhamhaeng 12 Hua Mak Section, Contract 2

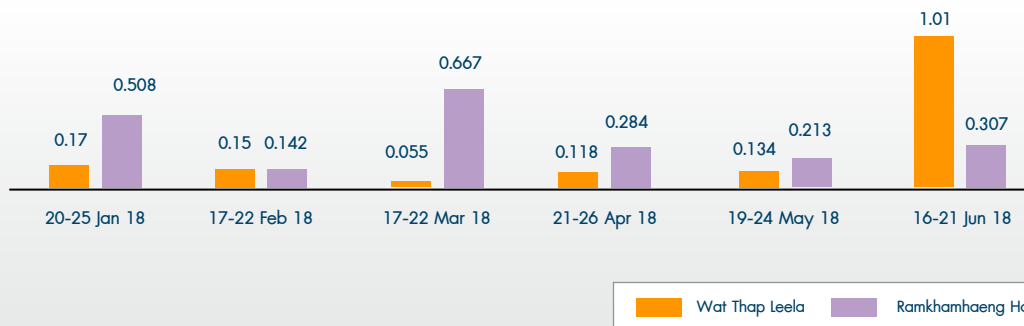
As for the results of monitoring and inspection of Vibration Level in general along the route of the MRTA Orange Line Project, Ramkhamhaeng 12 - Hua Mak, Contract 2, construction period from January - June 2018, conducted from 20-25 January 2018, 17-22 February 2018, 17-22 March 2018, 21-26 April 2018, 19-24 May 2018 and 16-21 June 2018 at two locations, namely Wat The Leela and Ramkhamhaeng Hospital. It was found that the values of the average total suspended were mostly

within specified standard under the Notification of the National Environment Board No.37 (B.E. 2553 (2010)), Re : Prescription of Standard of Vibration for Avoidance of Impact on Buildings (26 April 2010), published in the Goernment Gazette, Volume 127, Special Section 69 Ngor, dated June 2,1997, in the case of category 2 building the ground floor of the building, it may be concluded project did not have any effect on the structure and accessories of the building. The details as follow:



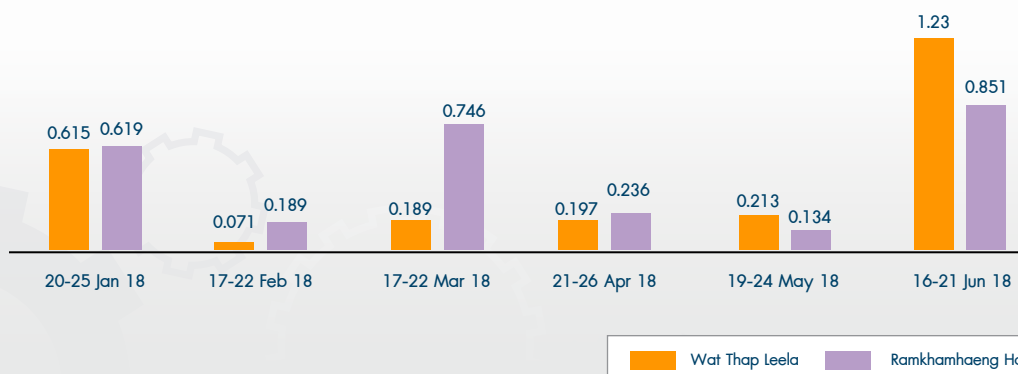
#### Horizontal : X-Axis (Maximum Particle of Verlocity)

Unit : MM. / Seconds / Hertz



#### Horizontal : Y-Axis (Maximum Particle of Verlocity)

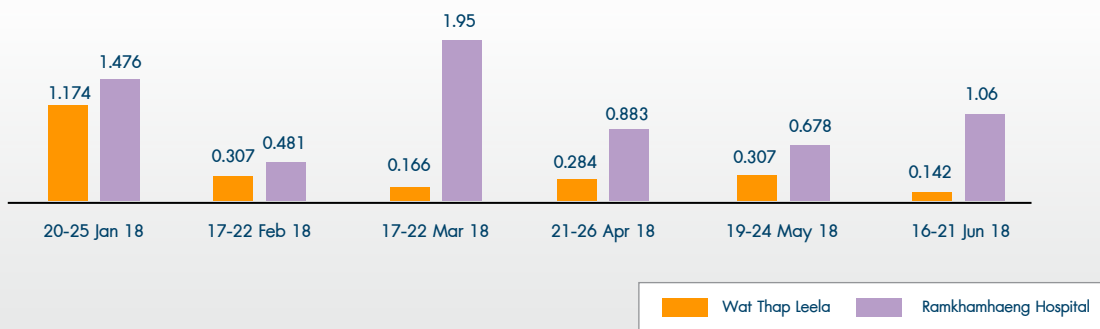
Unit : MM. / Seconds / Hertz





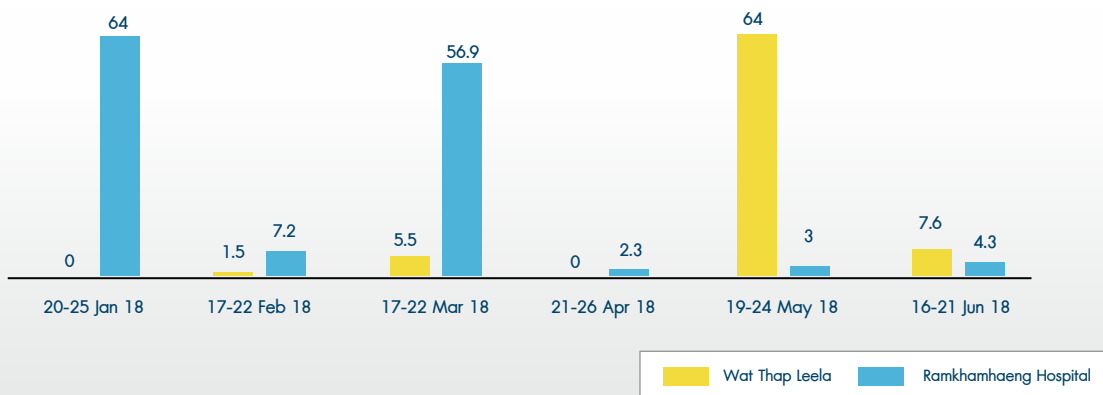
### Vertical : Z-Axis (Maximum Particle of Verlocity)

Unit : MM. / Seconds / Hertz



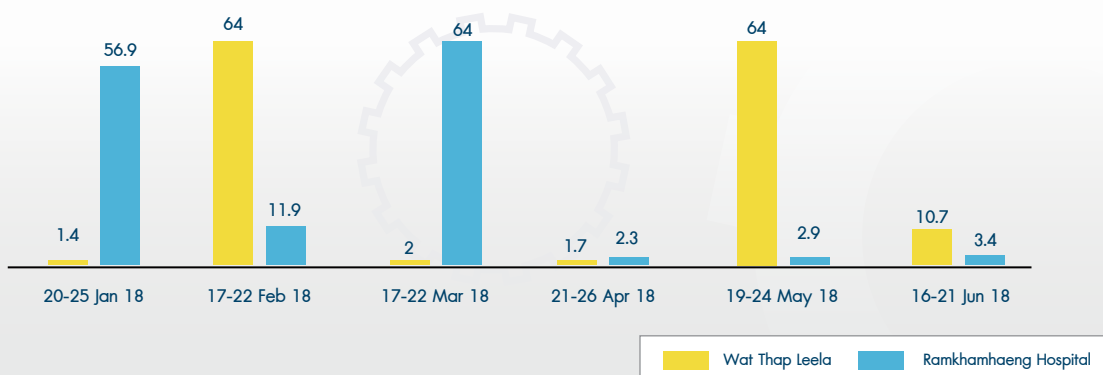
### Horizontal : X-Axis (Frequency)

Unit : MM. / Seconds / Hertz



### Horizontal : Y-Axis (Frequency)

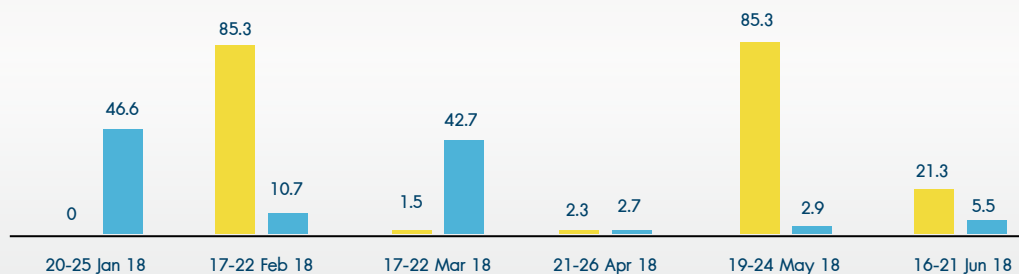
Unit : MM. / Seconds / Hertz





### Vertical : Z-Axis (Frequency)

Unit : MM. / Seconds / Hertz

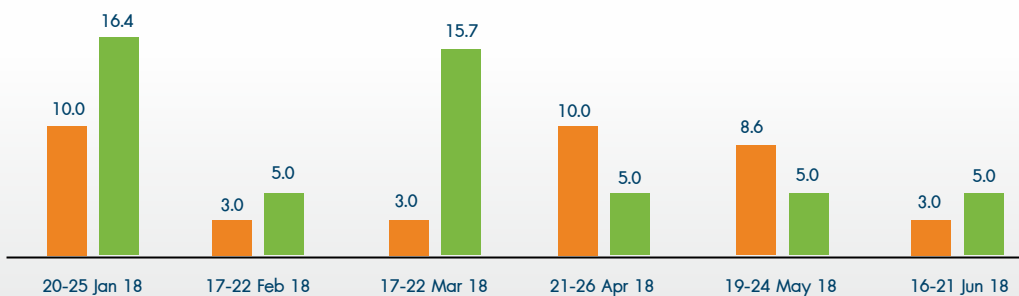


Wat Thap Leela Ramkhamhaeng Hospital



### Horizontal : X-Axis (Standard)

Unit : MM. / Seconds / Hertz

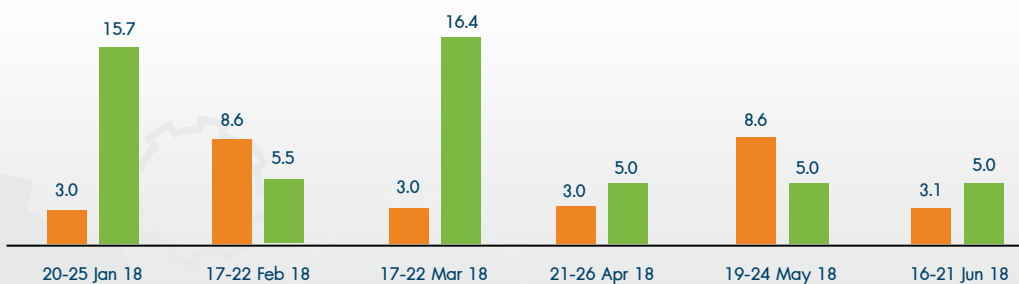


Wat Thap Leela Ramkhamhaeng Hospital



### Horizontal : Y-Axis (Standard)

Unit : MM. / Seconds / Hertz

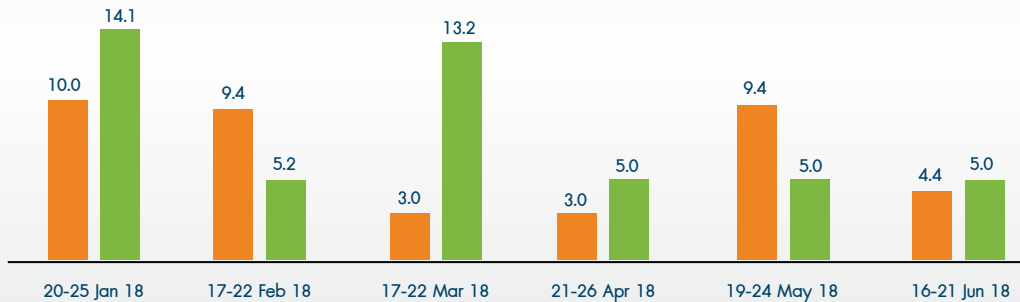


Wat Thap Leela Ramkhamhaeng Hospital



### Vertical : Z-Axis (Standard)

Unit : MM. / Seconds / Hertz



Wat Thap Leela Ramkhamhaeng Hospital

#### 7.4.2.3 Noise Measurement

##### • The MRT Orange Line Project, Thailand Cultural Centre – Ramkhamhaeng 12 Section, Contract 1

As for the results of monitoring and inspection of ambient noise level monitoring and inspection during the construction period during January – June 2018, from 20-25 January 2018, 17-22 February 2018, 17-22 March 2018, 21-26 April 2018, 19-24 May 2018 and 16-21 June 2018, at one location, namely, Chanwit School. The monitoring indexes comprise LAeq1hour, LAeq 24 hours,

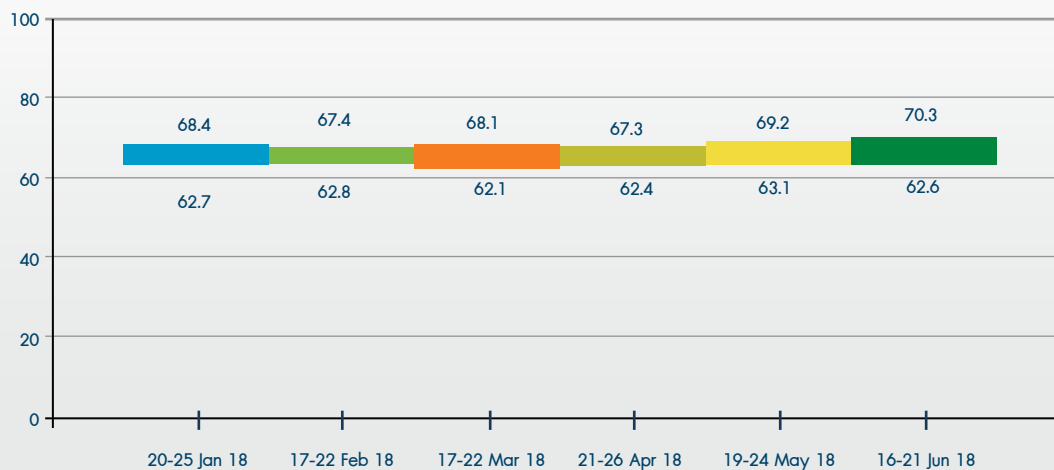
L<sub>A</sub>max, LA90 and L<sub>A</sub>dn. It was found that the values were mostly in the range of specified standard under the Notification of the National Environment Board No.15 (B.E. 2540 (1997)), Re : Determination of General Noise Level Standard, published in the Government Gazette, Volume 114, Section 27 Ngor, Dated April 3, 1997. The details as follows:





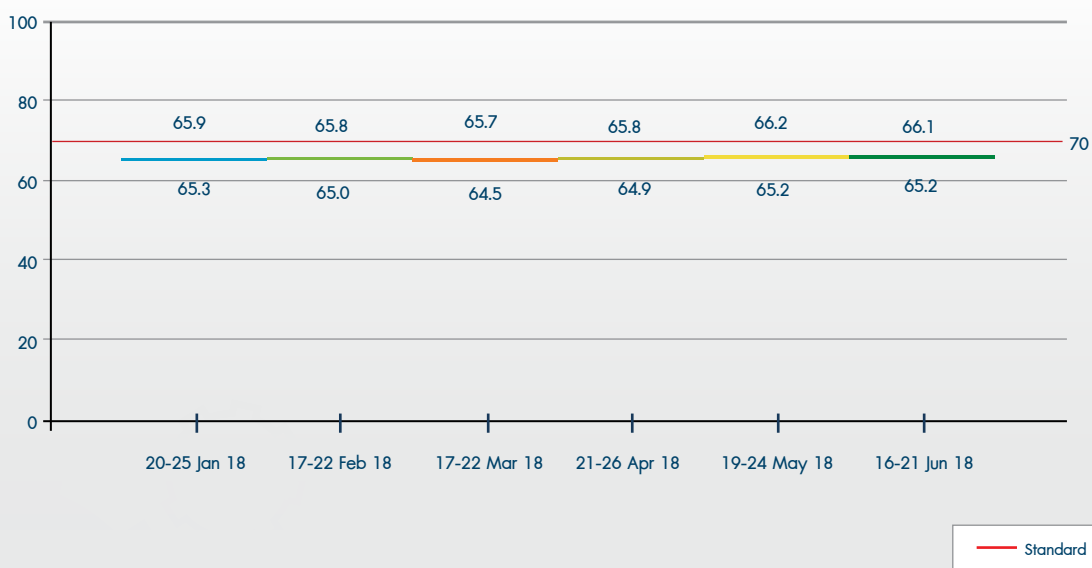
## The ambient noise monitoring and inspection of LAeq 1 hour at Chanwit School from January - June 2018

LAeq 1 hour (Decibel)



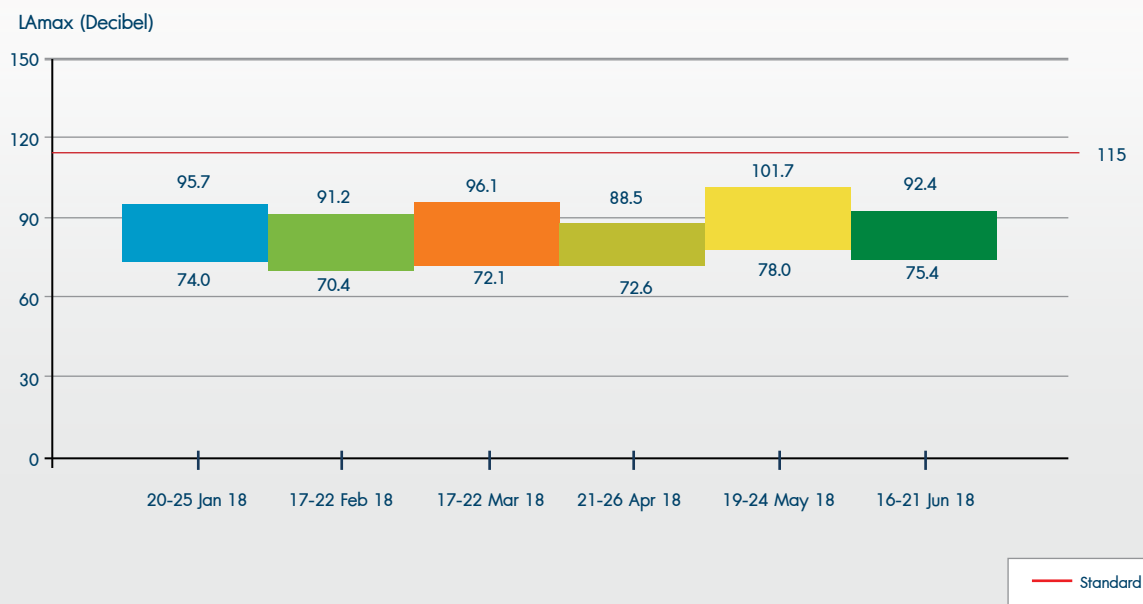
## The ambient noise monitoring and inspection of LAeq 24 hour at Chanwit School from January – June 2018

LAeq 24 hour (Decibel)

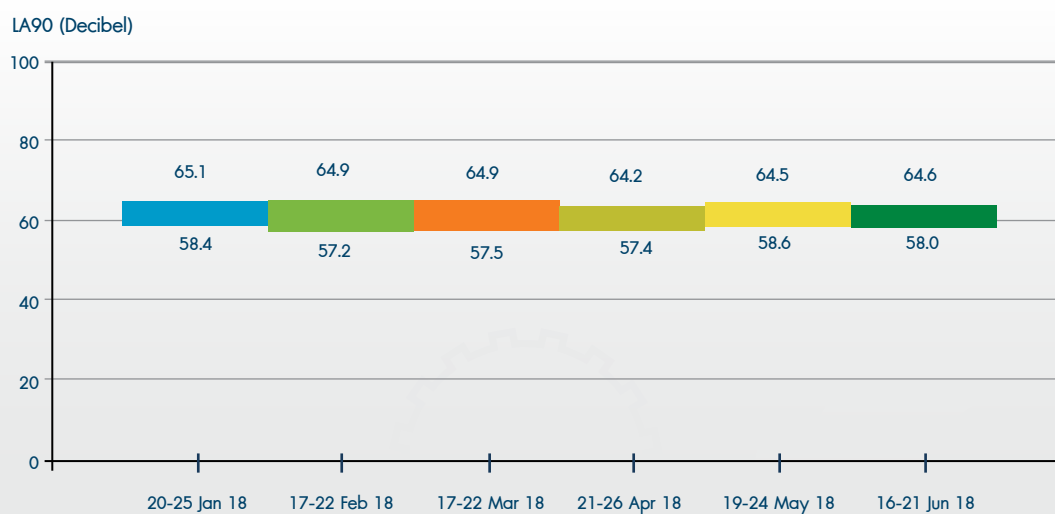




## The ambient noise monitoring and inspection of L<sub>Amax</sub> at Chanwit School from January – June 2018



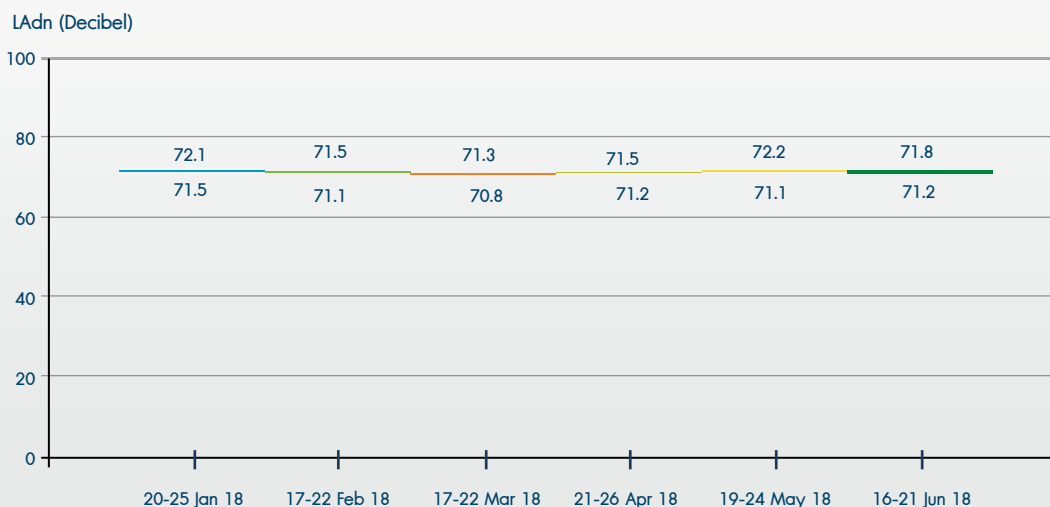
## The ambient noise monitoring and inspection of L<sub>A90</sub> at Chanwit School from January – June 2018







## The ambient noise monitoring and inspection of LAdn at Chanwit School from January – June 2018

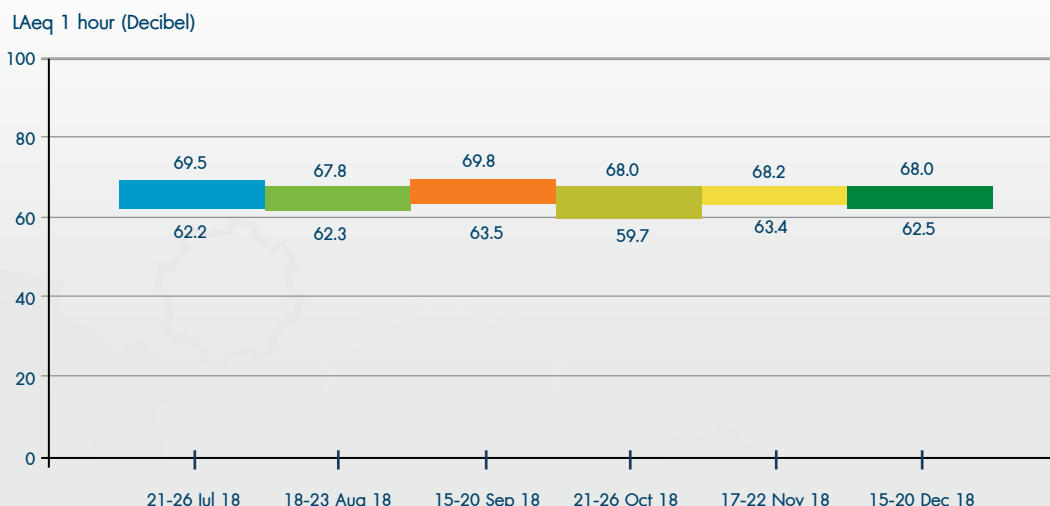


As for the results of monitoring and inspection of ambient noise level monitoring and inspection during the construction period during July-December 2018, from 21-26 July 2018, 18-23 August 2018, 15-20 September 2018, 21-26 October 2018, 17-22 November 2018 and 15-20 December 2018, at one location, namely, Chanwit School. The monitoring indexes comprise LAeq1hour, LAeq 24 hours,

LAmx, LA90 and LAdn. It was found that the values were mostly in the range of specified standard under the Notification of the National Environment Board No.15 (B.E. 2540 (1997)), Re : Determination of General Noise Level Standard, published in the Government Gazette, Volume 114, Section 27 Ngor, Dated April 3, 1997. The details as follows:



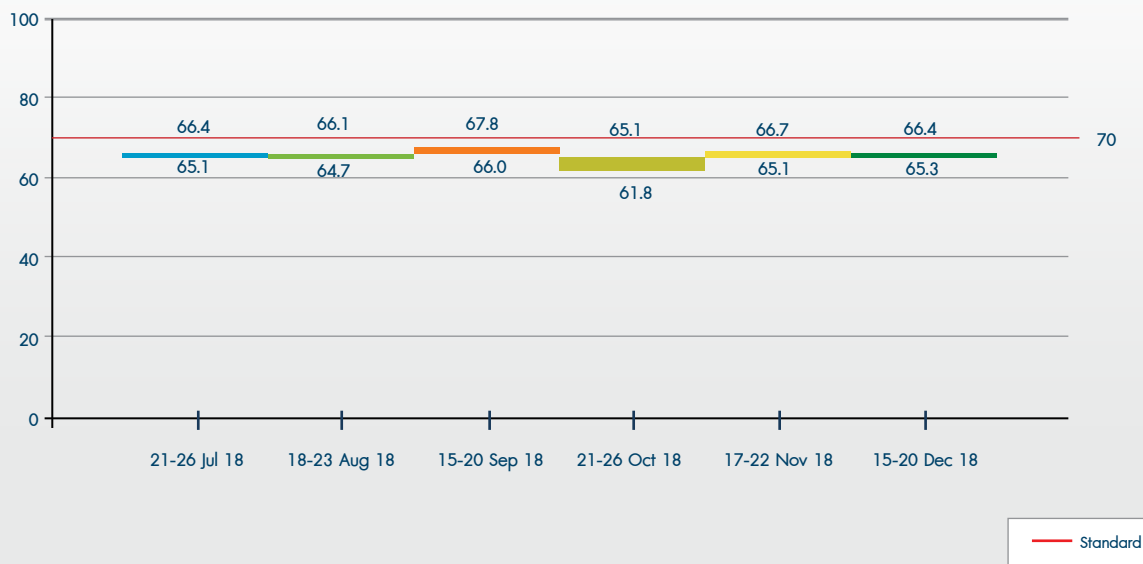
## The ambient noise monitoring and inspection of LAeq 1 hour at Chanwit School from July - December 2018





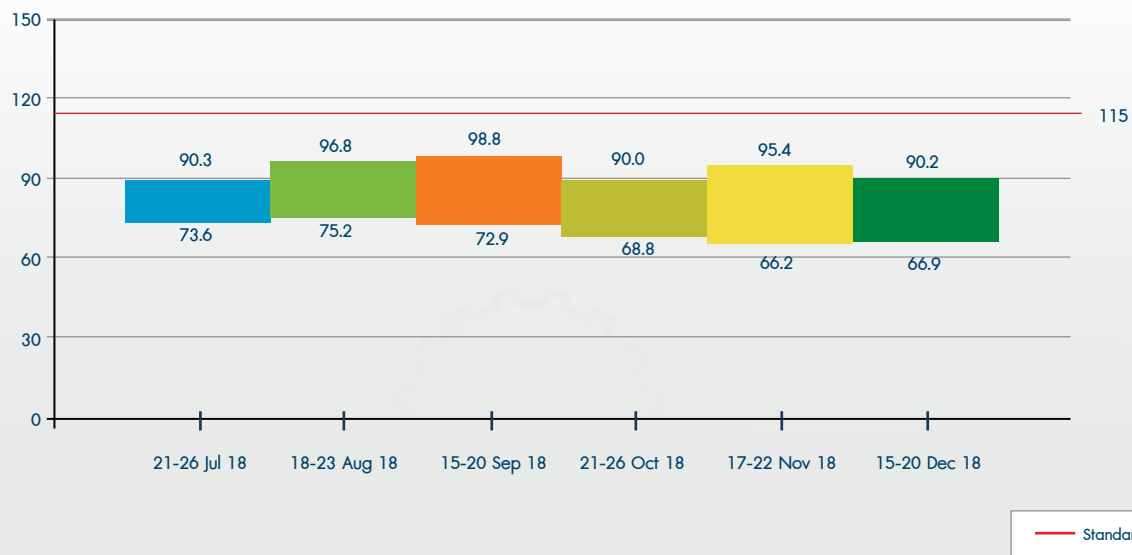
## The ambient noise monitoring and inspection of LAeq 24 hour at Chanwit School from July - December 2018

LAeq 24 hour (Decibel)



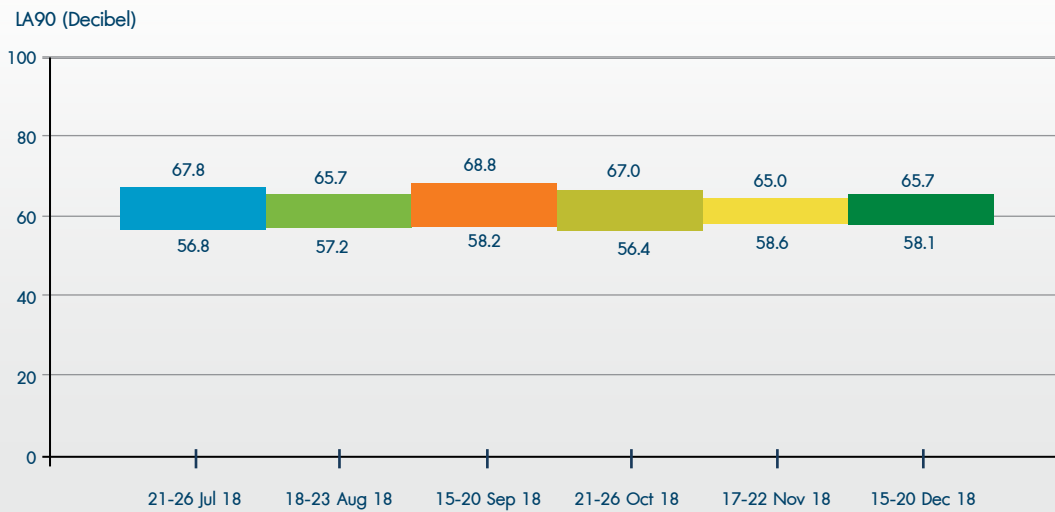
## The ambient noise monitoring and inspection of LAmax at Chanwit School from July - December 2018

LAmax (Decibel)

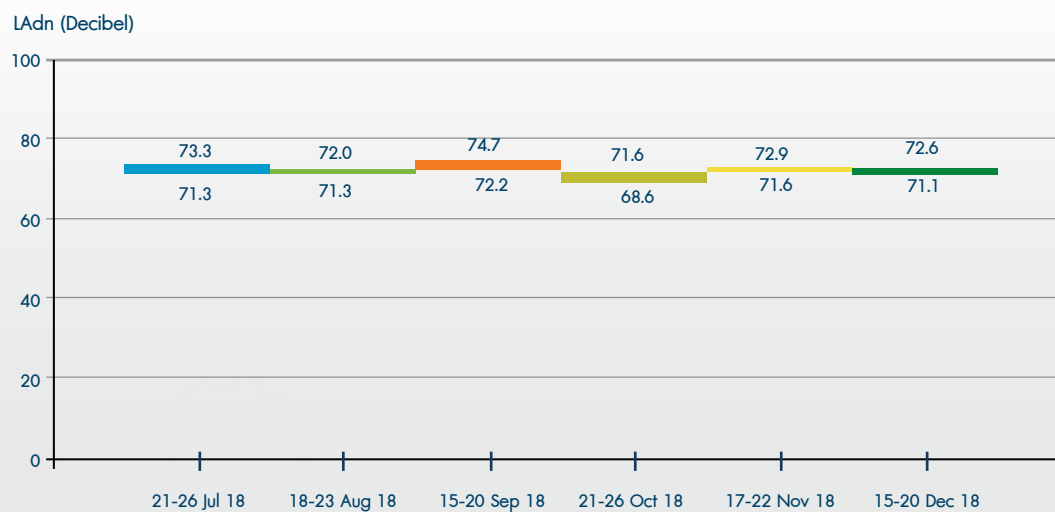




## The ambient noise monitoring and inspection of LA90 at Chanwit School from July - December 2018



## The ambient noise monitoring and inspection of LAdn at Chanwit School from July - December 2018



### • The MRT Orange Line Project, Ramkhamhaeng 12 - Hua Mak Section, Contract 2

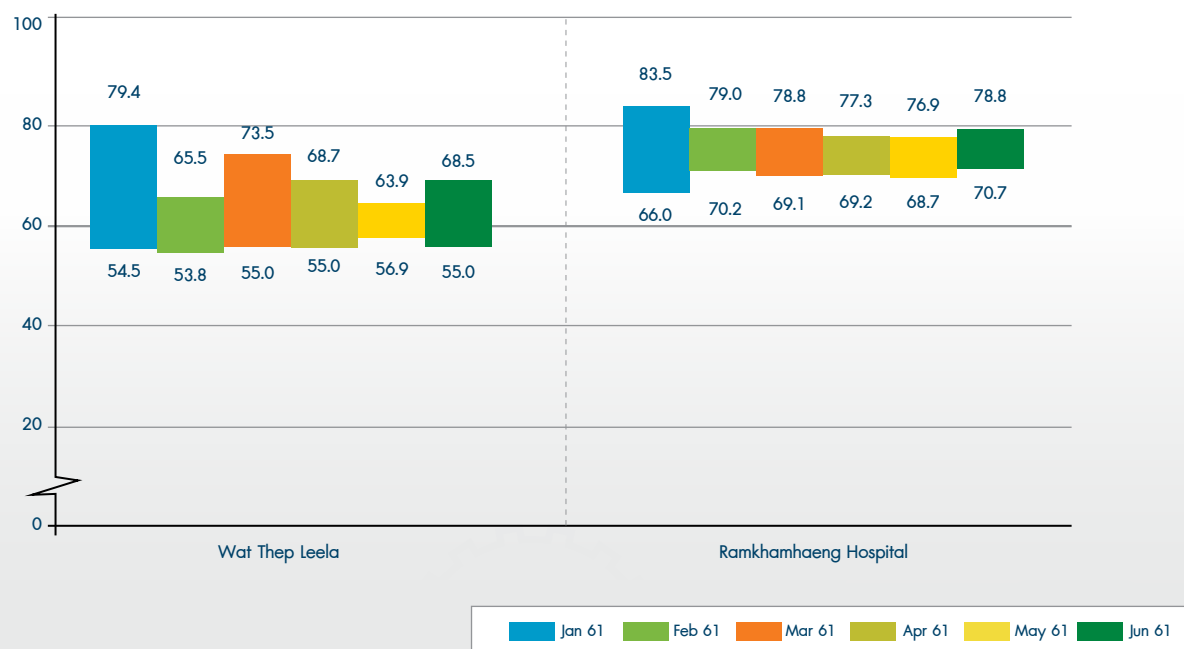
As for the results of monitoring and inspection of ambient noise level monitoring and inspection during the construction period during January-June 2018, from 20-25 January 2018, 17-22 February 2018, 17-22 March 2018, 21-26 April 2018, 19-24 May 2018 and 16-21 June 2018, at two locations, namely, Wat Thep Leela and Ramkhamhaeng Hospital. The monitoring indexes comprise LAeq 24 hours,

L<sub>A</sub>max, L<sub>A</sub>90 and L<sub>A</sub>d<sub>n</sub>. It was found that the values were mostly in the range of specified standard under the Notification of the National Environment Board No.15 (B.E. 2540 (1997)), Re : Determination of General Noise Level Standard, published in the Government Gazette, Volume 114, Section 27 Ngor, Dated April 3, 1997. The details as follows:



### The ambient noise monitoring and inspection of L<sub>A</sub>eq 1 hour at Chanwit School from January – June 2018

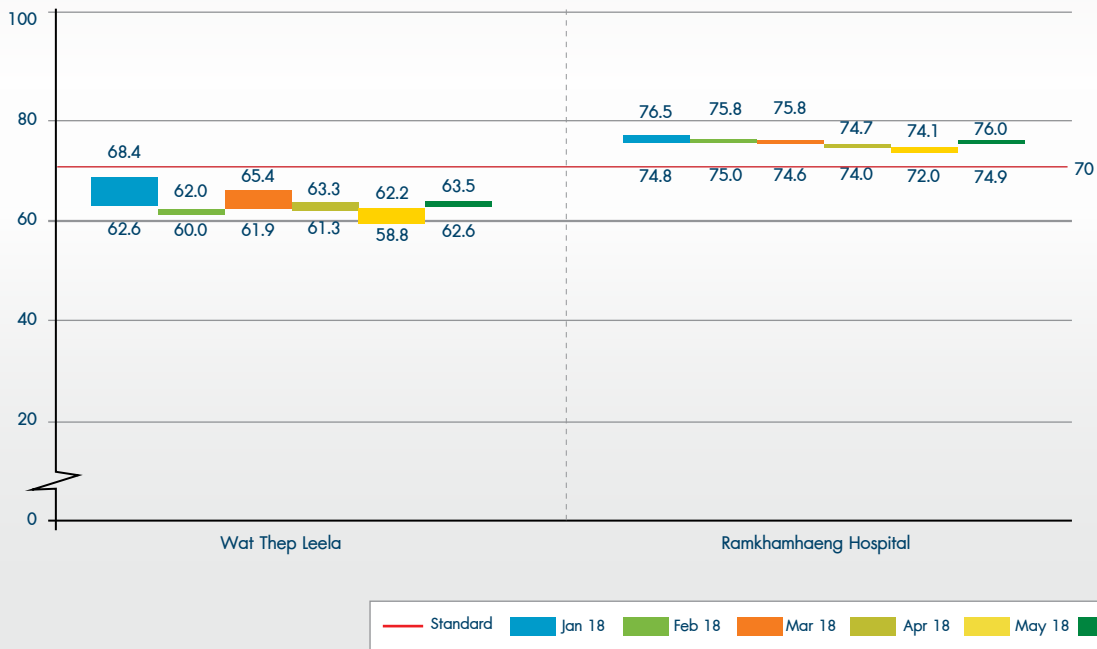
L<sub>A</sub>eq 1 hour (Decibel)





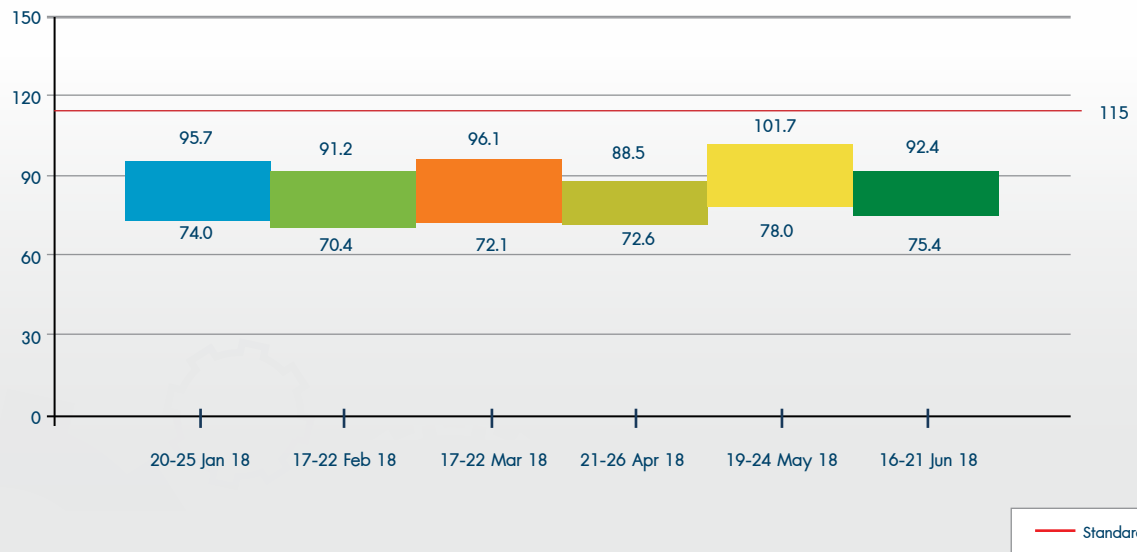
## The ambient noise monitoring and inspection of LAeq 24 hour at Chanwit School from January – June 2018

LAeq 24 hour (Decibel)



## The ambient noise monitoring and inspection of LAmax at Chanwit School from January – June 2018

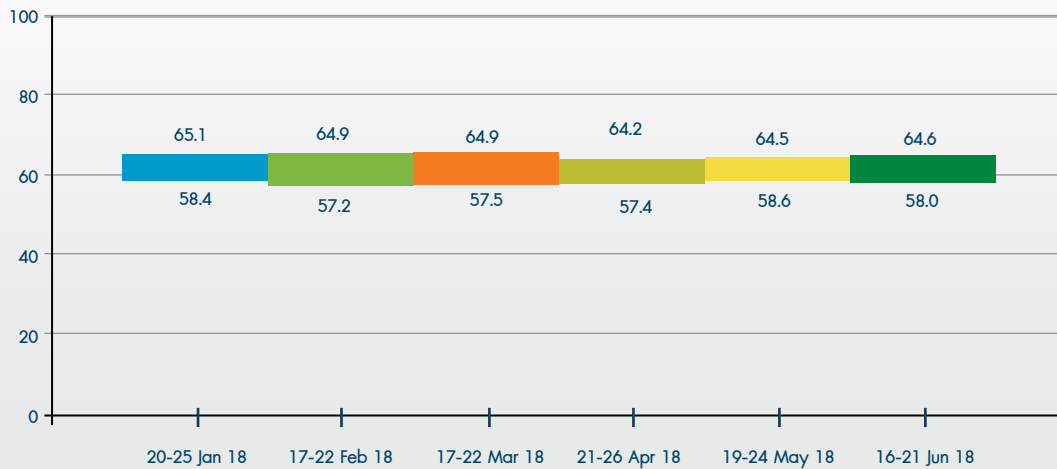
LAmax (Decibel)





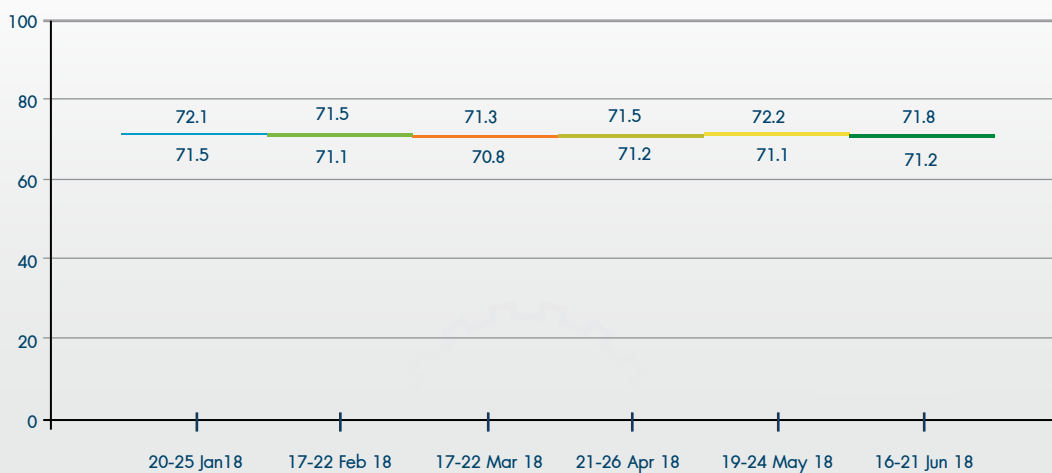
## The ambient noise monitoring and inspection of LA90 at Chanwit School from January – June 2018

LA90 (Decibel)



## The ambient noise monitoring and inspection of LAdn at Chanwit School from January – June 2018

LAdn (Decibel)



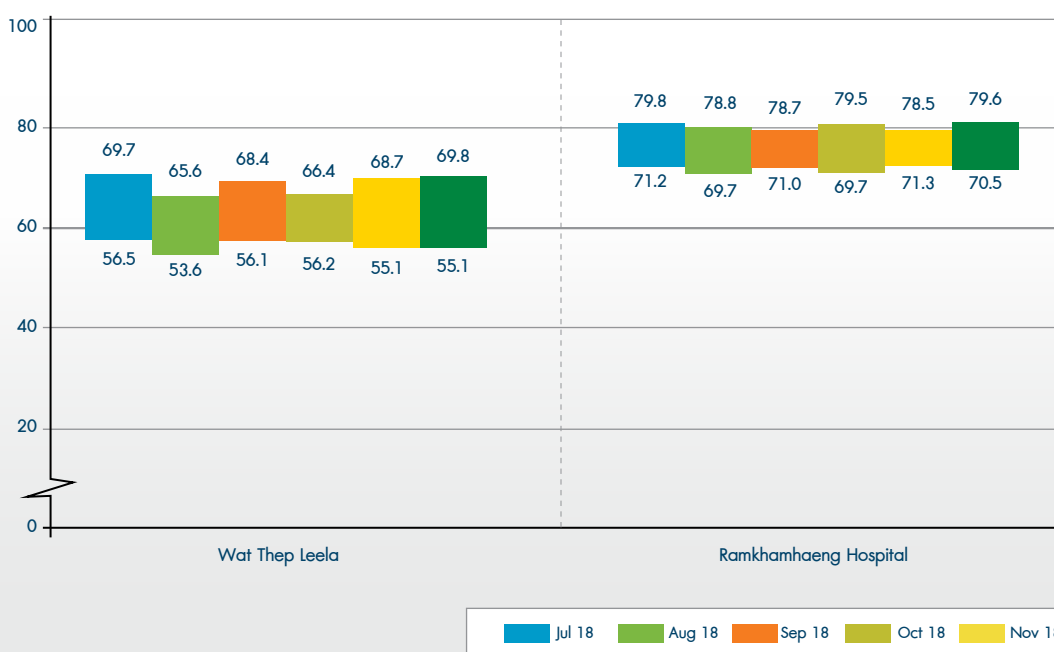
As for the results of monitoring and inspection of ambient noise level monitoring and inspection during the construction period during July-December 2018, from 21-26 July 2018, 18-23 August 2018, 15-20 September 2018, 21-26 October 2018, 17-22 November 2018 and 15-20 December 2018, at two locations, namely, Wat Thap Leela and Ramkhamhaeng Hospital. The monitoring

indexes comprise LAeq 24 hours, L<sub>Amax</sub>, LA90 and L<sub>Adn</sub>. It was found that the values were mostly in the range of specified standard under the Notification of the National Environment Board No.15 (B.E. 2540 (1997)), Re : Determination of General Noise Level Standard, published in the Government Gazette, Volume 114, Section 27 Ngor, Dated April 3, 1997. The details as follows:



### The ambient noise monitoring and inspection of LAeq 1 hour at Chanwit School from July - December 2018

LAeq 1 hour (Decibel)

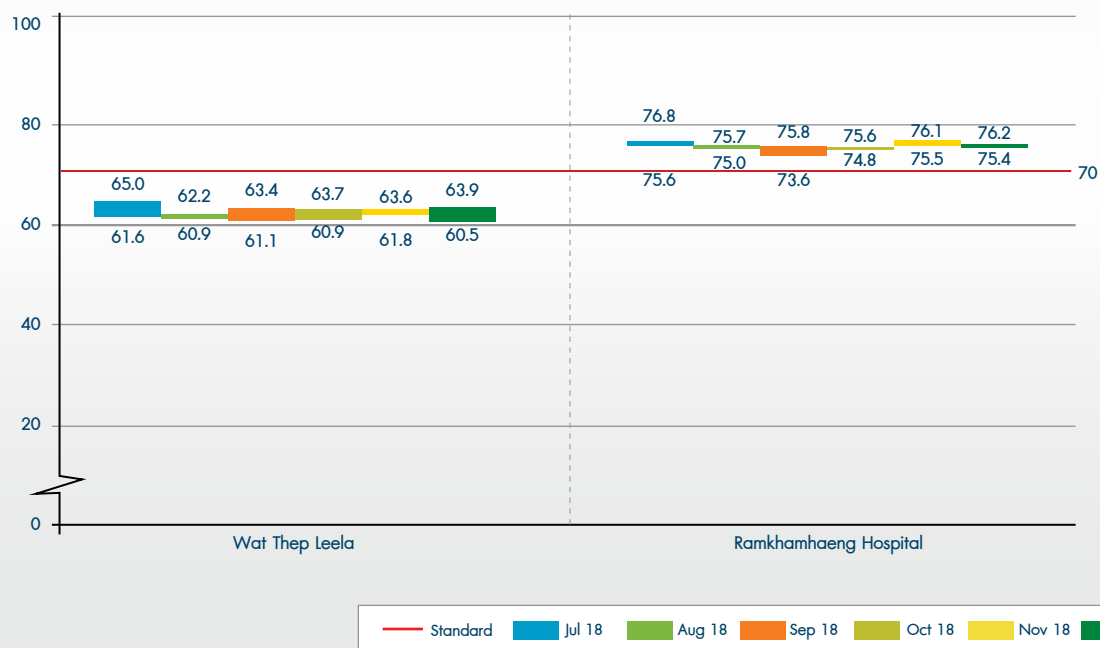






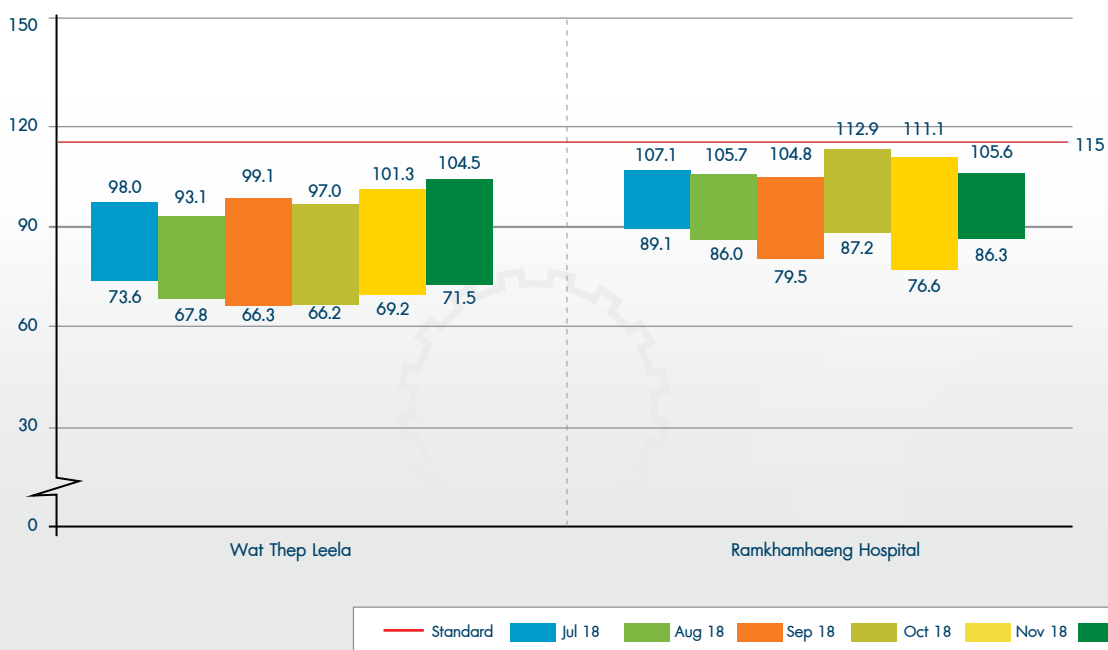
## The ambient noise monitoring and inspection of LAeq 24 hour at Chanwit School from July - December 2018

LAeq 24 hour (Decibel)



## The ambient noise monitoring and inspection of LAmax at Chanwit School from July - December 2018

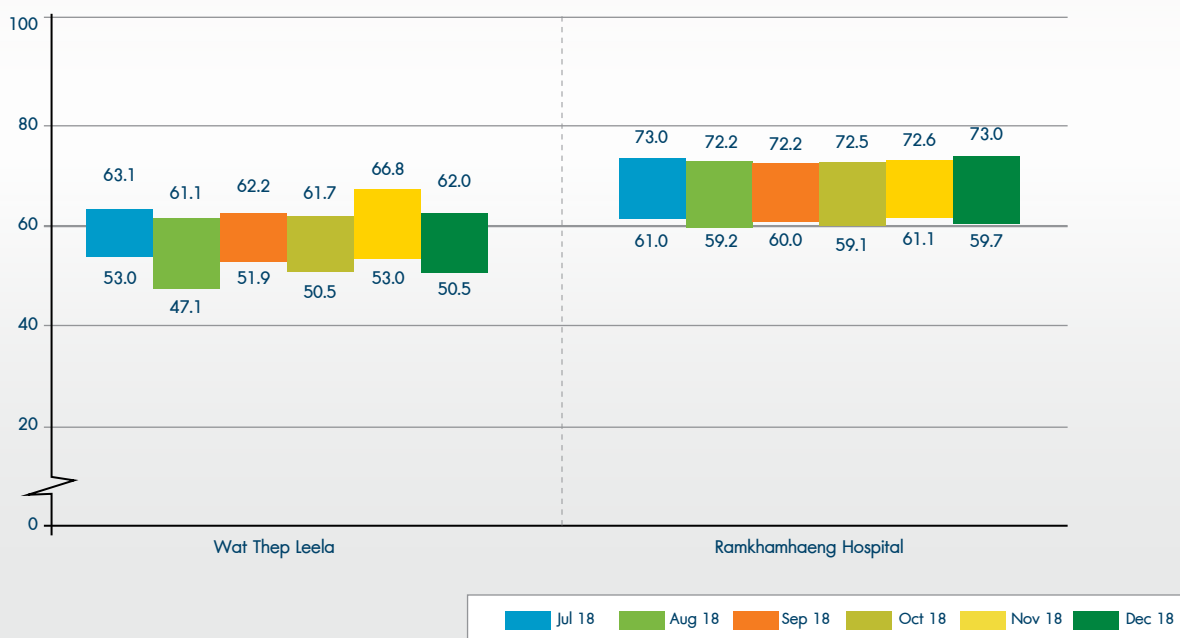
LAmax (Decibel)





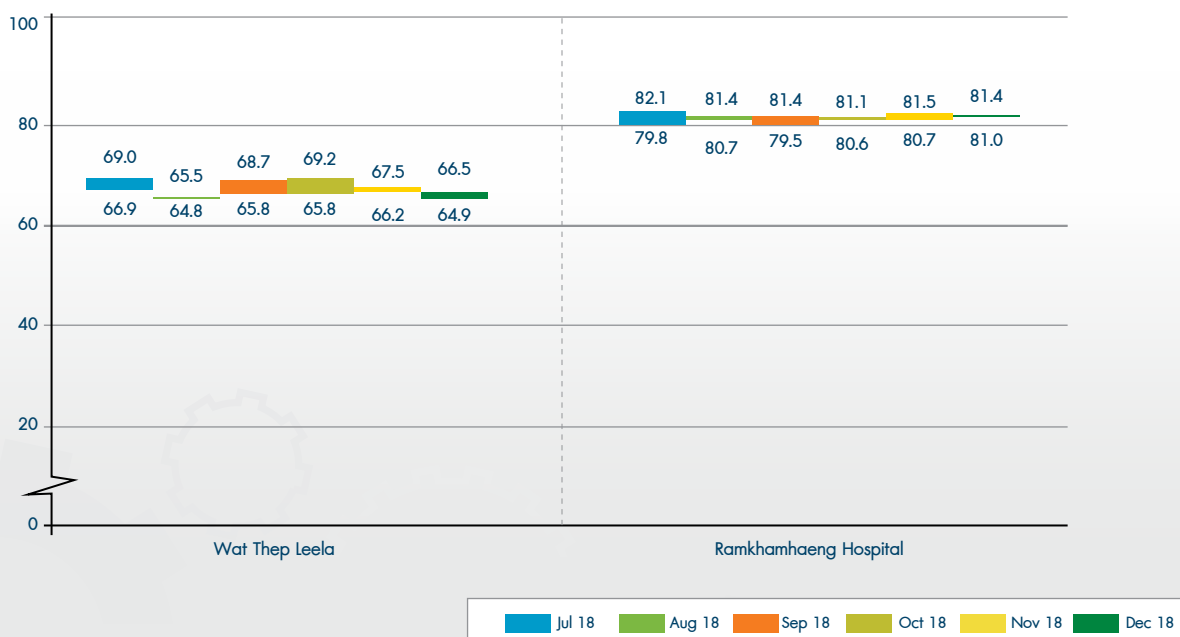
## The ambient noise monitoring and inspection of LA90 at Chanwit School from July - December 2018

LA90 (Decibel)



## The ambient noise monitoring and inspection of LAdn at Chanwit School from July - December 2018

LAdn (Decibel)



However, CH. Karnchang had notify the result of the monitoring of average loudness of 24 hours which was not within the standard to the persons concerned and remind them to strictly comply with relevant measures to reduce impacts and must do public relation activities to inform the people nearby to have been aware of the plan in advance every time so that the construction activities of the MRTA Project would not affect the people around.

#### 7.4.2.4 Implementation of Measures and Action Plans for Disposal of Leftover Materials and Solid Waste

Most of the material waste and garbage were found in the construction area and boarding shacks of workers. They were selected and separated by type and stored as measures of monitoring of the environmental quality in terms of garbage management of [Change in Details of Construction Project] of CH. Karnchang. The information regarding type, quantity and weight of the garbage, including the dump from construction activities and hazardous waste or materials from the construction and removal of the structures in the construction area or boarding shacks of workers were collected and assessed as to efficiency and problems regarding management throughout the construction period, as detailed below:

#### Monitoring locations



| Garbage Management Monitoring Location   | Garbage Management Monitoring Location |
|--|--|
| 1. Record type, quantity and weight of the garbage, including dump from excavation of tunnel and hazardous waste or materials from construction or removal of structures | 1. Construction area                   |
| 2. Assess the efficiency and problems regarding garbage management   | 2. Boarding shacks of workers          |

### Dispose of rubbish and Solid Waste Management Plan

| Category Example Procedures      | Category Example Procedures   | Category Example Procedures   |
|----------------------------------|---|---|
| General waste                    | Dry waste, such as, clothes, boxes, containers; Wet waste, such as, food leftovers, plants and vegetables                     | Arrange for containers, such as, trash cans, black garbage bags, in sites, and assign staff to collect the same to store in areas designated by the BMA for disposal daily. |
| Recycle waste                    | Paper scraps, glass bottles, plastic bottles  | Arrange for containers, such as, bins, black garbage bags, in sites for recycling.  |
| Scraps of construction materials | Scraps of rocks, soil, sand, concrete, wood scraps, steel scraps, metal scraps, used tires in good condition, used engine oil | Dispose of by local waste transport and disposal service providers or sell by auction to those wishing to conduct waste process for reuse with appropriate works.           |
| Leftover construction materials  | Steel rods, structural steel, sanitary ware, office supplies  | Store at the Company's central warehouse for use in the future.   |
| Hazardous or toxic waste         | Dry cell, battery, lamps, chemical materials from construction  | Dispose of by local waste transport and disposal service providers.   |

In addition, CH. Karnchang also complied with measures on material waste and garbage management as follows:

1. It complied with the law on waste pollution, special waste, hazardous substance properly and suitably. Garbage bins with cover were provided and oil contaminated garbage was separated. Garbage was collected and dumped at the garbage storage of the project.
2. Garbage bins were separated by type of the garbage. A garbage bin contains around 200 liters. Sufficient

bins were provided to collect garbage in the construction area and the field office for 2-3 days. The garbage would be taken for elimination only at night.

3. With regard to hazardous waste, coordination in advance was made for a permit from relevant agency.
4. In the area of the construction office, a place or room had to be provided for storage of the garbage before other agency came to remove it.

#### 7.4.2.5.1 Surface Water Quality

##### • Development of Double-Track Railway for Transportation and Logistics Management (Urgent Phase from Thanon Chira Junction to Khon Kaen)

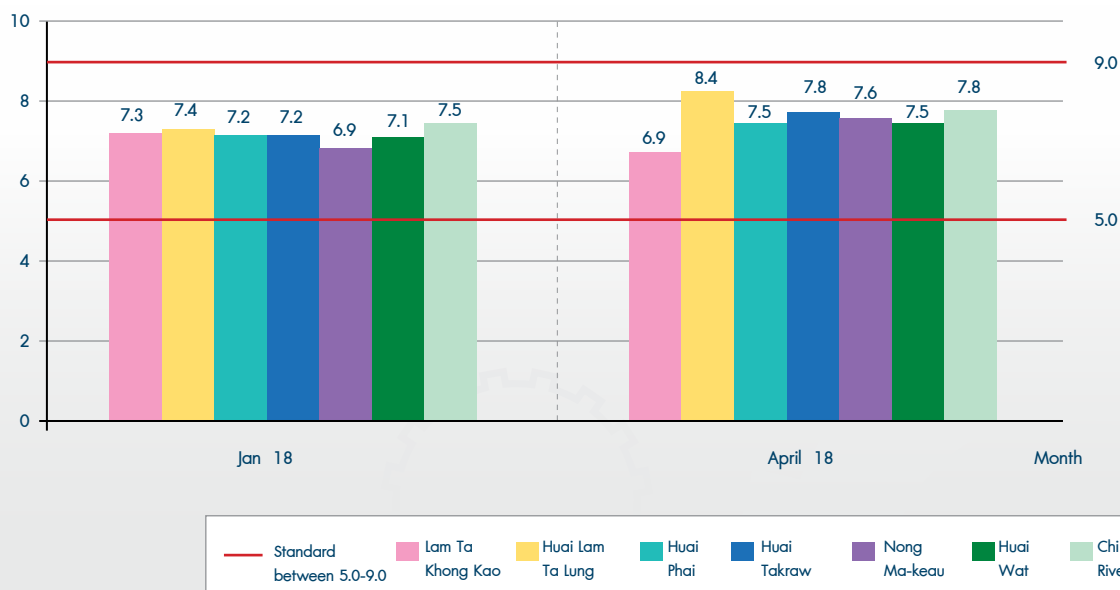
The monitoring of surface water quality was conducted at 7 areas, which were the Lamtaklong Kao river, Huai Lamtaklueng brook, Huai Phai brook, Huai Takhro brook, Nong Makhua pond, Huai Wa brook, and the Chi River between from January-June 2018 between 22-24 January 2018 and 24-26 April 2018. The results were checked against the Standard of Surface Water Quality Class 3 pursuant to the National Environment Board's Notification No. 8, B.E. 2537 (1994), issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535 (1992) , on Standard of Surface Water Quality

(as shown in Table 3-3). It was found that the surface water quality of the 7 monitored areas was mostly of the values that were within the ranges specified in the Standard of Surface Water Quality Class 3, which is a water source where water used in certain activities is discharged but can still be used for drinking and consumption after general water treatment process and sterilization and for agriculture pursuant to the National Environment Board's Notification No.8 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535 (1992). The details are as follows:



#### The result of monitoring of Positive Potential of the Hydrogen (pH) from January - June 2018

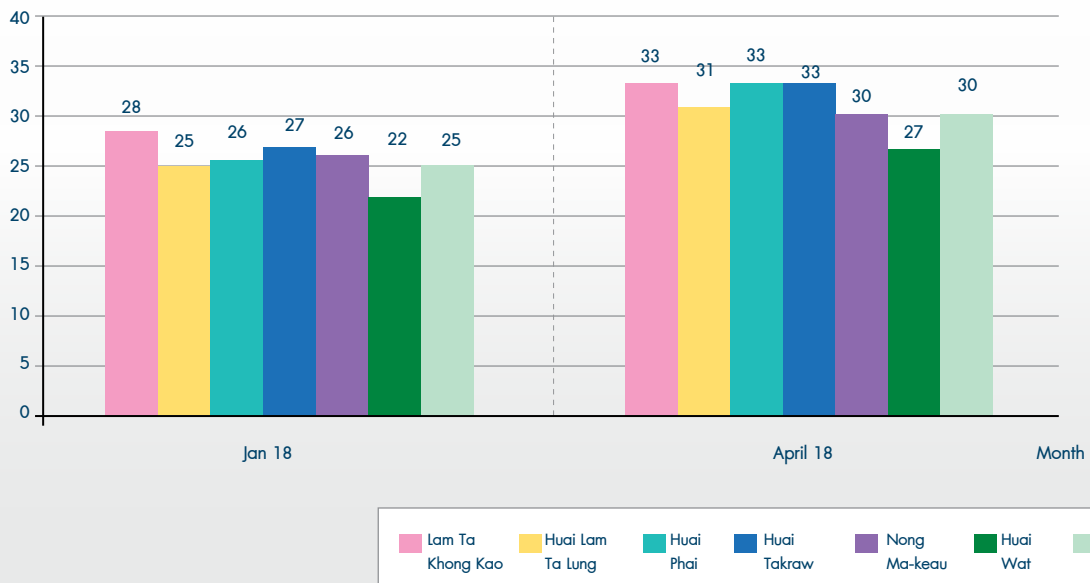
Potential of the Hydrogen (pH)





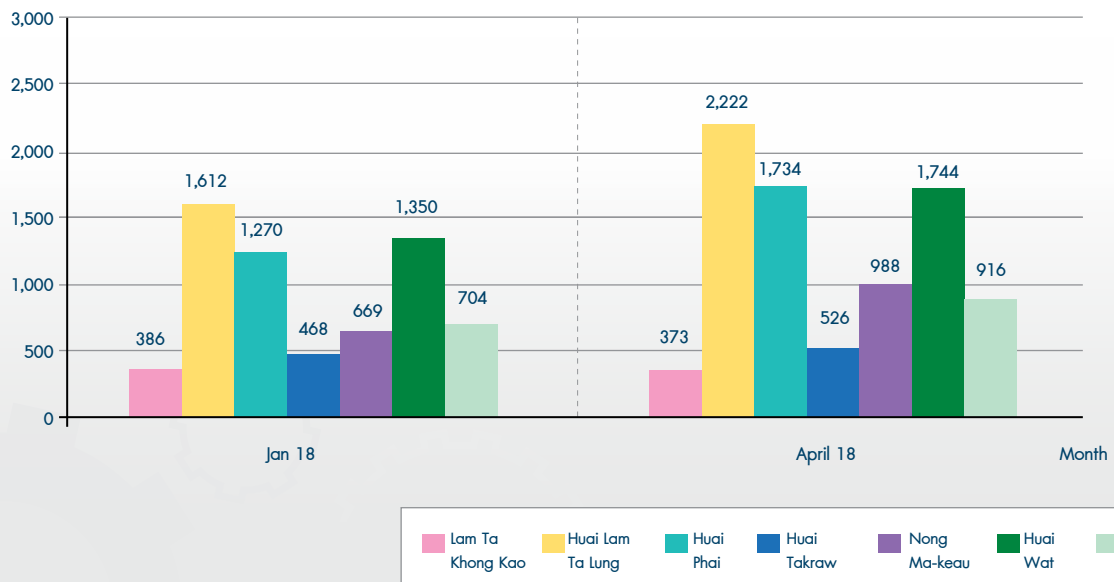
## The result of monitoring of Water Temperature from January - June 2018

Water Temperature (Celsius)



## The result of monitoring of Electricity Conductivity (EC) from January - June 2018

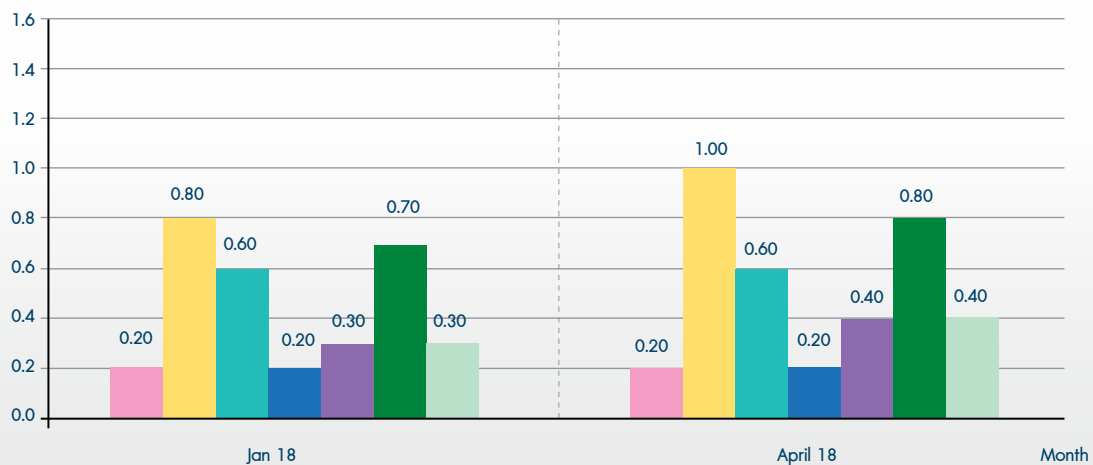
Electricity Conductivity (EC) (MicroMos/CM)





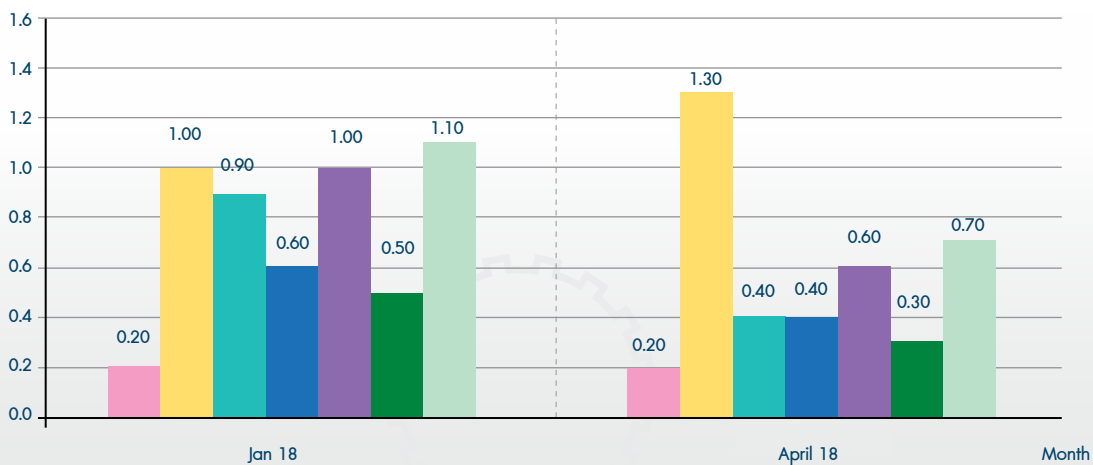
## The result of monitoring of Water Salinity from January - June 2018

Water Salinity



## The result of monitoring of Water Transparency from January - June 2018

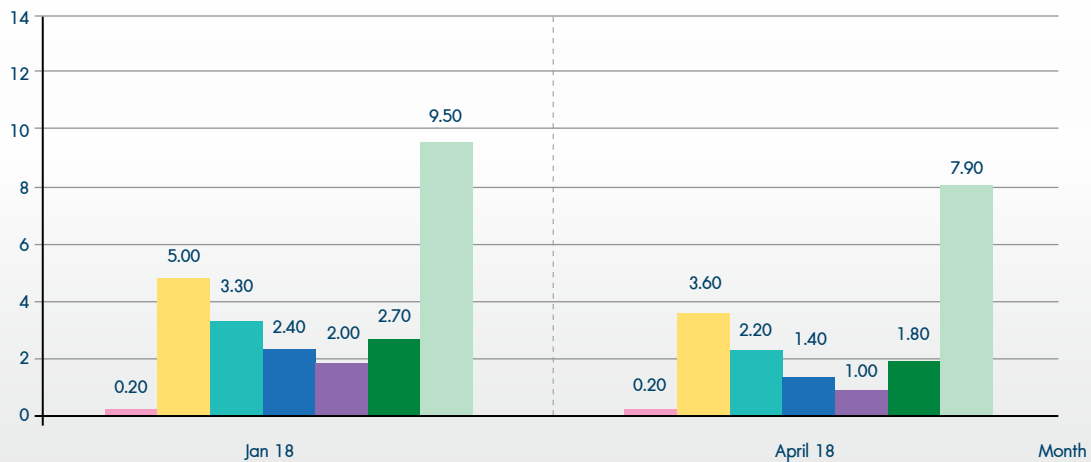
Water Transparency (Metre)





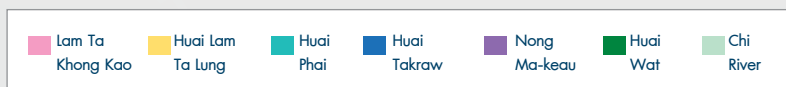
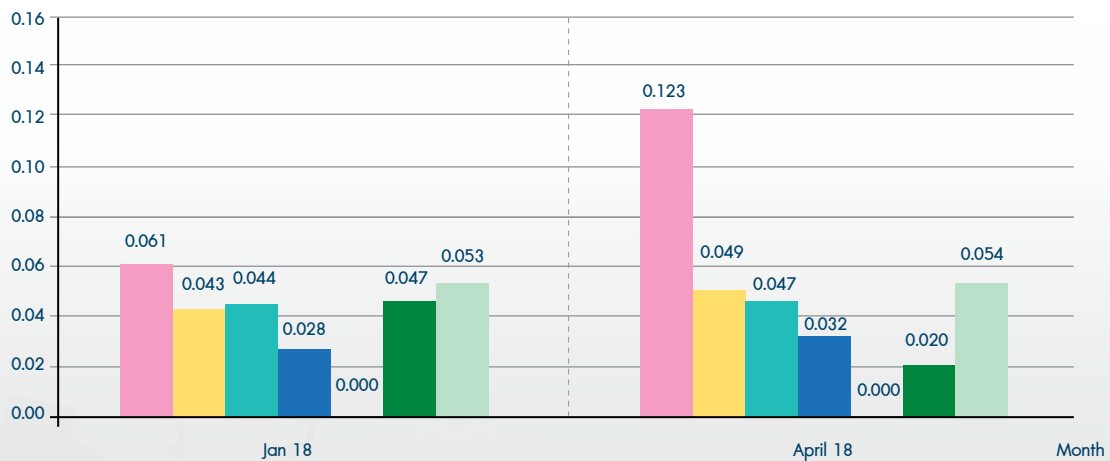
## The result of monitoring of Depth Measurement from January - June 2018

Depth Measurement



## The measurement of Velocity of Current from January - June 2018

Velocity of Current (Metre/Seconds)

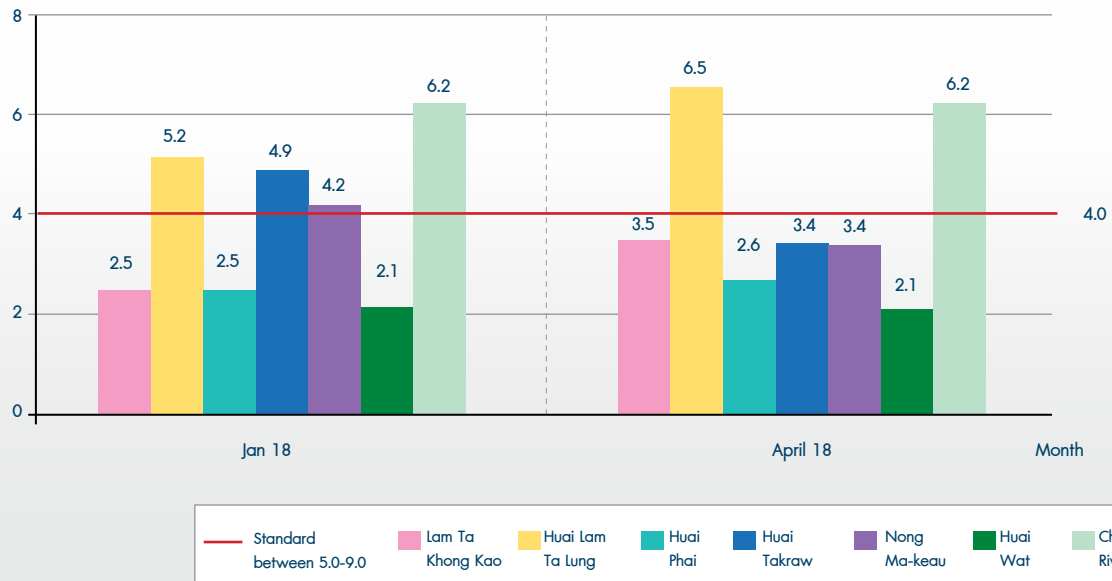






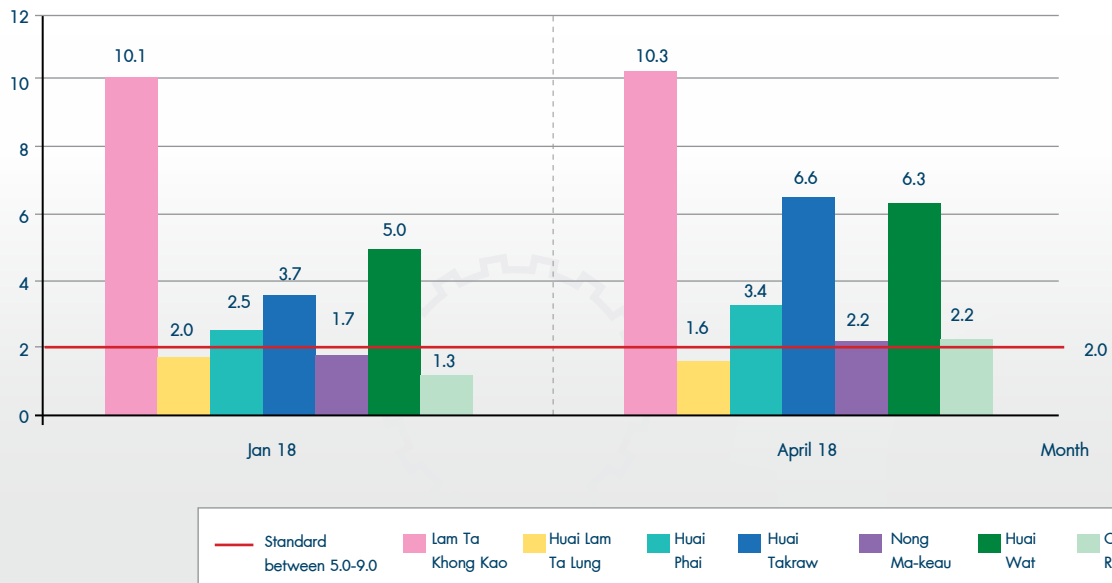
## The result of monitoring of Dissolved Oxygen (DO) from January - June 2018

Dissolved Oxygen (DO) (Miligram/Liter)



## The result of monitoring of Biochemical Oxygen Demand (BOD) from January - June 2018

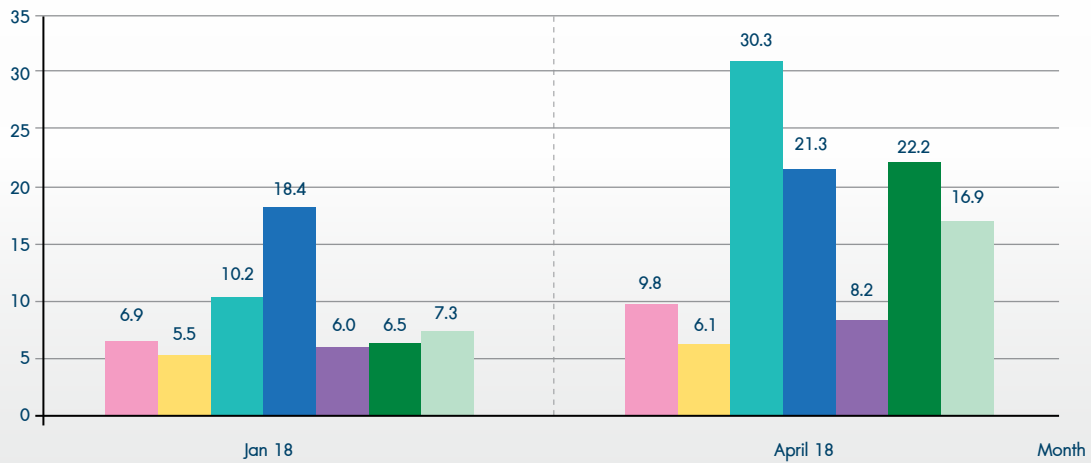
Biochemical Oxygen Demand (BOD) (Miligram/Liters)





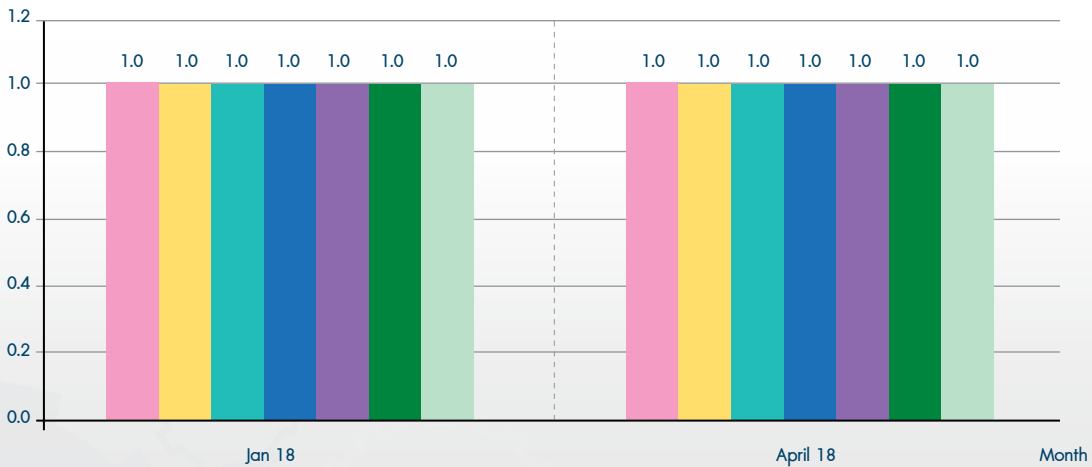
## The result of monitoring of Total Suspended Solids from January - June 2018

Total Suspended Solids (Miligram/Liter)



## The result of monitoring of Oil & Grease from January - June 2018

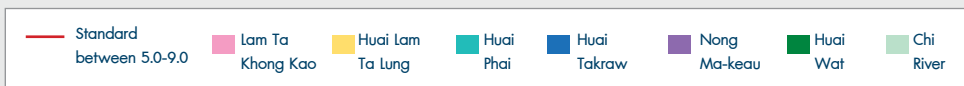
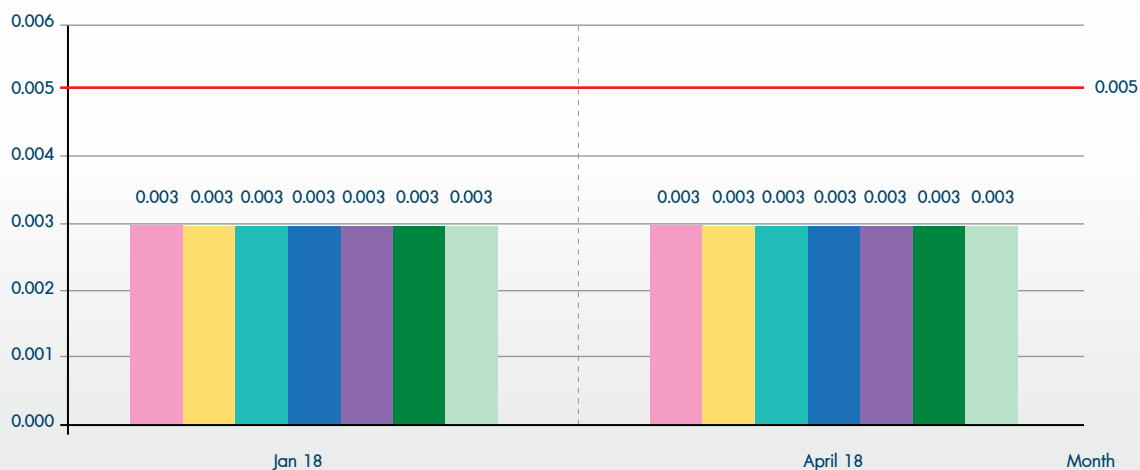
Oil & Grease (Miligram/Liter)





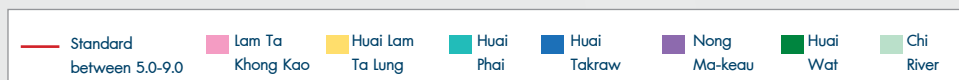
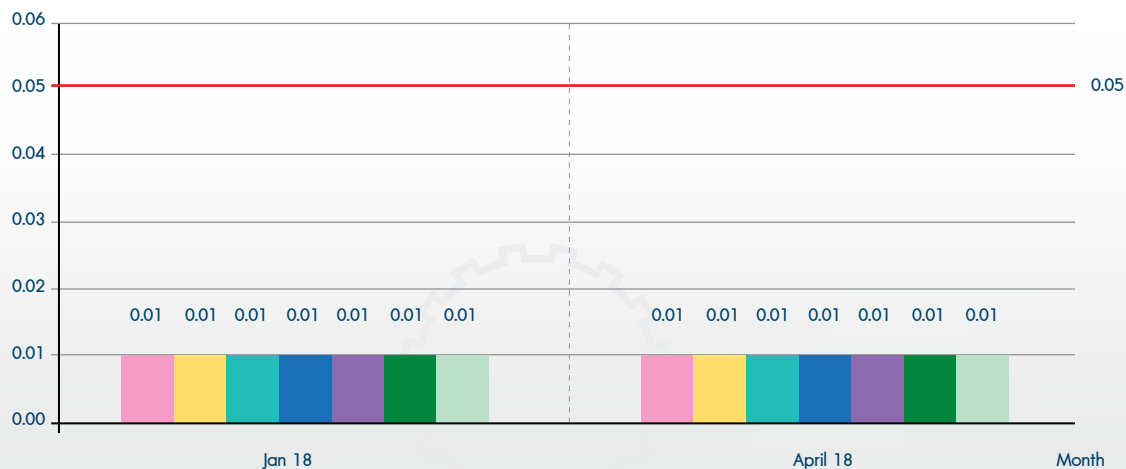
## The monitoring of Cd in Water from January - June 2018

Cd in Water (Miligram/Liter)



## The result of monitoring of Pb in Water from January - June 2018

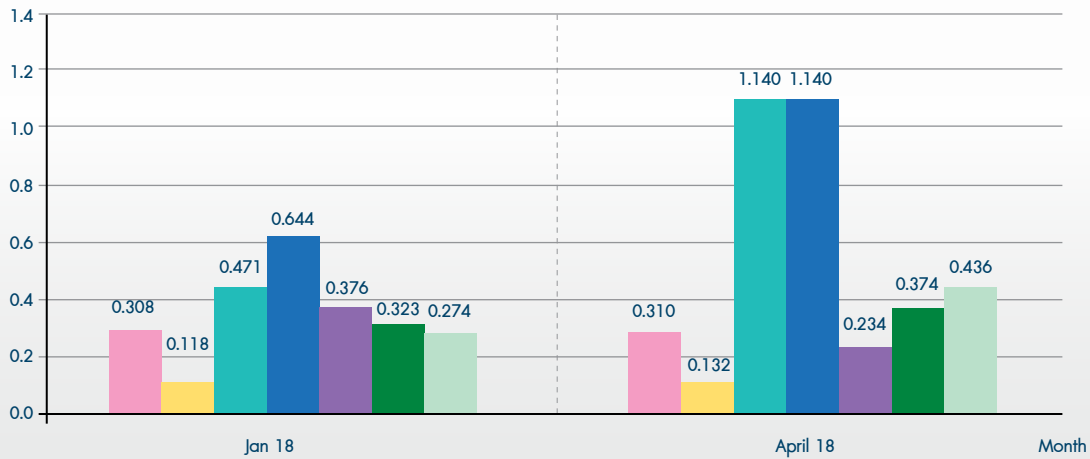
Pb in Water (Miligram/Liter)





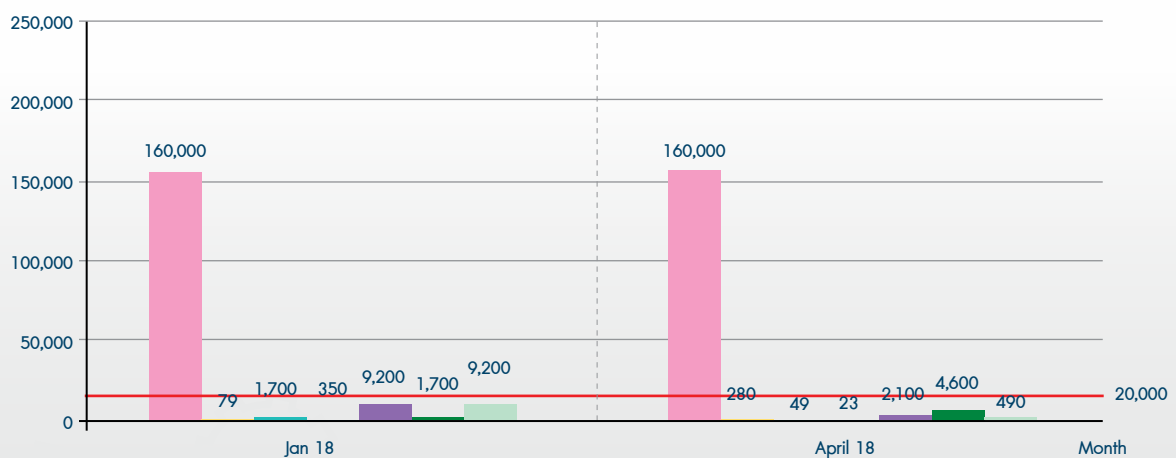
## The result of monitoring of Fe in Water from January - June 2018

Fe in Water (Miligram/Liter)



## The result of monitoring of Total Coliform Bacteria from January - June 2018

Total Coliform Bacteria (MPN/100 Milliliter)



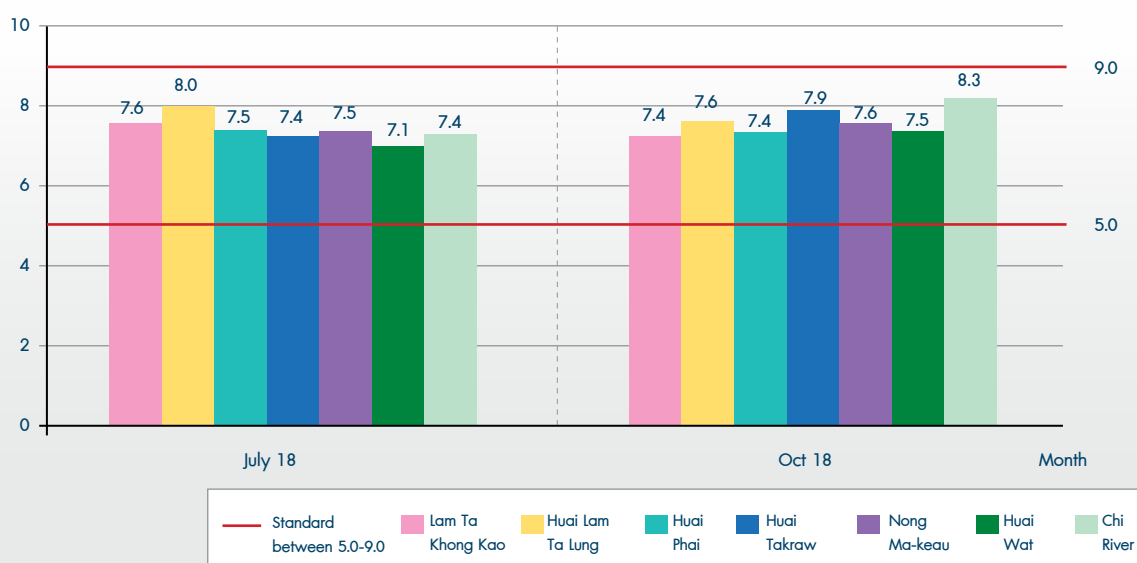
The monitoring of surface water quality was conducted at 7 areas, which were the Lamtaklong Kao river, Huai Lamtaklueng brook, Huai Phai brook, Huai Takhro brook, Nong Makhua pond, Huai Wa brook, and the

Chi River between from July-December 2018 between 16-20 July 2018 and 29-31 October 2018. The details are as follows:



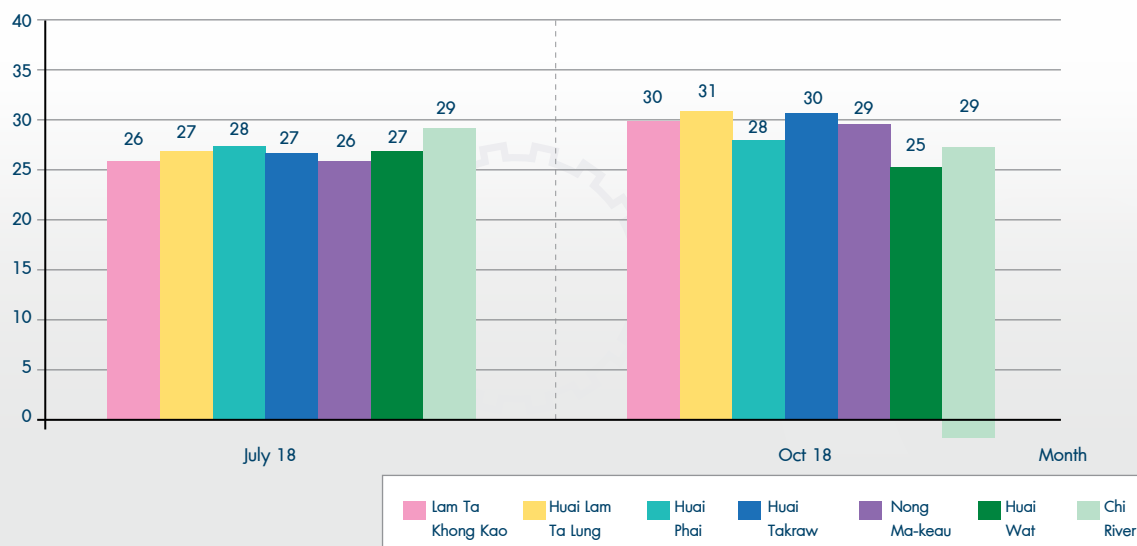
## The result of monitoring of Positive Potential of the Hydrogen (pH) from July - December 2018

Positive Potential of the Hydrogen (pH)



## The result of monitoring of Water Temperature from July - December 2018

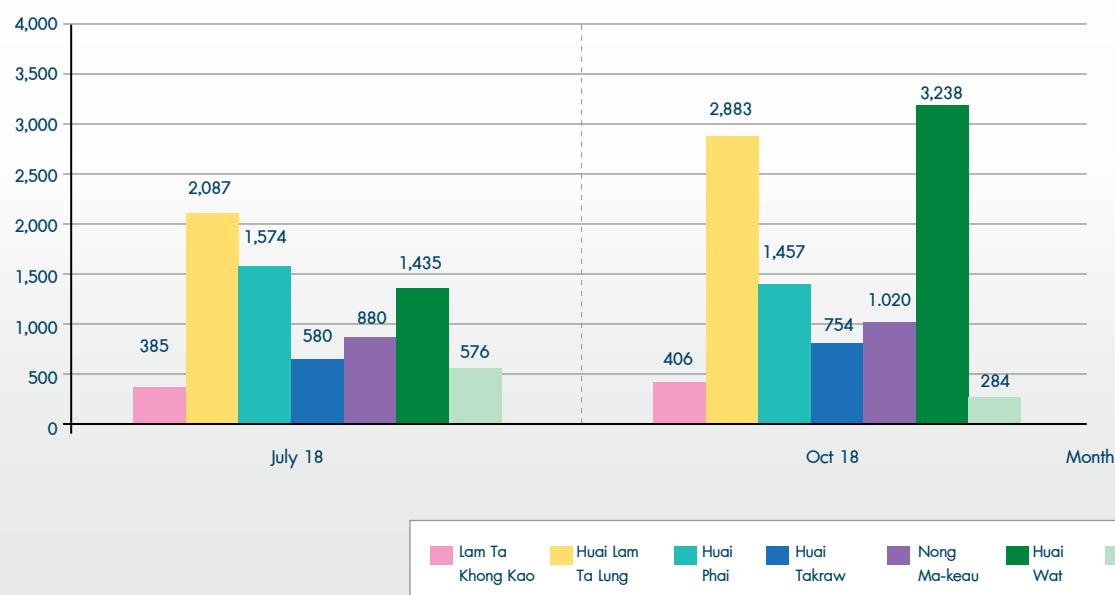
Water Temperature (Celsius)





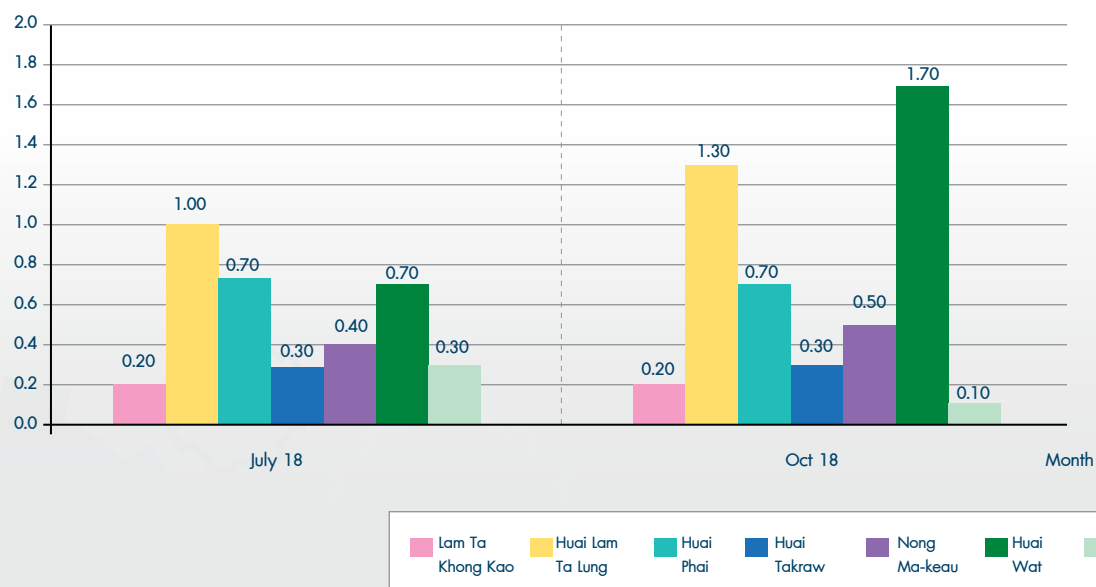
## The result of monitoring of Electricity Conductivity (EC) from July - December 2018

Electricity Conductivity (EC)



## The result of monitoring of Water Salinity from July - December 2018

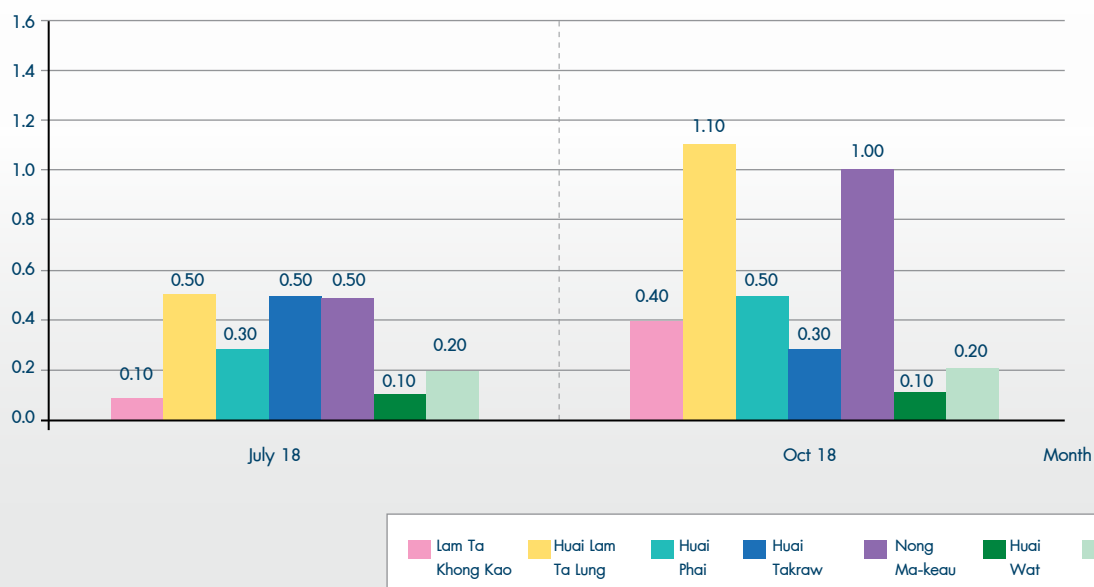
Water Salinity





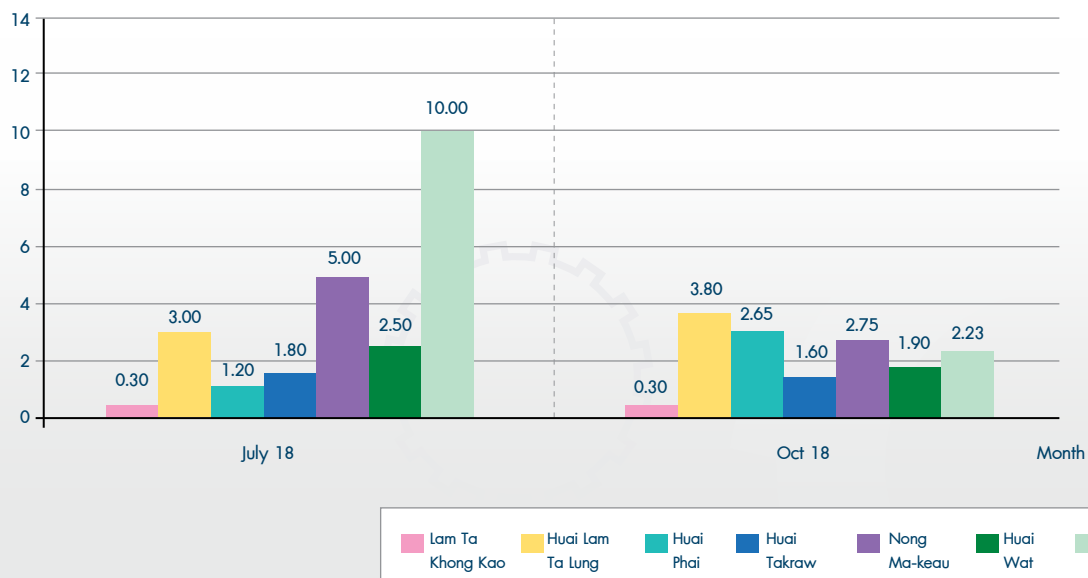
## The result of monitoring of Water Transparency from July - December 2018

Water Transparency (Metre)



## The result of monitoring of Depth Measurement from July - December 2018

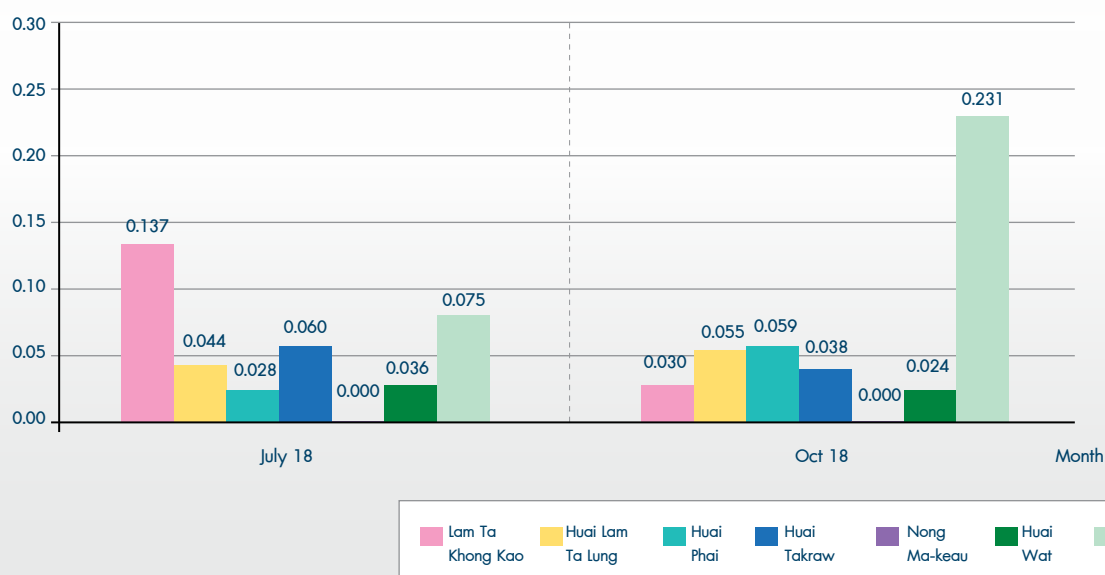
Depth Measurement (Metre)





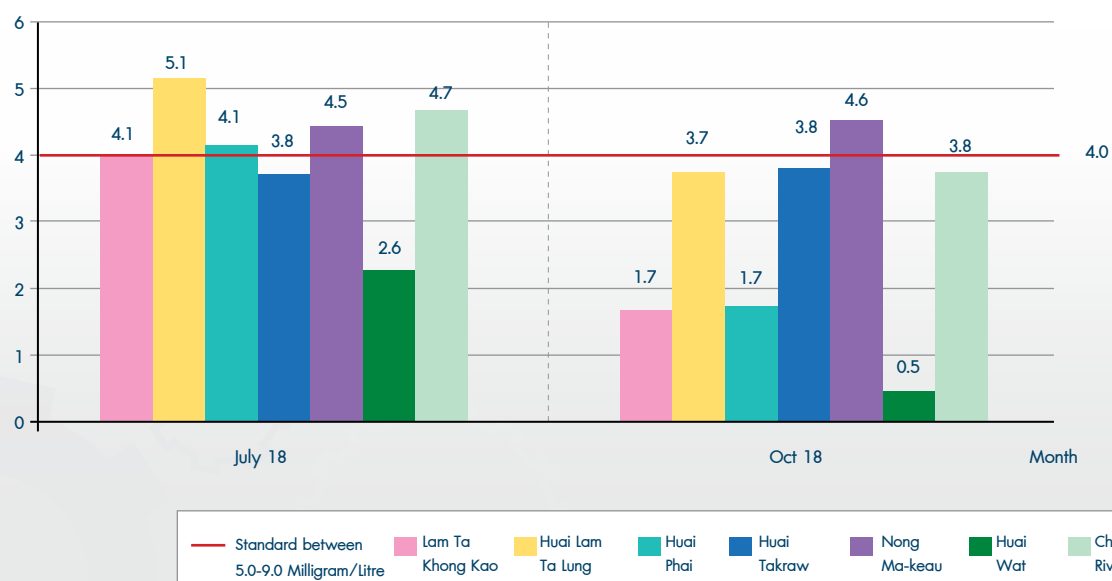
## The measurement of Velocity of Current from July - December 2018

Velocity of Current (Metre/Seconds)



## The result of monitoring of Dissolved Oxygen (DO) from July - December 2018

Dissolved Oxygen (DO) (Milligram/Litre)

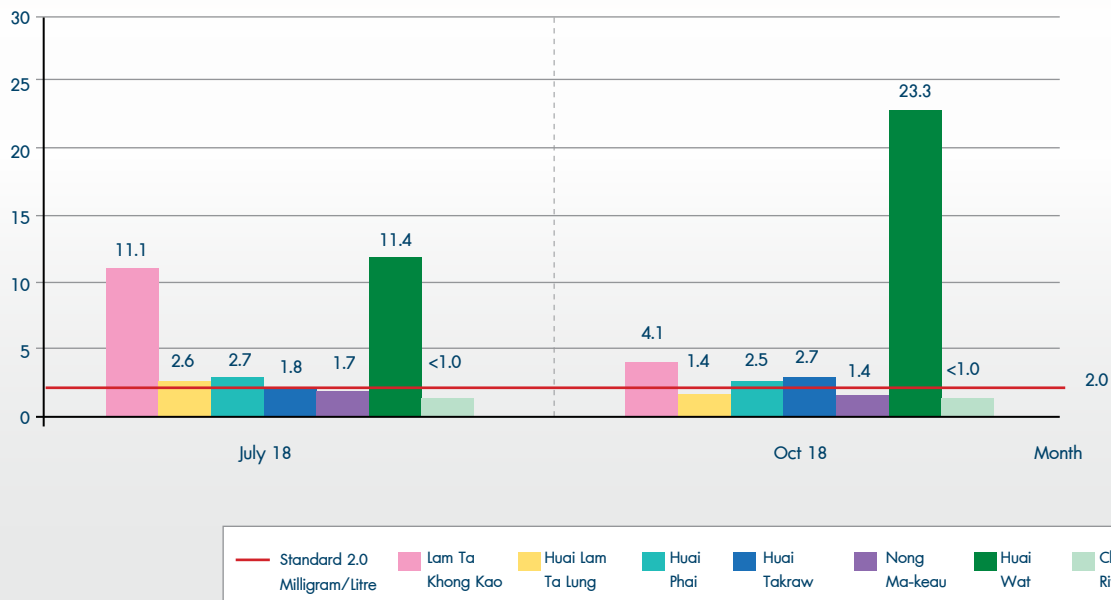






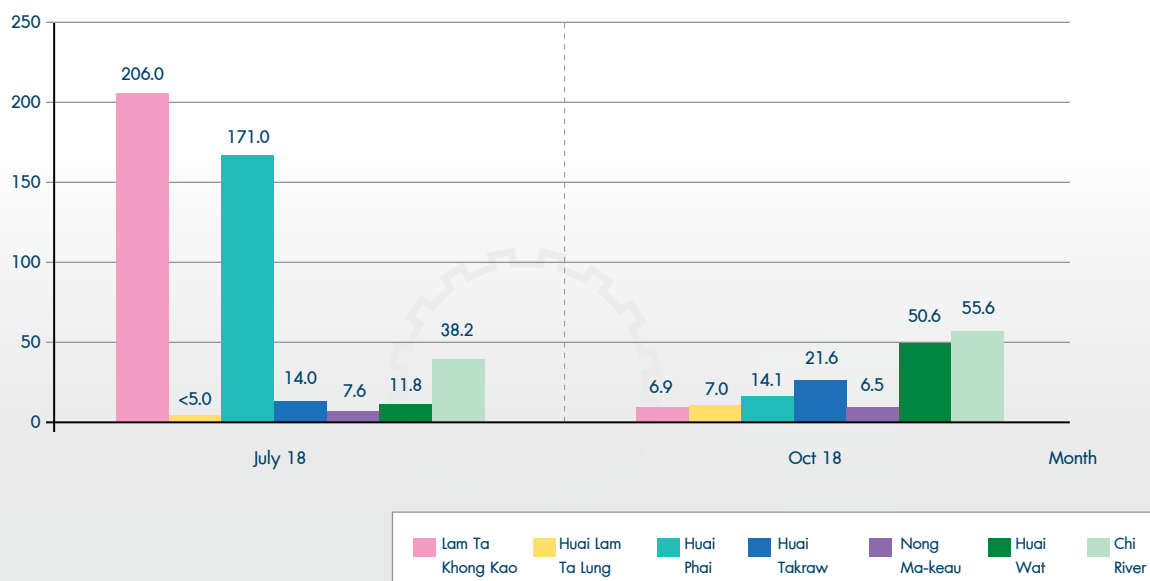
## The result of monitoring of Biochemical Oxygen Demand (BOD) from July - December 2018

Biochemical Oxygen Demand (BOD) (Milligram/Litre)



## The result of monitoring of Total Suspended Solids from July - December 2018

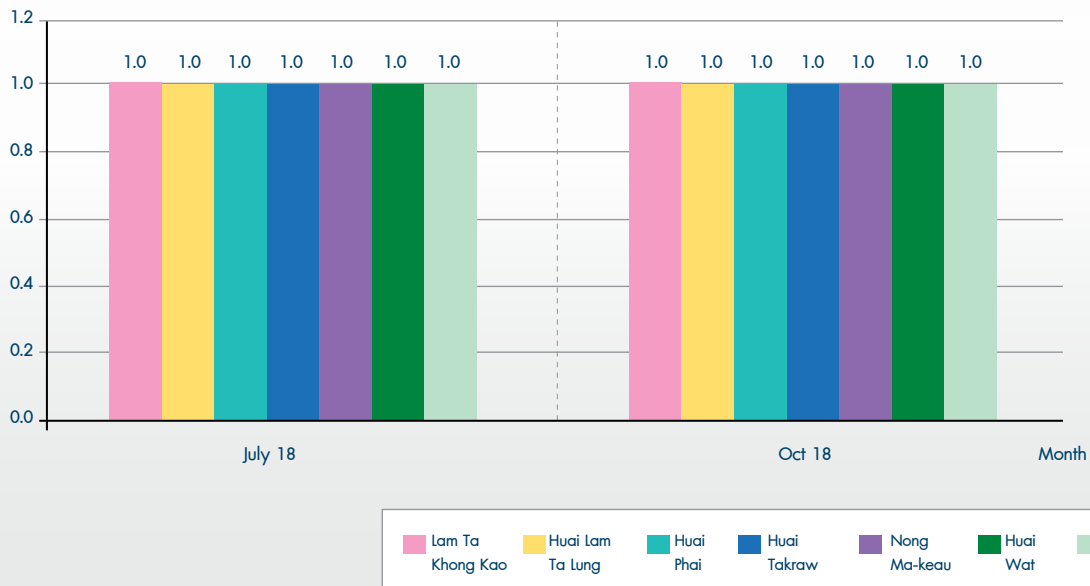
Total Suspended Solids (Milligram/Litre)





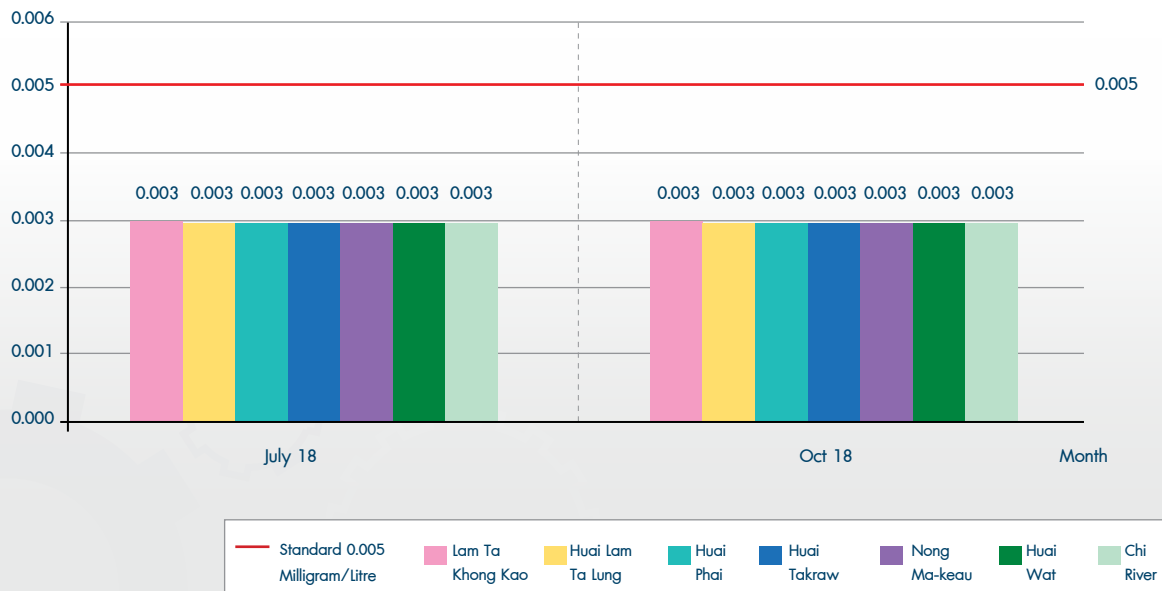
## The result of monitoring of Oil & Grease from July - December 2018

Oil & Grease (Milligram/Litre)



## The monitoring of Cd in Water from July - December 2018

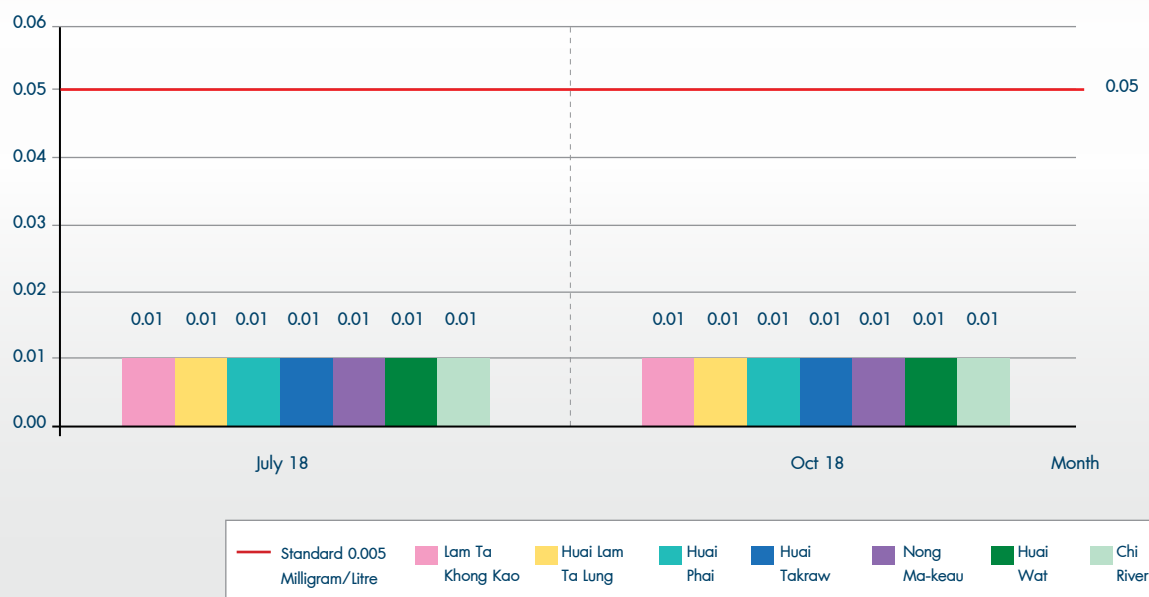
Cd in Water (Milligram/Litre)





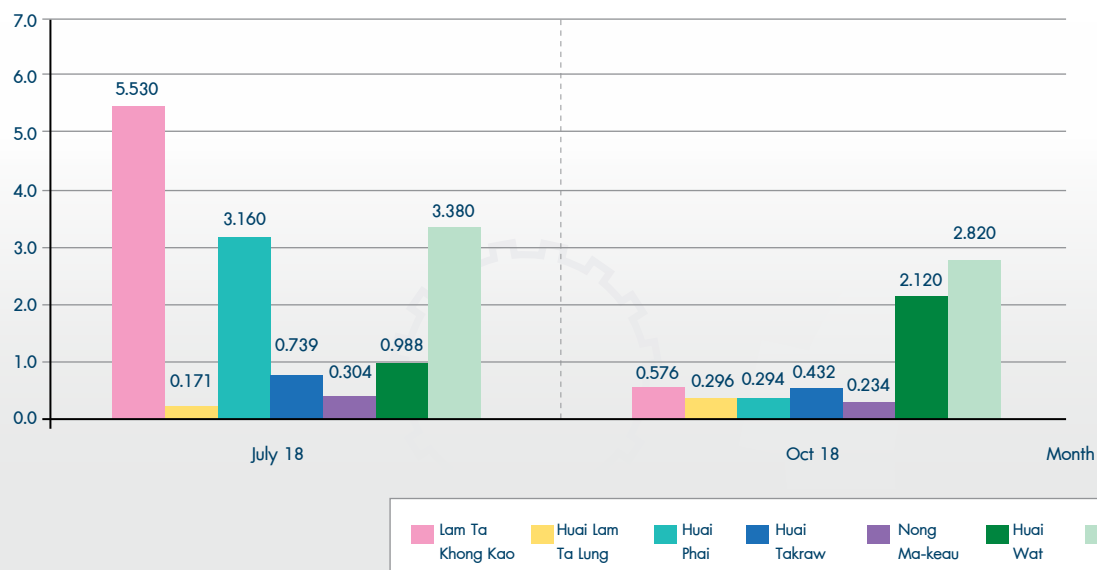
## The result of monitoring of Pb in Water from July - December 2018

Pb in Water (Milligram/Litre)



## The result of monitoring of Fe in Water from July - December 2018

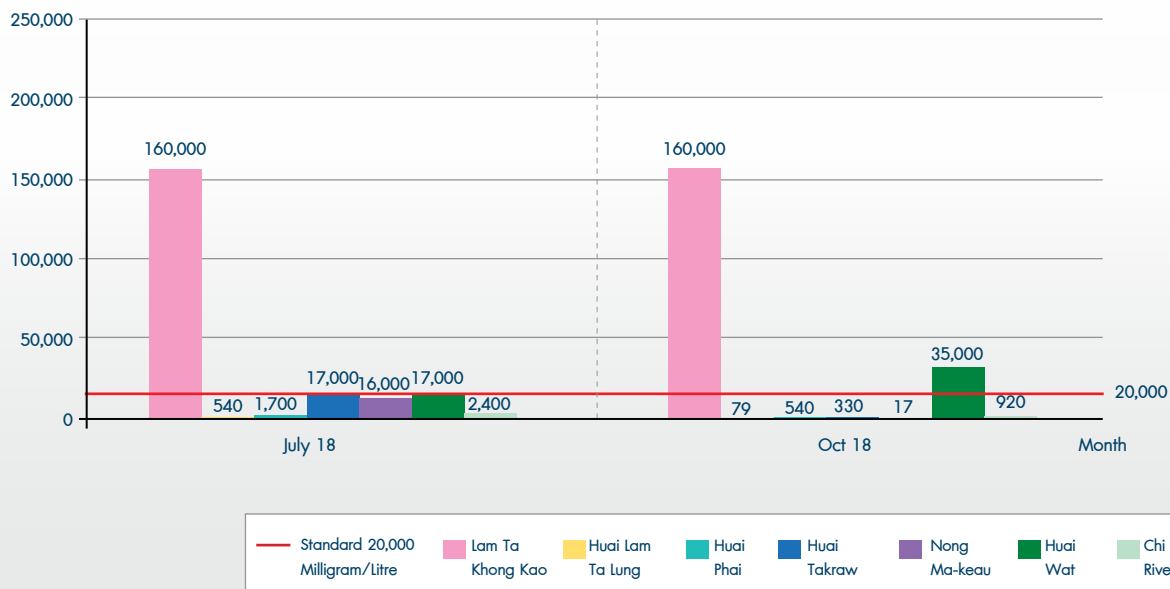
Fe in Water (Milligram/Litre)





## The result of monitoring of Total Coliform Bacteria from July - December 2018

Total Coliform Bacteria (MPN / 100 Milliliter)



### • The MRT Orange Line Project, Thailand Cultural Centre-Ramkhamhaeng 12 Section, Contact 1

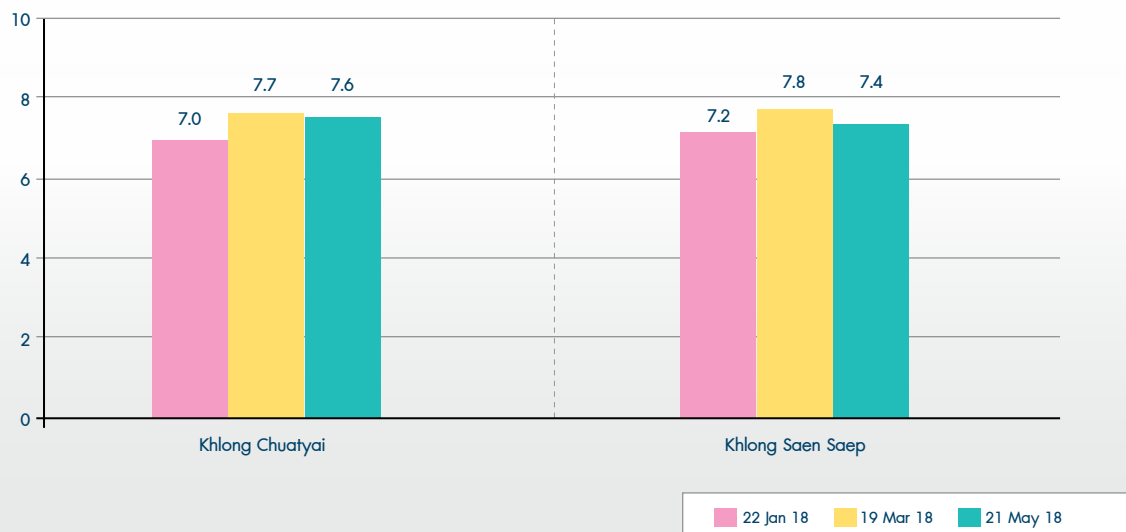
The monitoring of surface water quality was conducted at 2 areas, which were Khlong Chuatyai, and Khlong Sean Seab between 22 January 2018, 19 March 2018 and 21 May 2018. The results were checked against the Standard of Surface Water Quality Class 3 pursuant to the National Environment Board's Notification No. 8, B.E. 2537 (1994), issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535 (1992)), on Standard of Surface Water Quality (as shown in Table 3-3). It was found that the surface water quality of the 7

monitored areas was mostly of the values that were within the ranges specified in the Standard of Surface Water Quality Class 3, which is a water source where water used in certain activities is discharged but can still be used for drinking and consumption after general water treatment process and sterilization and for agriculture pursuant to the National Environment Board's Notification No.8 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535 (1992). The details are as follows:



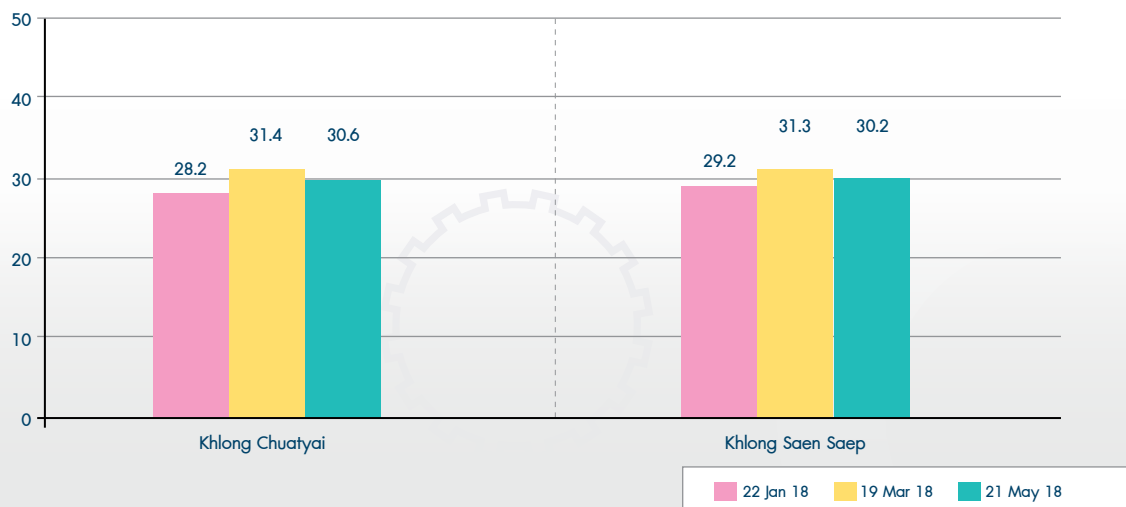
## The result of monitoring of Positive Potential of the Hydrogen (pH) from January - June 2018

Positive Potential of the Hydrogen (pH)



## The result of monitoring of Water Temperature from January - June 2018

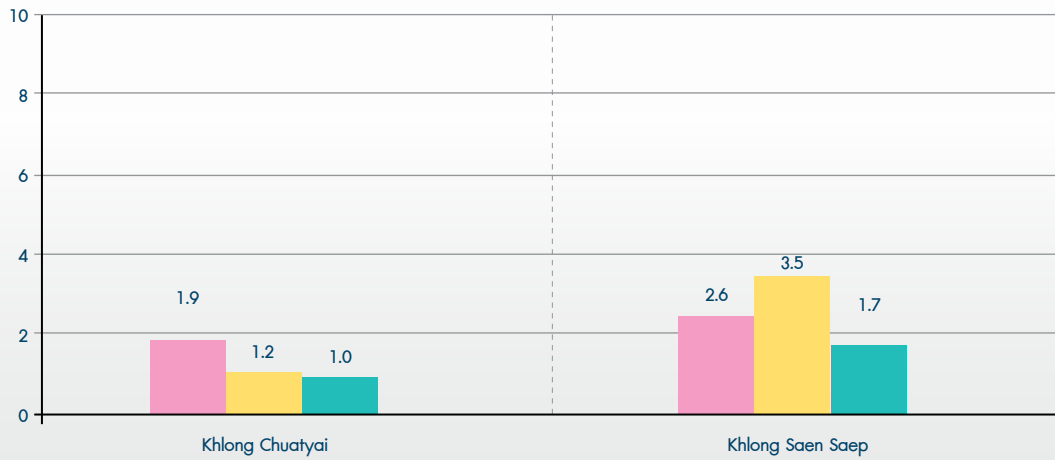
Water Temperature (Celsius)





## The result of monitoring of Dissolved Oxygen (DO) from January - June 2018

Dissolved Oxygen (DO) (Milligram/Liter)

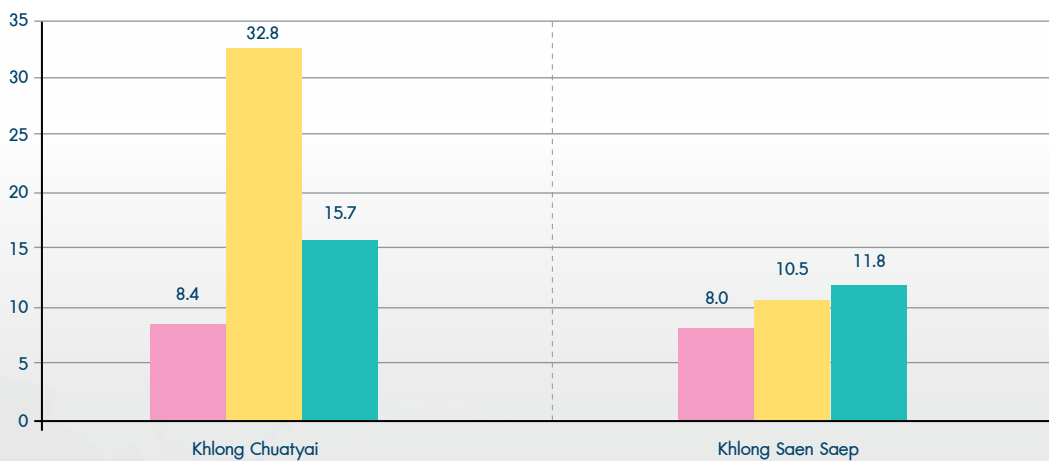


22 Jan 18 19 Mar 18 21 May 18



## The result of monitoring of Biochemical Oxygen Demand (BOD) from January - June 2018

Biochemical Oxygen Demand (BOD) (MPN / 100 Milliter)

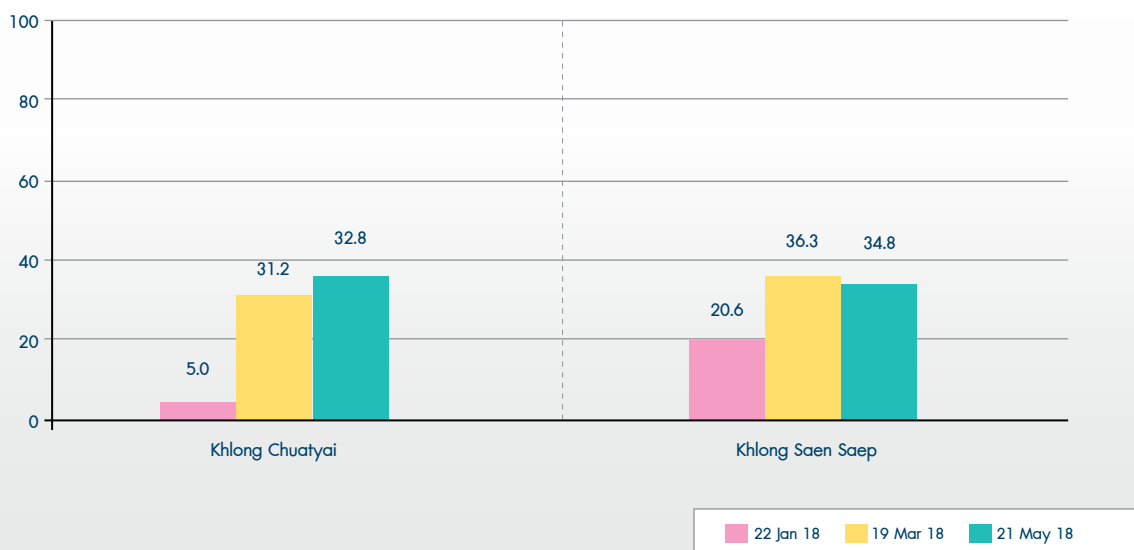


22 Jan 18 19 Mar 18 21 May 18



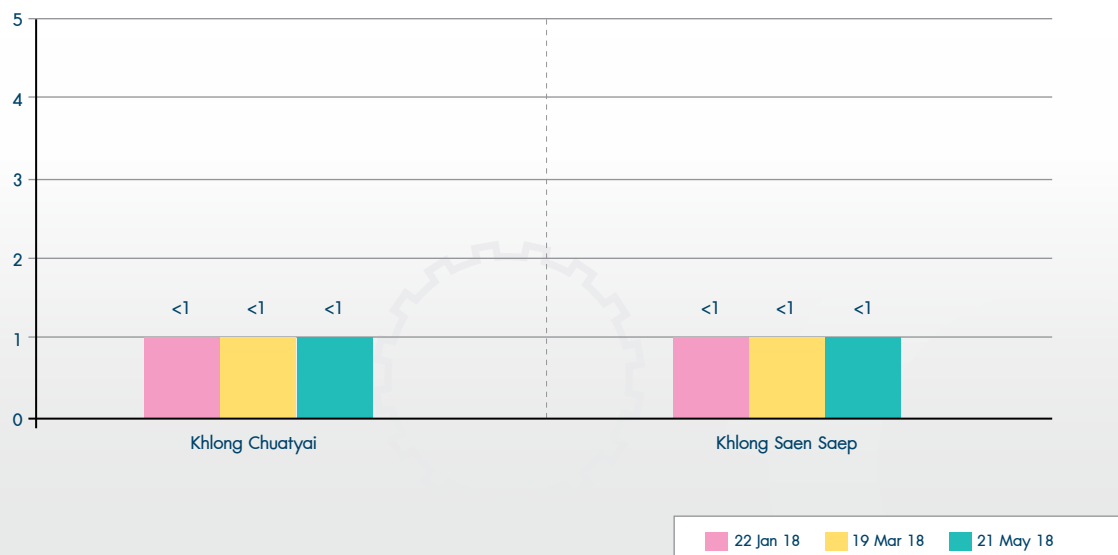
## The result of monitoring of Total Suspended Solids from January - June 2018

Total Suspended Solids (Milligram/Liter)



## The result of monitoring of Oil and Grease from January - June 2018

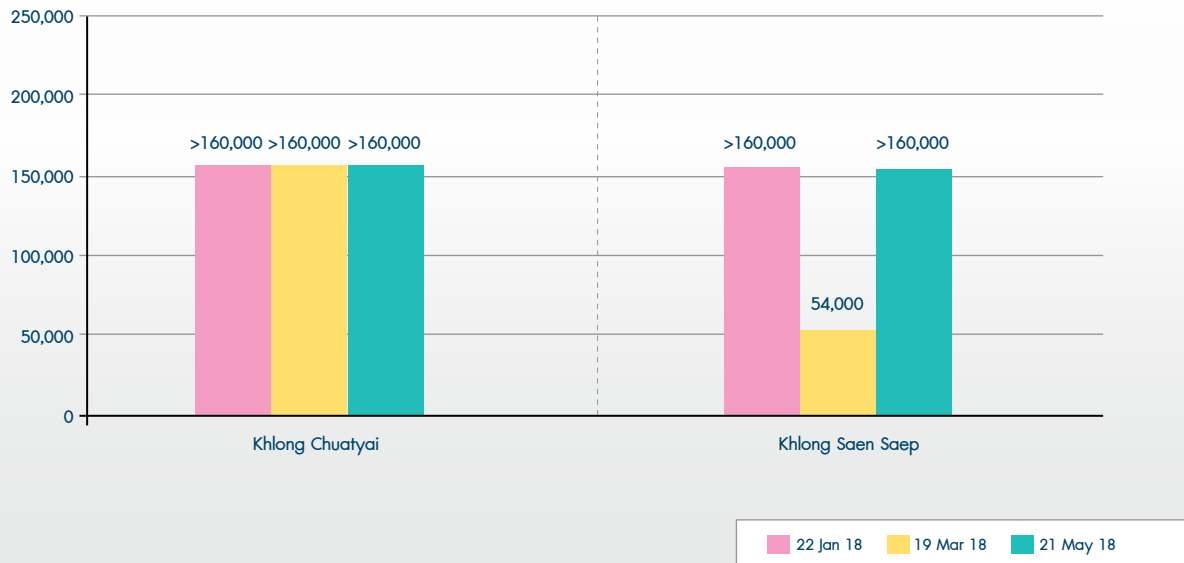
Oil & Grease (Milligram/Liter)





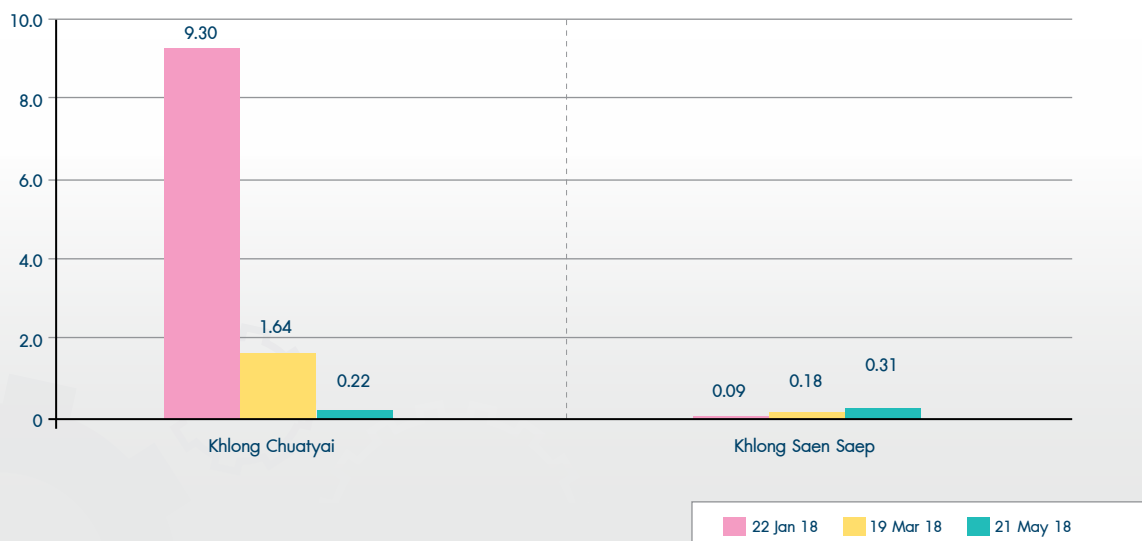
## The result of monitoring of Coliform Bacterial from January - June 2018

Coliform Bacterial (MPN / 100 Milligram)



## The result of monitoring of Nitrate in Water from January - June 2018

Nitrate in Water (Milligram / Liter)

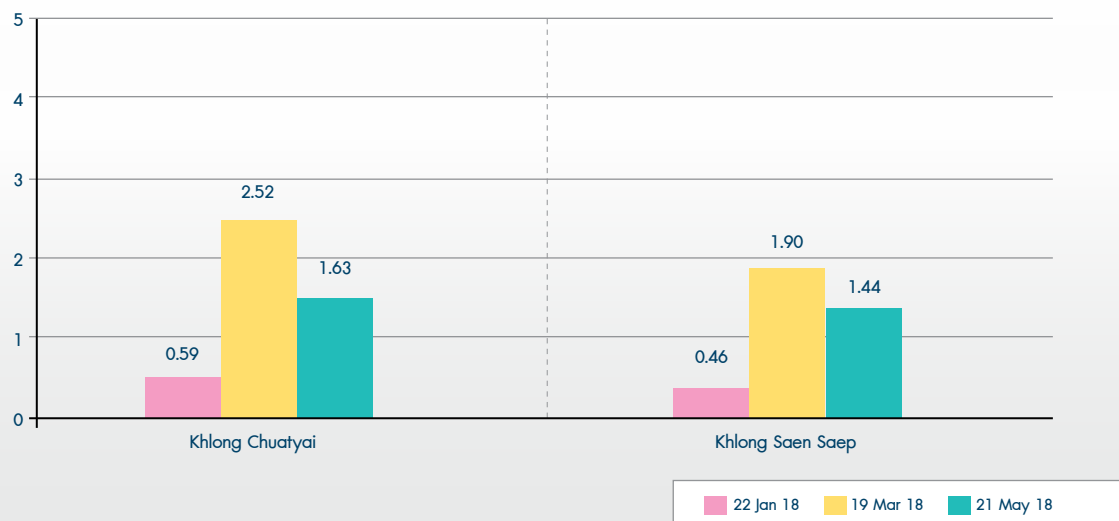






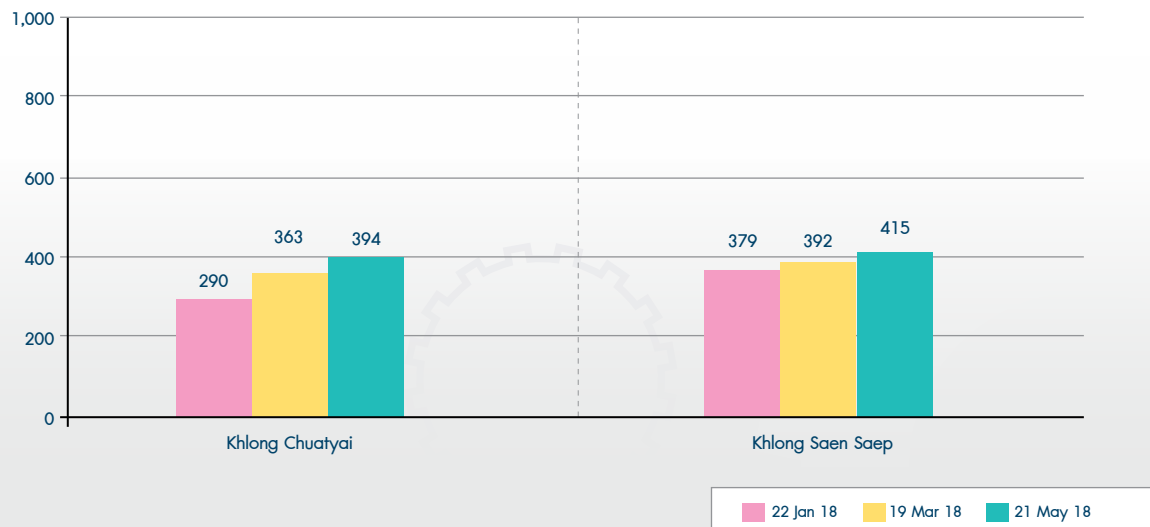
## The result of monitoring of Phosphate in Water from January - June 2018

Phosphate in Water (Milligram/Liter)



## The result of monitoring of Total Dissolved Solids (TDS) from January - June 2018

Total Dissolved Solids (TDS) (Milligram/Liter)



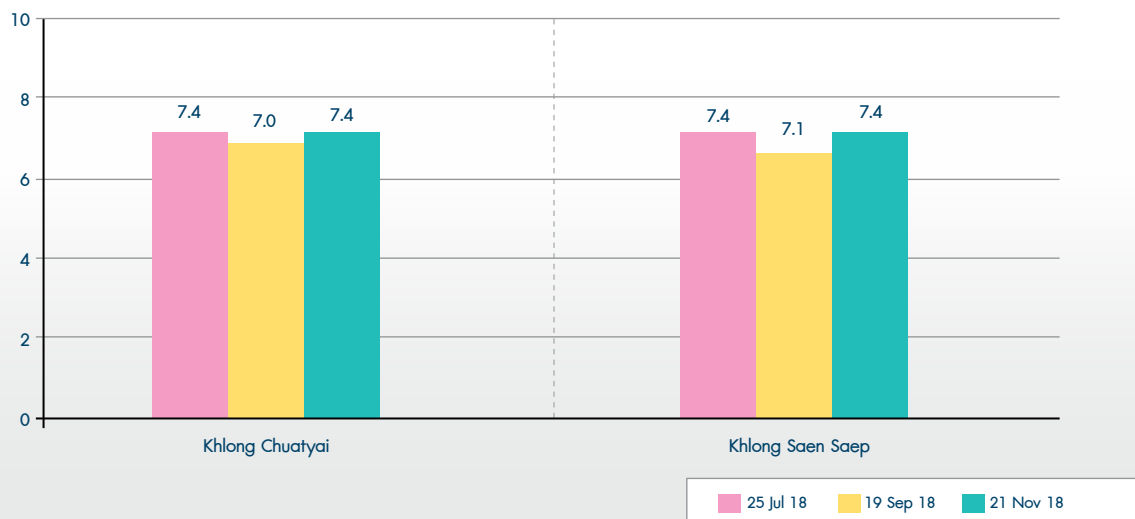
• **The MRT Orange Line Project, Thailand Cultural Centre-Ramkhamhaeng 12 Section, Contact 1**

The Monitoring of surface water quality was conducted at 2 areas, from July-December 2018 between 25 July 2018, 17 September 2018 and 19 November 2018. The details are as follow:



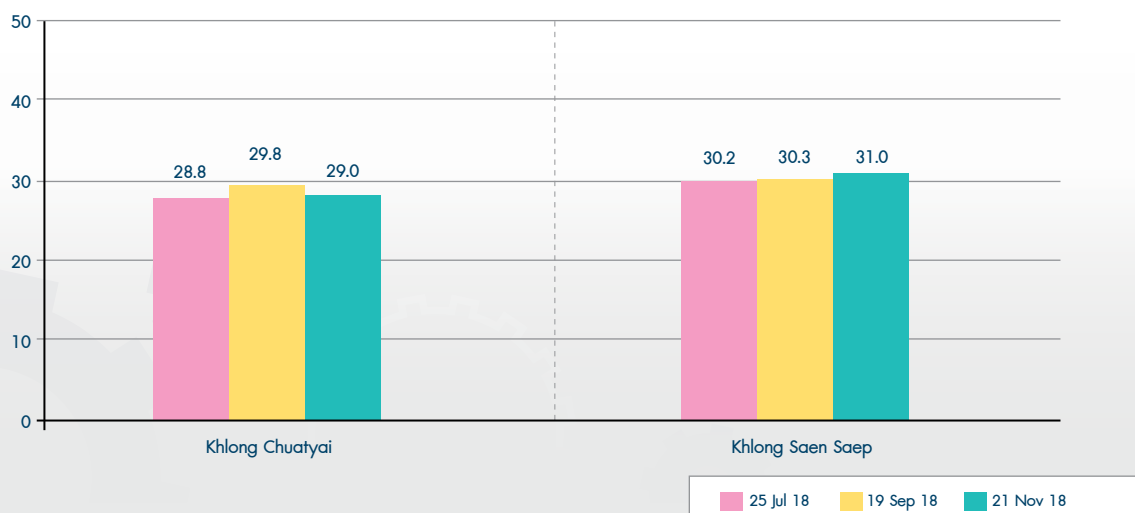
**The result of monitoring of Positive Potential of the Hydrogen (pH) from July - December 2018**

Positive Potential of the Hydrogen (pH)



**The result of monitoring of Water Temperature from July - December 2018**

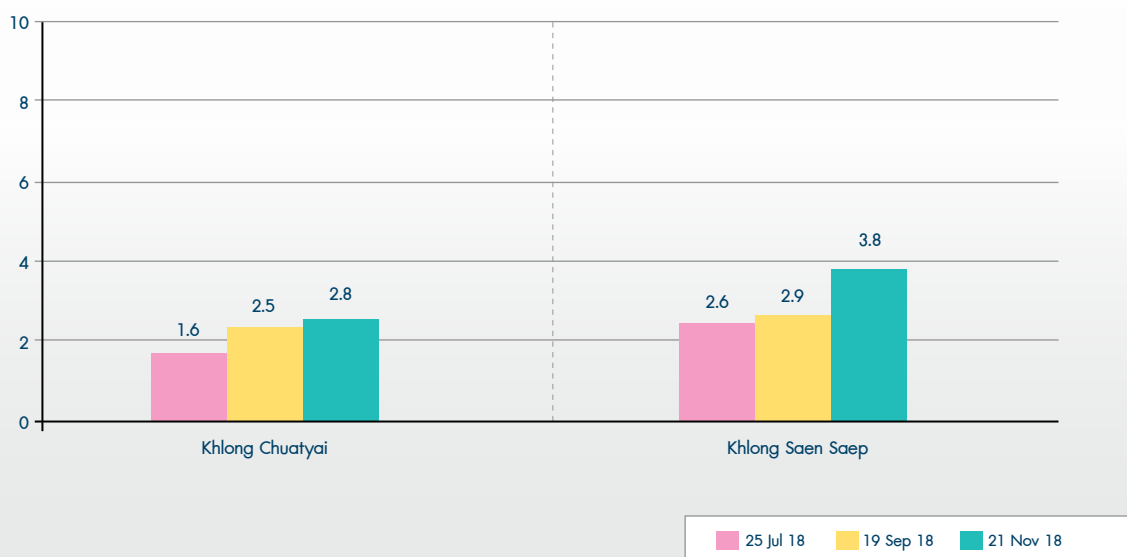
Water Temperature (Celsius)





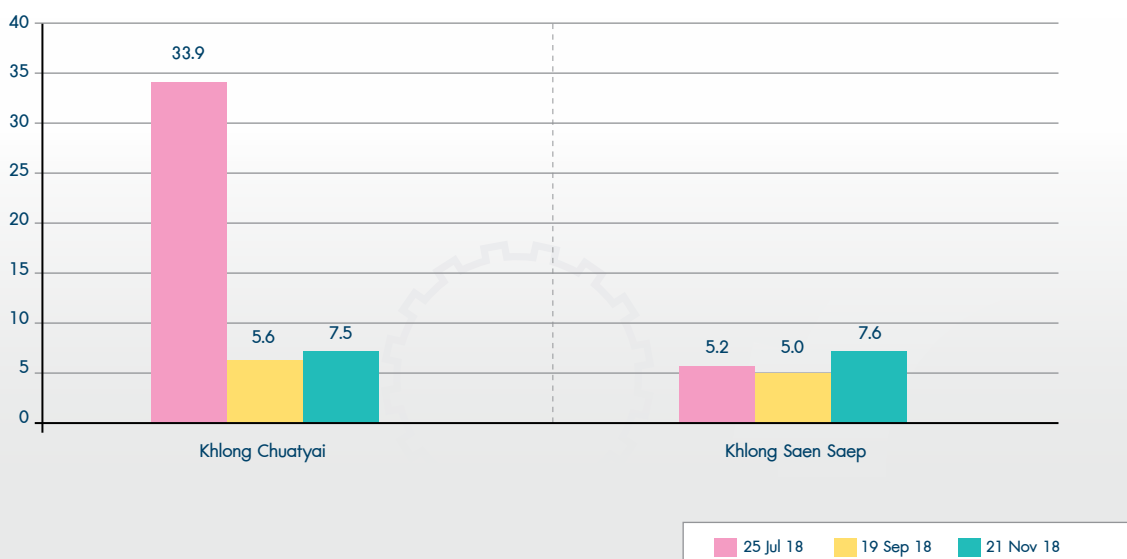
## The result of monitoring of Electricity Conductivity (EC) From July-December 2018

Electricity Conductivity (EC) (Milligram/Liter)



## The result of monitoring of Biochemical Oxygen Demand (BOD) from July - December 2018

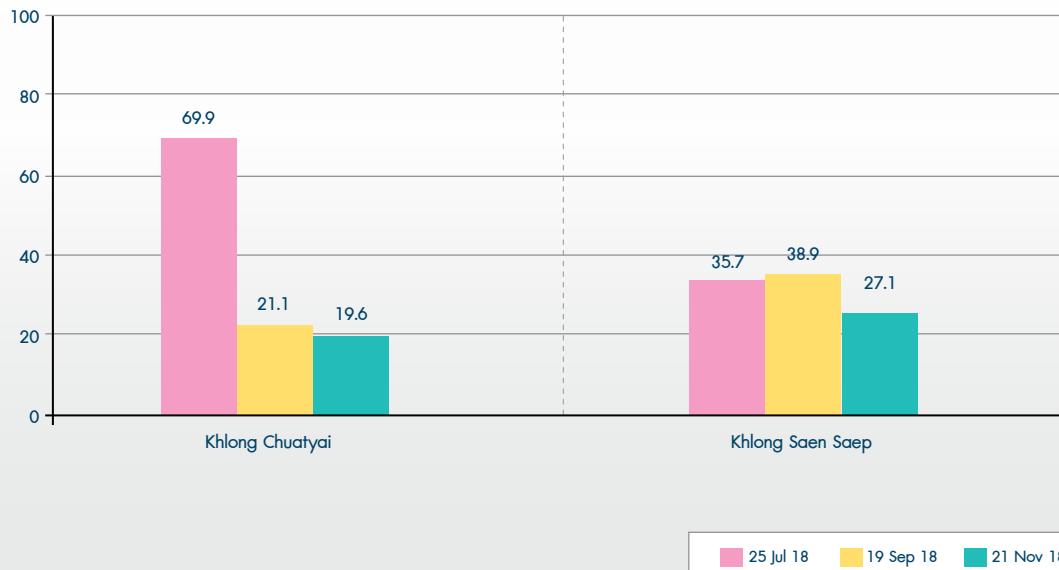
Biochemical Oxygen Demand (BOD) (Milligram/Liter)





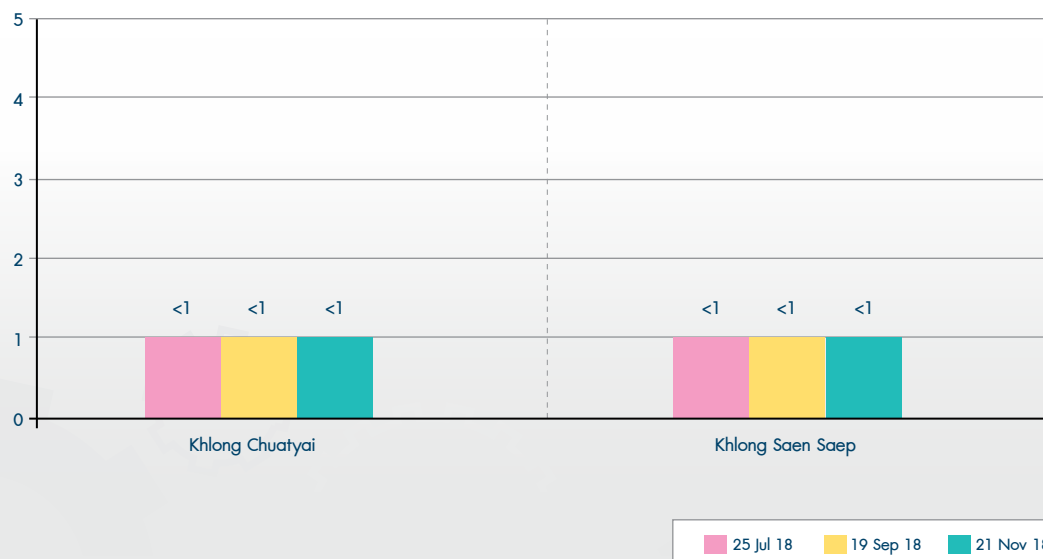
## The result of monitoring of Total Suspended Solids from July - December 2018

Total Suspended Solids (Milligram/Liter)



## The result of monitoring of Oil and Grease from July - December 2018

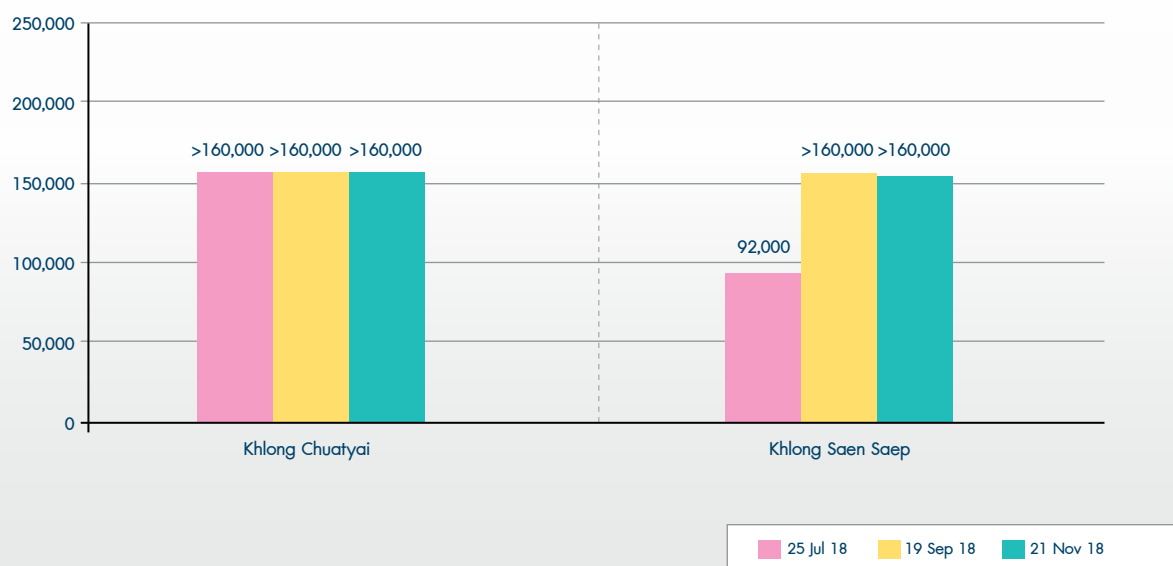
Oil & Grease (Milligram/Liter)





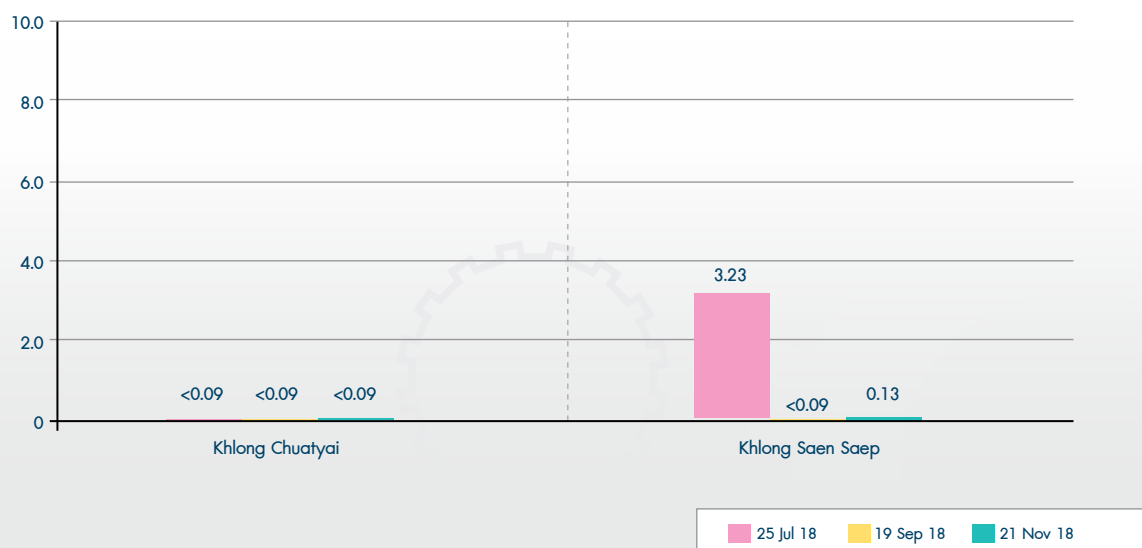
## The result of monitoring of Total Coliform Bacterial from July - December 2018

Total Coliform Bacterial (MPN / 100 Milligram)



## The result of monitoring of Nitrate in Water from July - December 2018

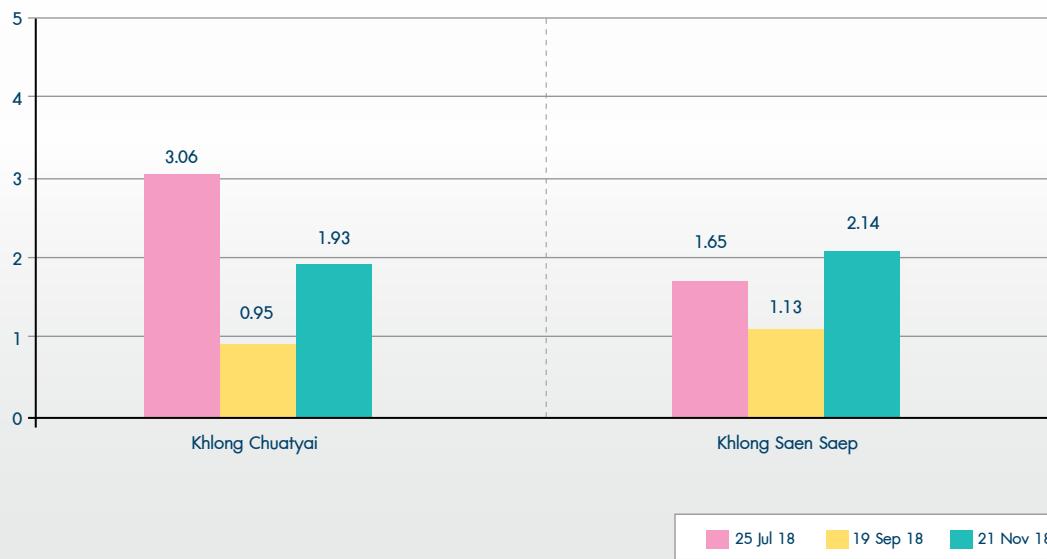
Nitrate in Water (Milligram/Liter)





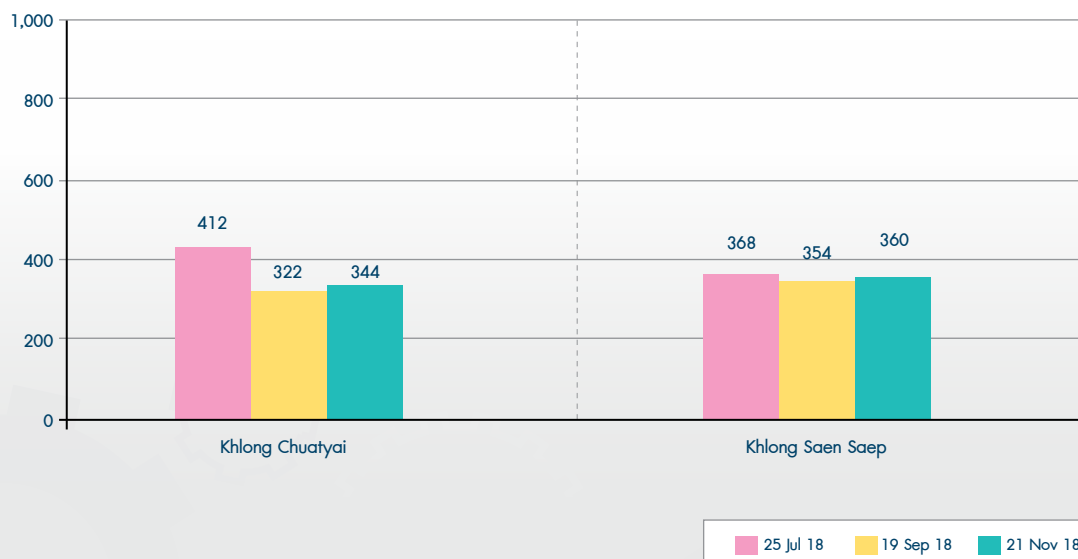
## The result of monitoring of P04 from July - December 2018

P04 (Milligram/Liter)



## The result of monitoring of Total Dissolved Solids (TDS) from July - December 2018

Total Dissolved Solids (TDS) (Milligram/Liter)



- The MRT Orange Line Project, Depot and Car Park Section, Contact 5

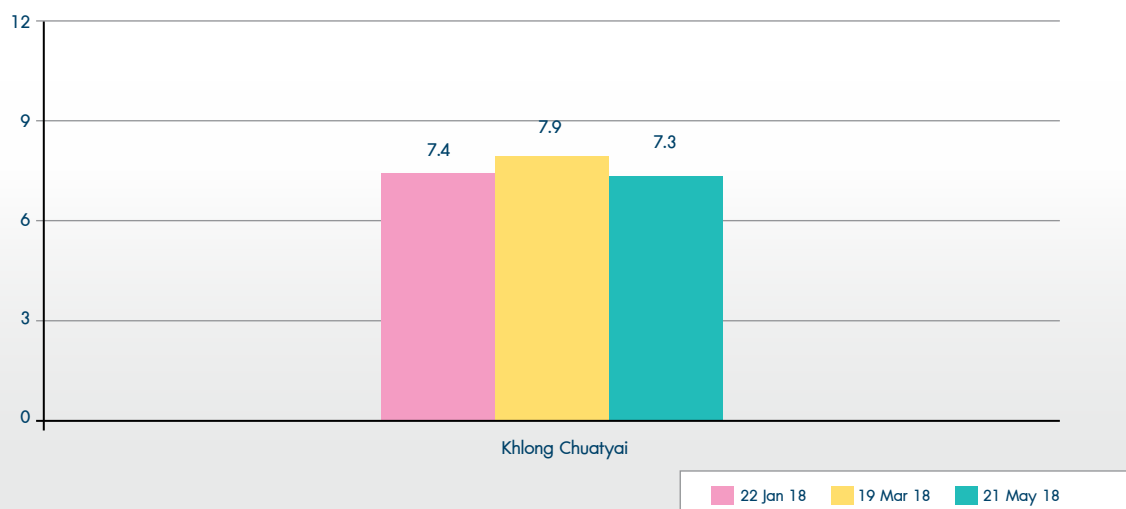
The monitoring of surface water quality was conducted at 1 area, which were Khlong Chuatyai between 22 January 2018, 19 March 2018 and 21 May 2018. The results were checked against the Standard of Surface Water Quality Class 3 pursuant to the National Environment Board's Notification No. 8, B.E. 2537 (1994), issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535 (1992)), on Standard of Surface Water Quality. It was found that the surface water quality of the 7 monitored areas was mostly of

the values that were within the ranges specified in the Standard of Surface Water Quality Class 3, which is a water source where water used in certain activities is discharged but can still be used for drinking and consumption after general water treatment process and sterilization and for agriculture pursuant to the National Environment Board's Notification No.8 issued under the Enhancement and Conservation of National Environmental Quality Act, B.E.2535 (1992). The details are as follows:



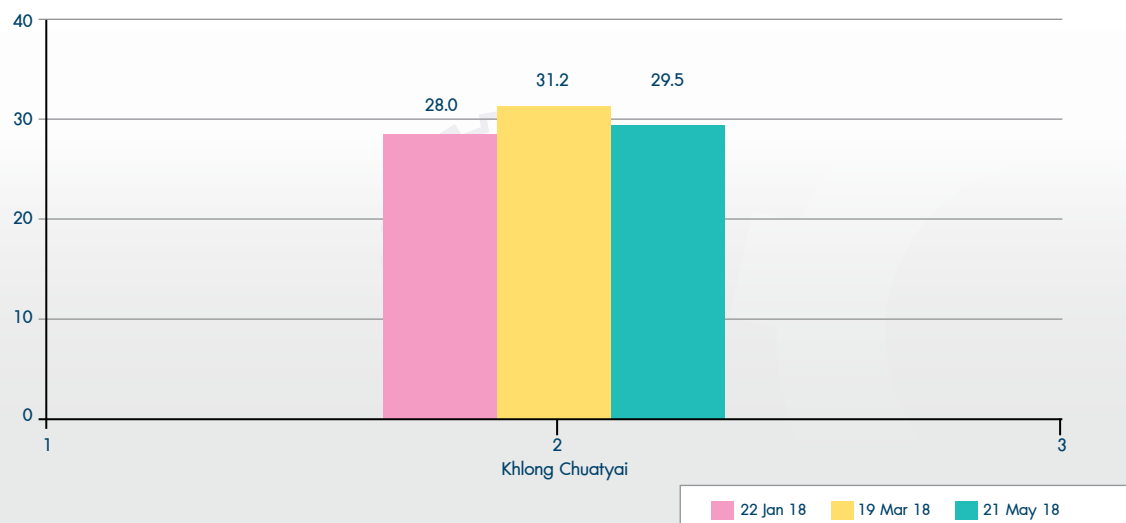
### The result of monitoring of Positive Potential of the Hydrogen (pH) from January - June 2018

Positive Potential of the Hydrogen (pH)



### The result of monitoring of Temperature in Water from January - June 2018

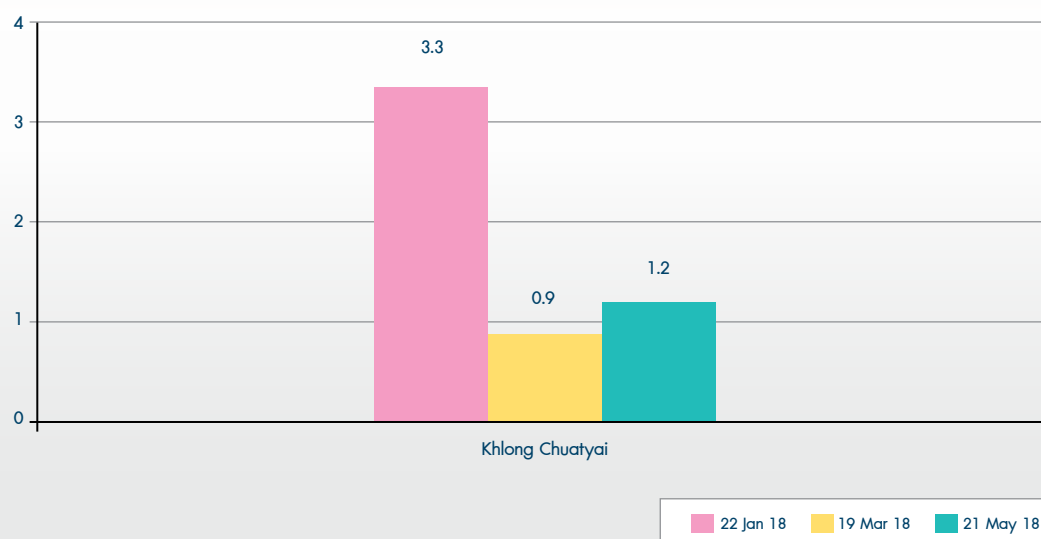
Temperature in Water (Celsius)





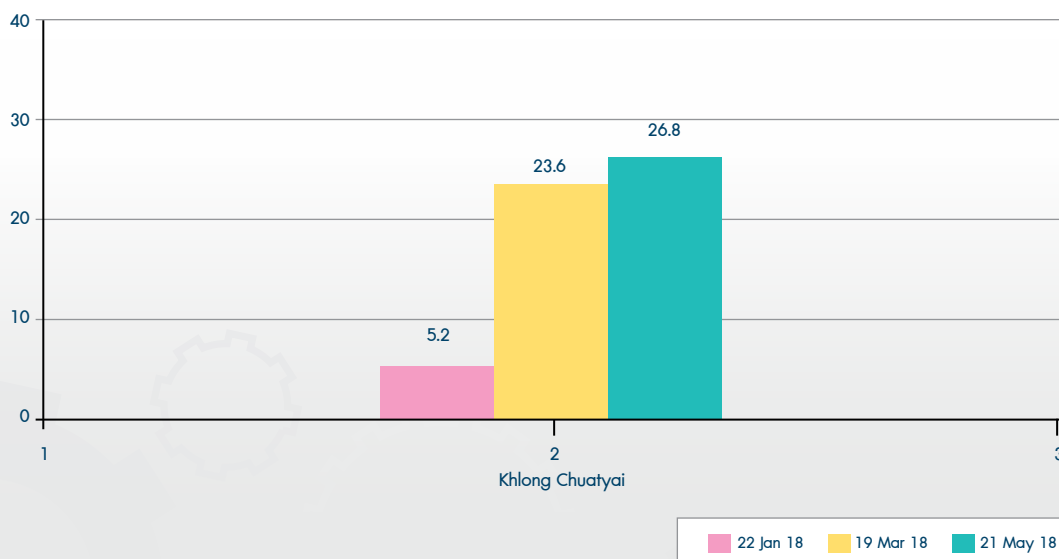
## The result of monitoring of Dissolved Oxygen (DO) from January - June 2018

Dissolved Oxygen (DO) (Milligram/Liter)



## The result of monitoring of Biochemical Oxygen Demand (BOD) from January - June 2018

Biochemical Oxygen Demand (BOD) (Milligram/Liter)

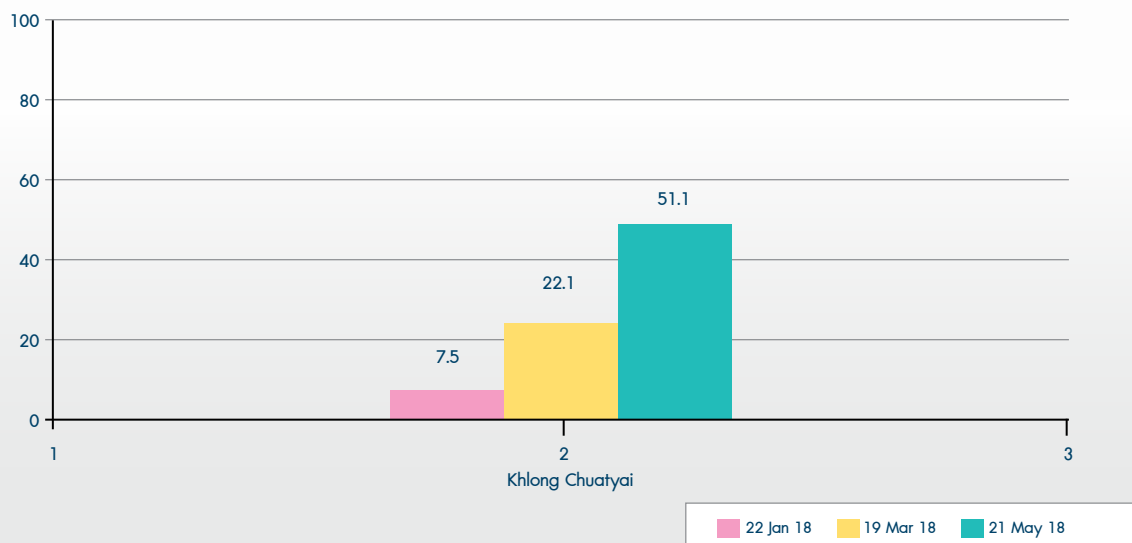






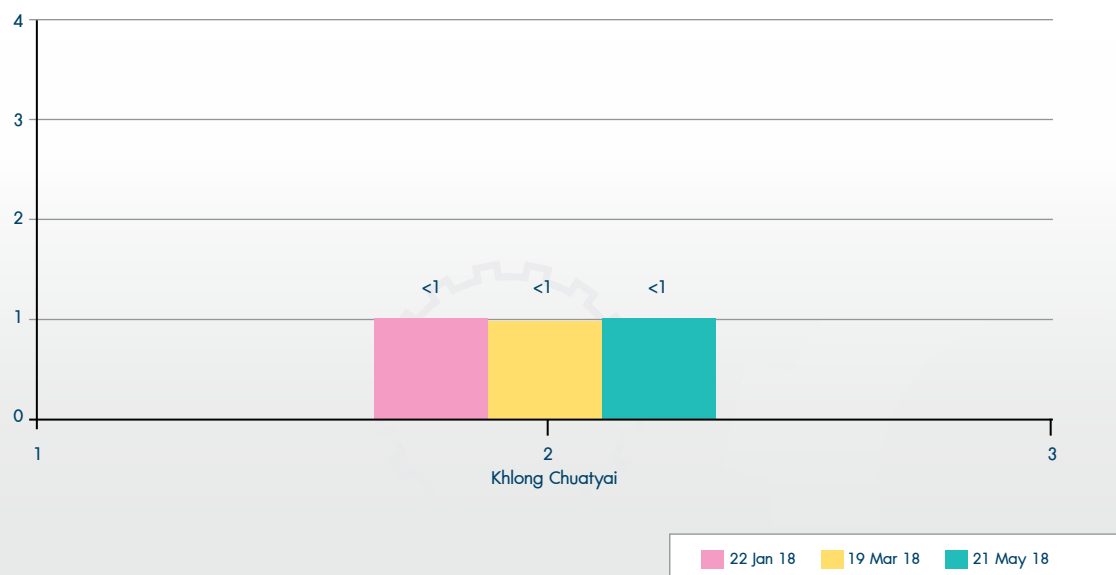
## The result of monitoring of Total Suspended Solid (TS) from January - June 2018

Total Suspended Solid (TS) (Milligram/Liter)



## The result of monitoring of Oil and Grease from January - June 2018

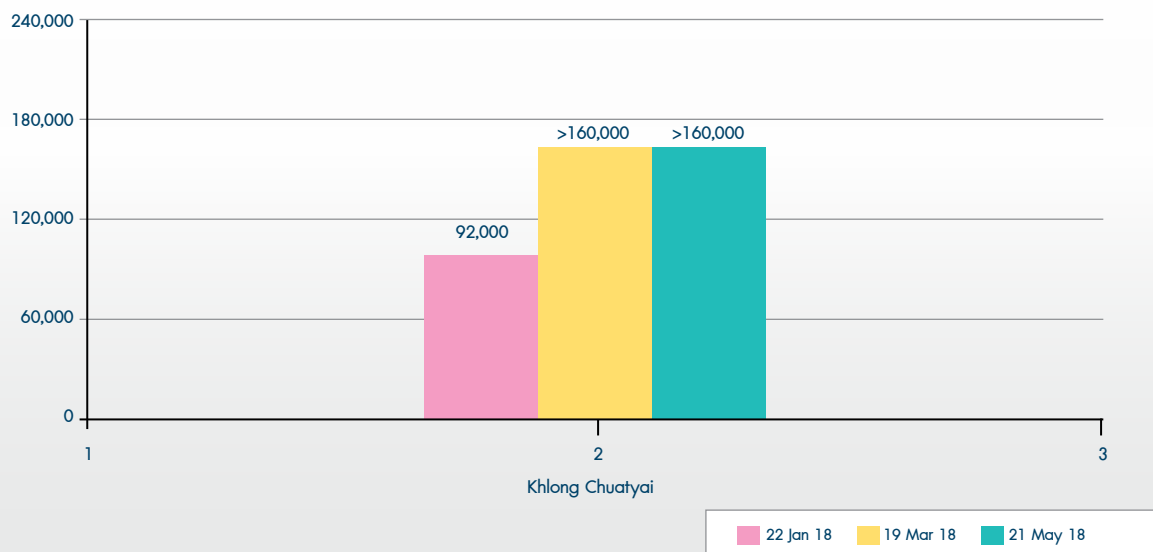
Oil & Grease (Milligram/Liter)





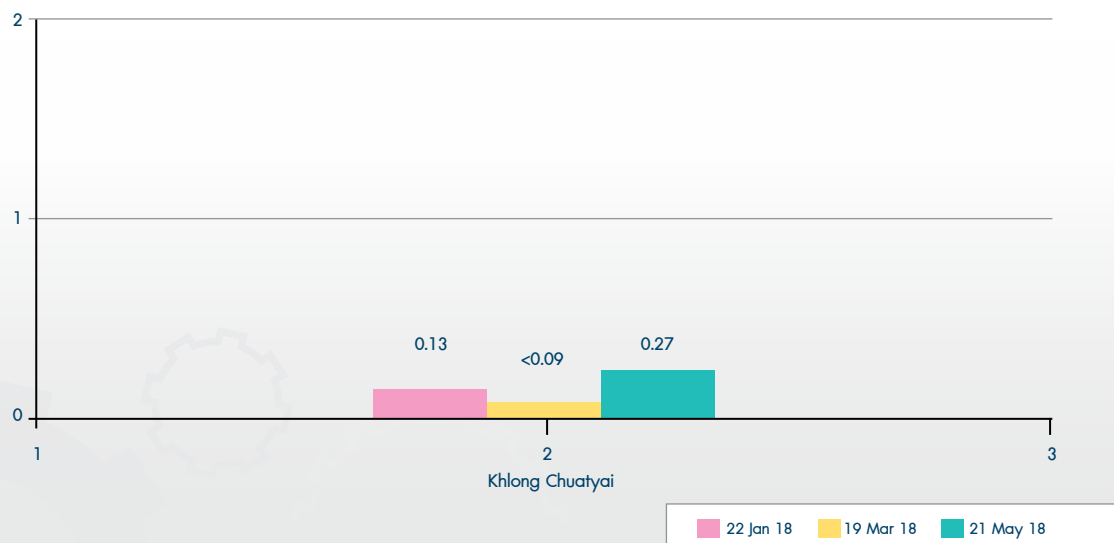
## The result of monitoring of Total Coliform Bacteria from January - June 2018

Total Coliform Bacterial (MPN/100 Milliter)



## The result of monitoring of Nitrate in Water from January - June 2018

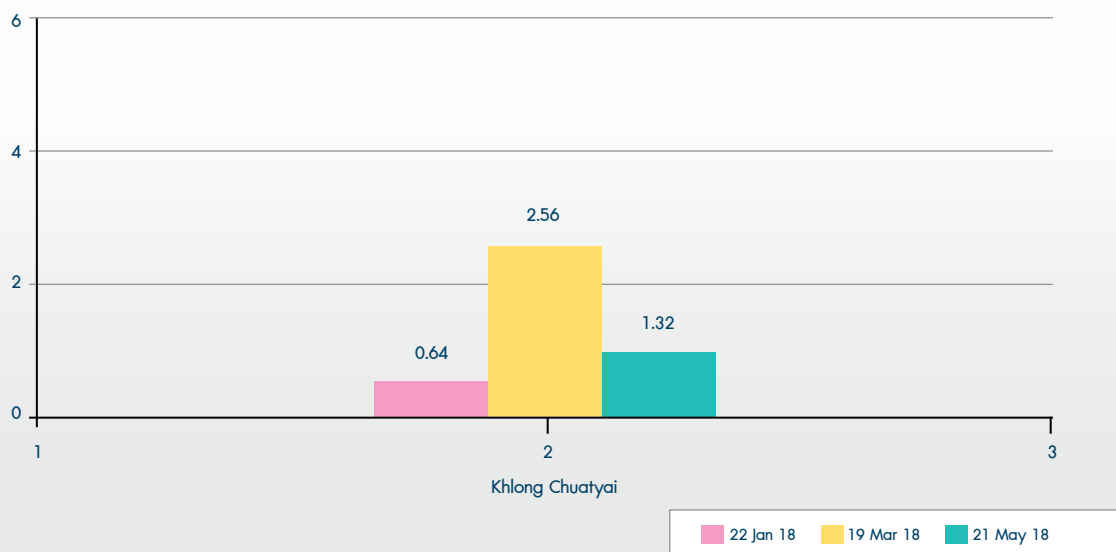
Nitrate in Water (Milligram/Liter)





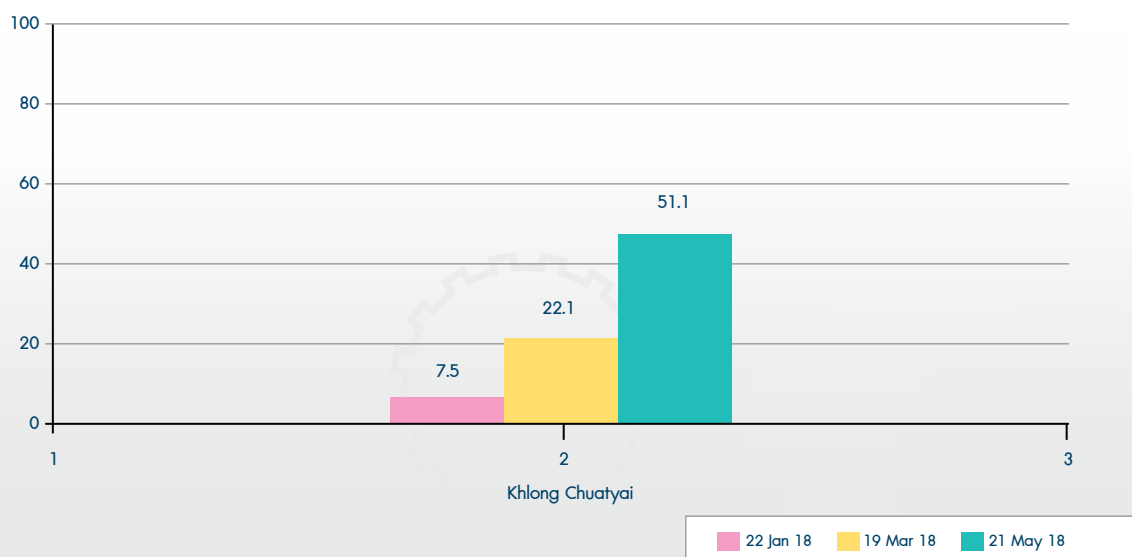
## The result of monitoring of Phosphate in Water from January - June 2018

Phosphate in Water (Milligram/Liter)



## The result of monitoring of Total Dissolved Solids from January - June 2018

Total Dissolved Solids (Milligram/Liter)



#### 7.4.2.5.2 Results of monitoring of Aquatic Ecology

##### • Development of Double-Track Railway for Transportation and Logistics Management (Urgent Phase from Thanon Chira Junction to Khon Kaen)

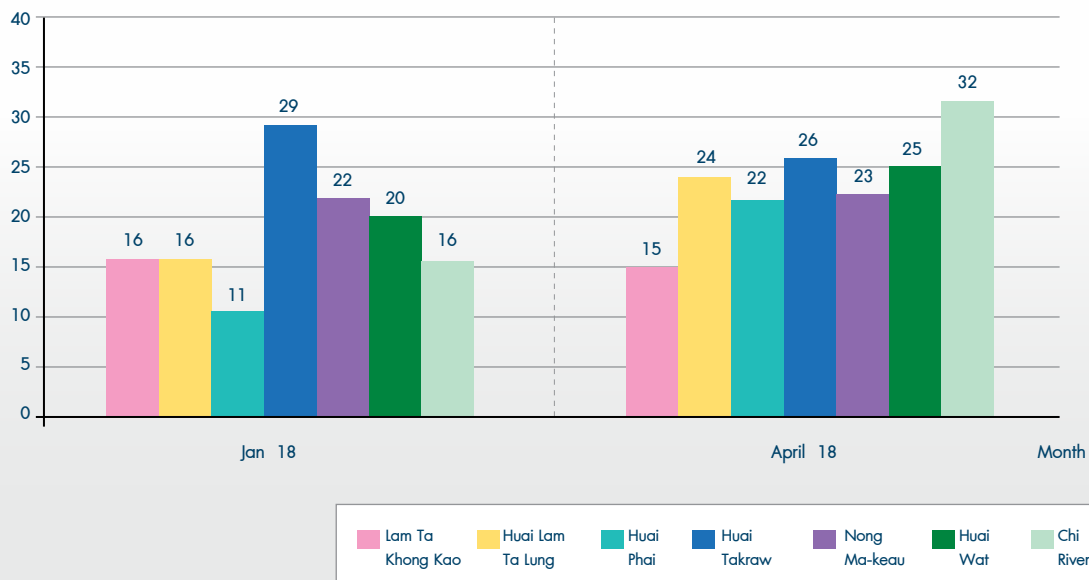
The monitoring and the inspection of aquatic ecology in general along the route of Development of Double-Track Railway for Transportation and Logistics Management (Urgent Phase from Thanon Chira Junction to Khon Kaen) during January to June 2018 throughout the construction period at 7 locations, namely, Lamta-klong Kao River,

Huai Lamta-Klueng brook, Huai Phai brook, Huai Takhro brook, Nong Makhua pond, Huai Wa brook and Chi River. These comprised the monitoring and inspection of the Phytoplankton, Zooplankton and Benthic Macroinvertebrates, as the detailed below :



### The Results of Monitoring and Inspection of the Number of Zooplankton in Surface Water From January - June 2018

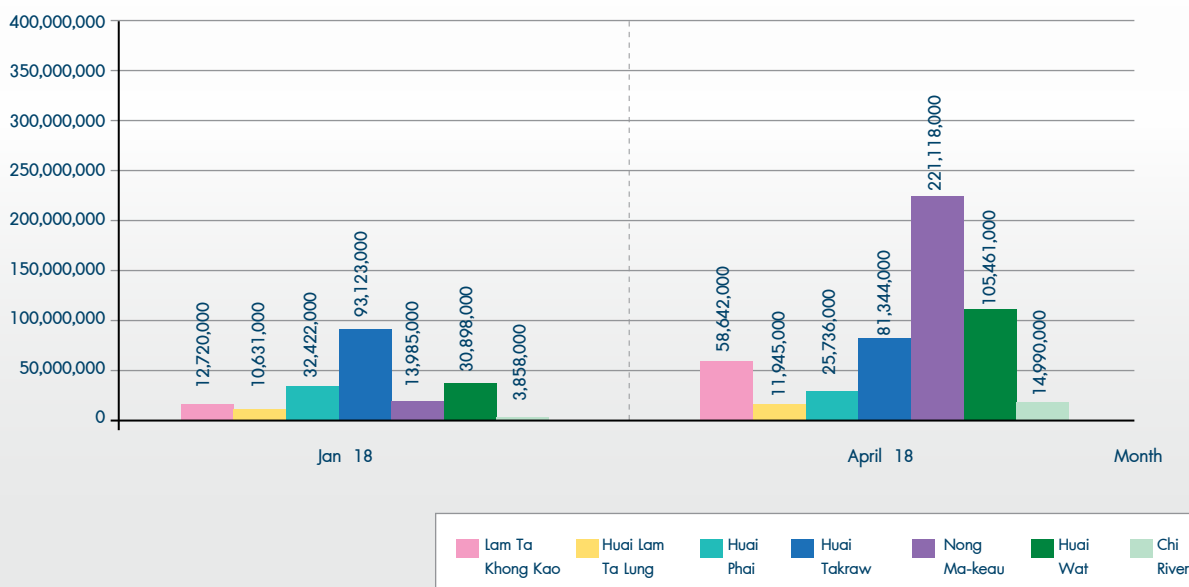
Number of Zooplankton (Species)





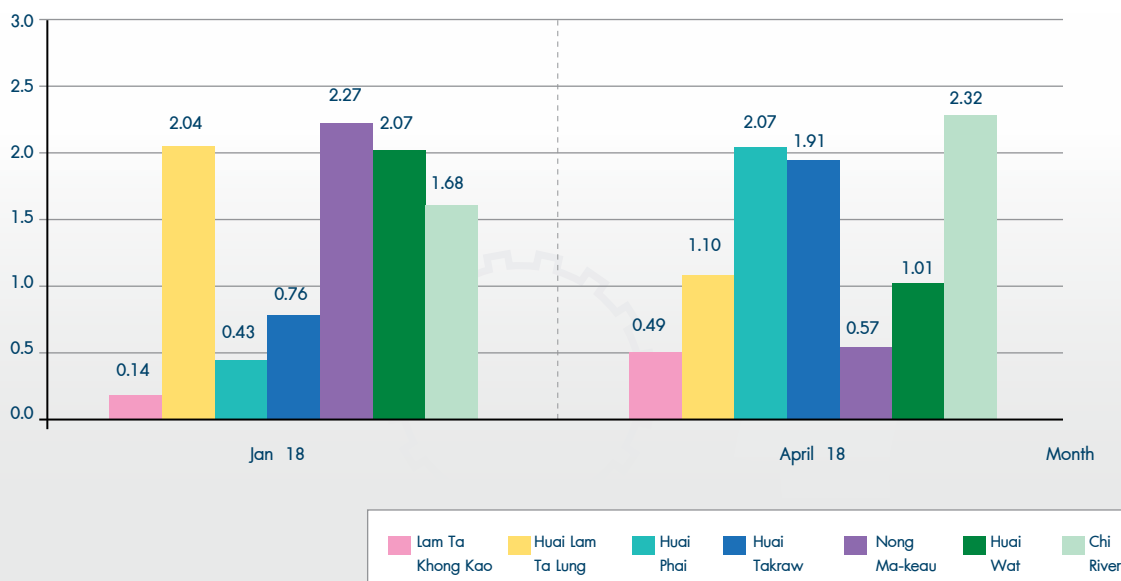
## The Results of Monitoring of Total Phytoplankton in Surface Water From January - June 2018

Total Phytoplankton in Surface Water



## The Results of Monitoring of Species Diversity of Phytoplankton Index in Surface Water From January - June 2018

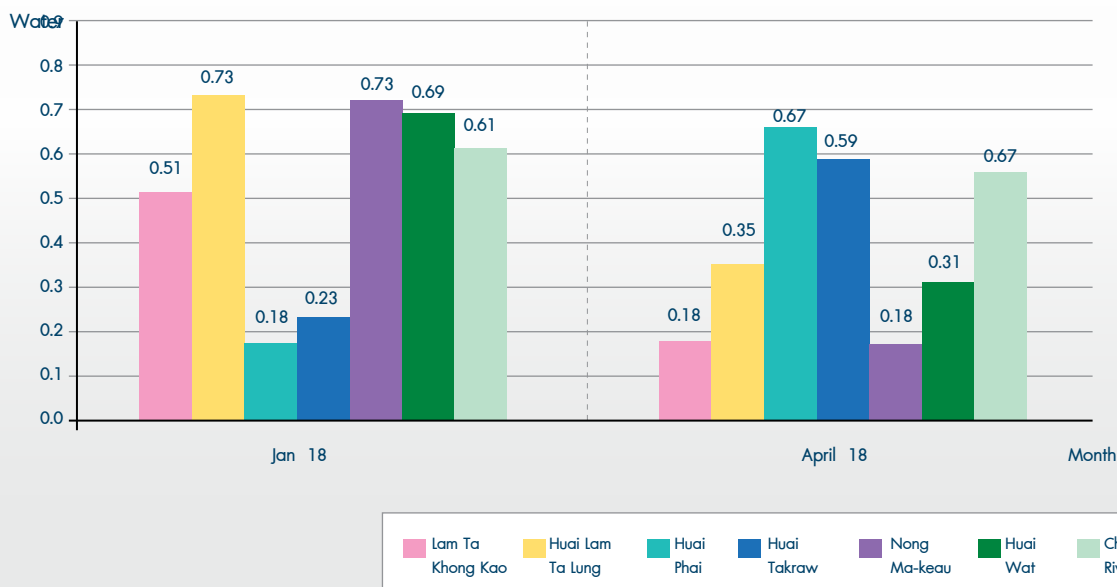
Species Diversity of Phytoplankton in Surface Water





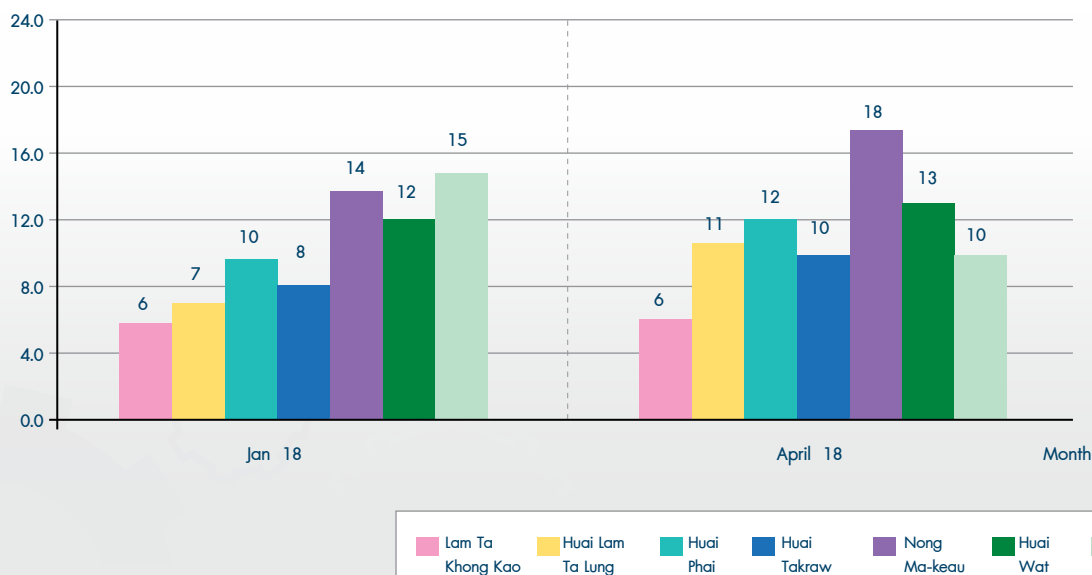
## The Results of Monitoring of Species Diversity of Phytoplankton Distribution Index in Surface Water From January - June 2018

Species Diversity of Phytoplankton Distribution Index in Surface



## The Results of Monitoring of the Number of Zooplankton in Surface Water From January - June 2018

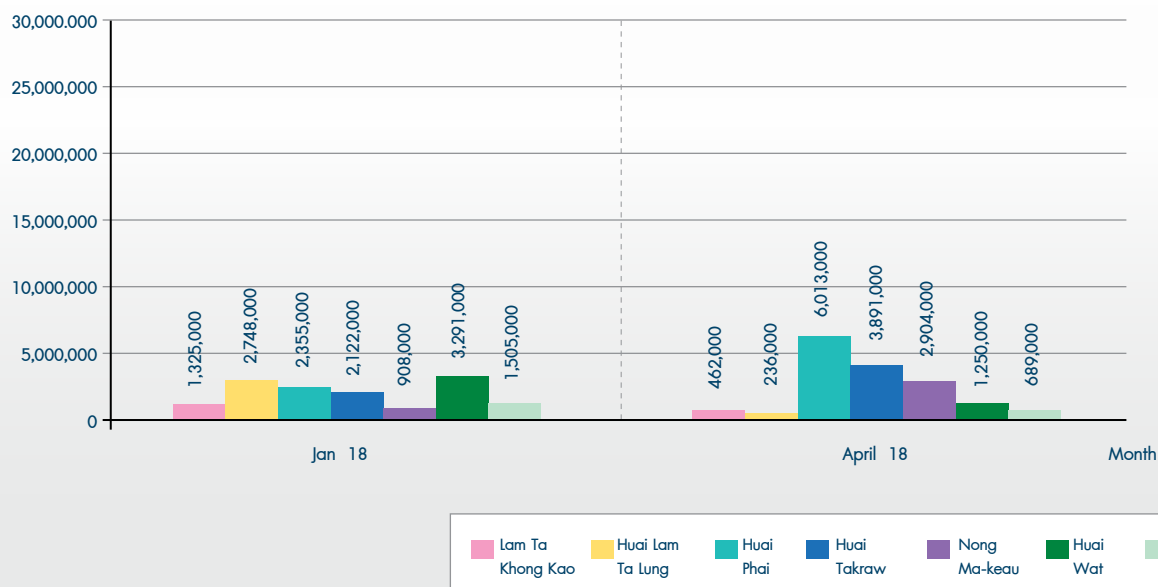
Number of Zooplankton in Surface Water (Species)





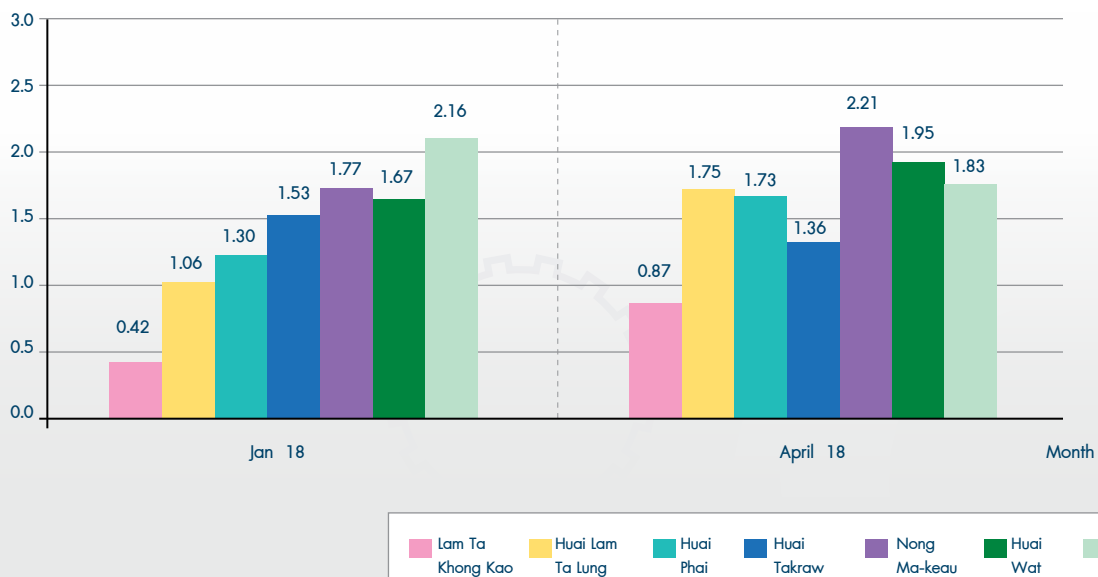
## The Results of Monitoring of Total of Zooplankton in Surface Water From January - June 2018

Total of Zooplankton in Surface Water



## The Results of Monitoring of Species Diversity of Zooplankton Index in Surface Water From January - June 2018

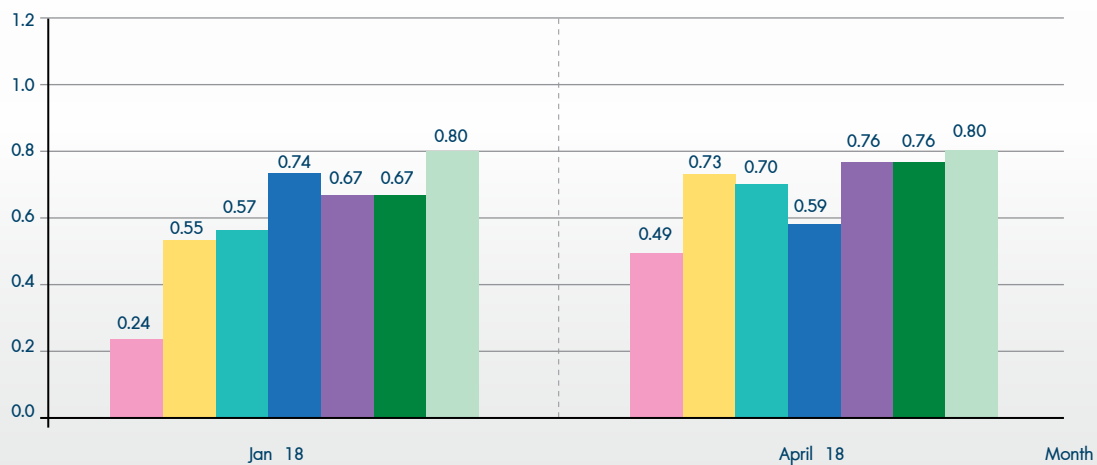
Species Diversity of Zooplankton





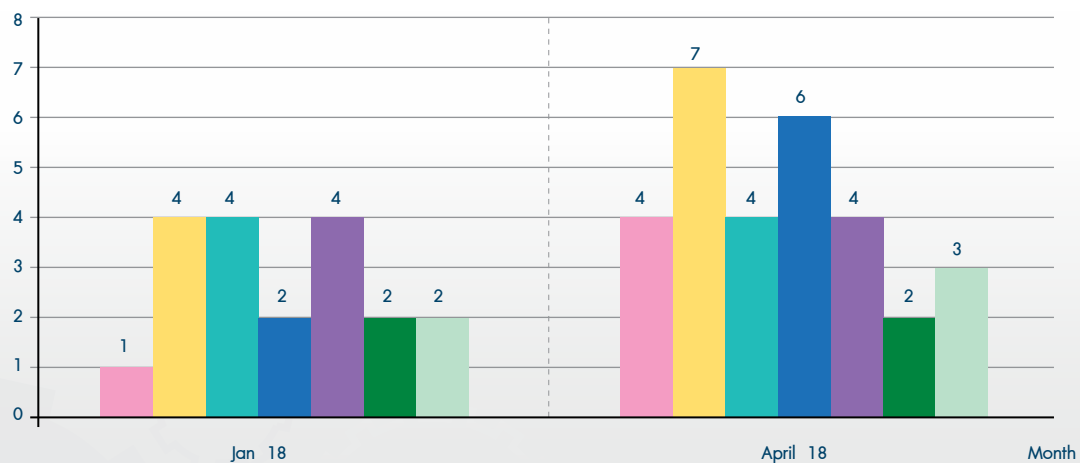
## The Results of Monitoring of the Balance of Distribution of Zooplankton Index From January - June 2018

Balance of Distribution of Zooplankton Index



## The Results of Monitoring of Species of Benthos in Surface Water From January - June 2018

Species of Benthos in Surface Water

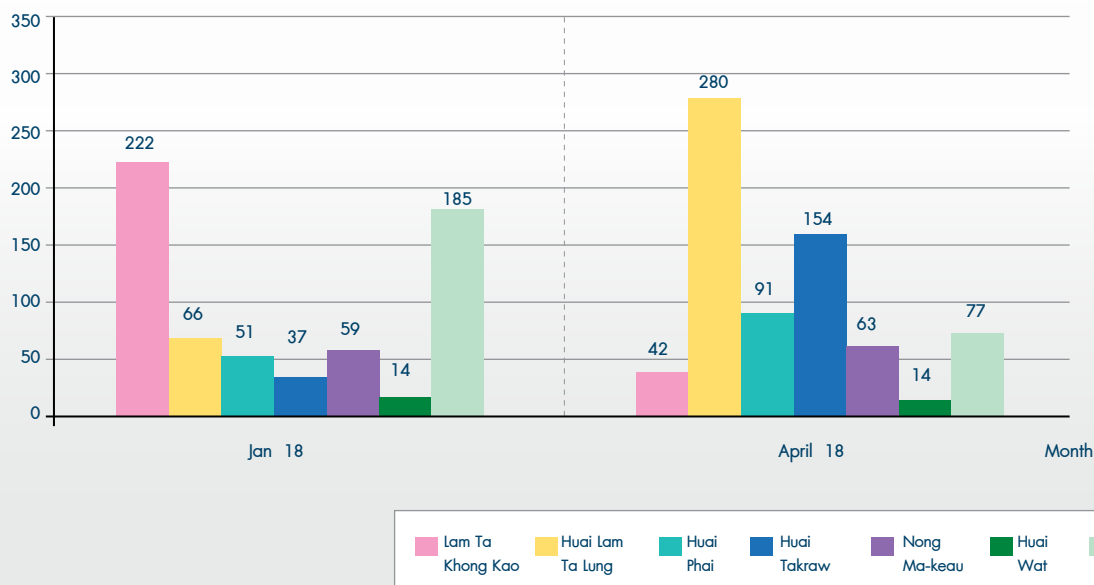






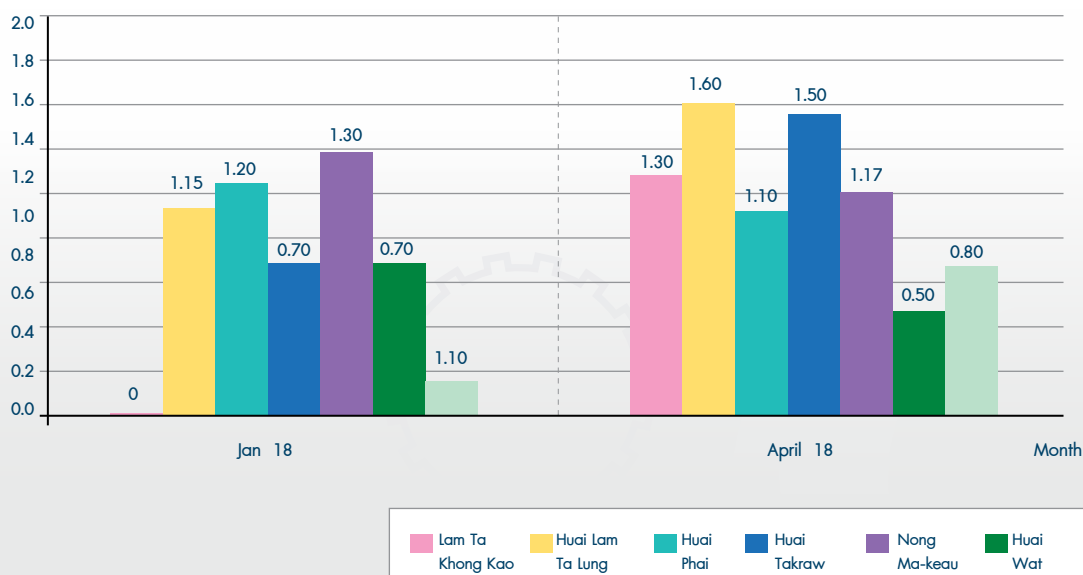
## The Results of Monitoring of Number of Benthos in Surface Water From January - June 2018

Number of Benthos in Surface Water (Unit/Cubic Meter)



## The Results of Monitoring of Species Diversity of Benthos in Surface Water From January - June 2018

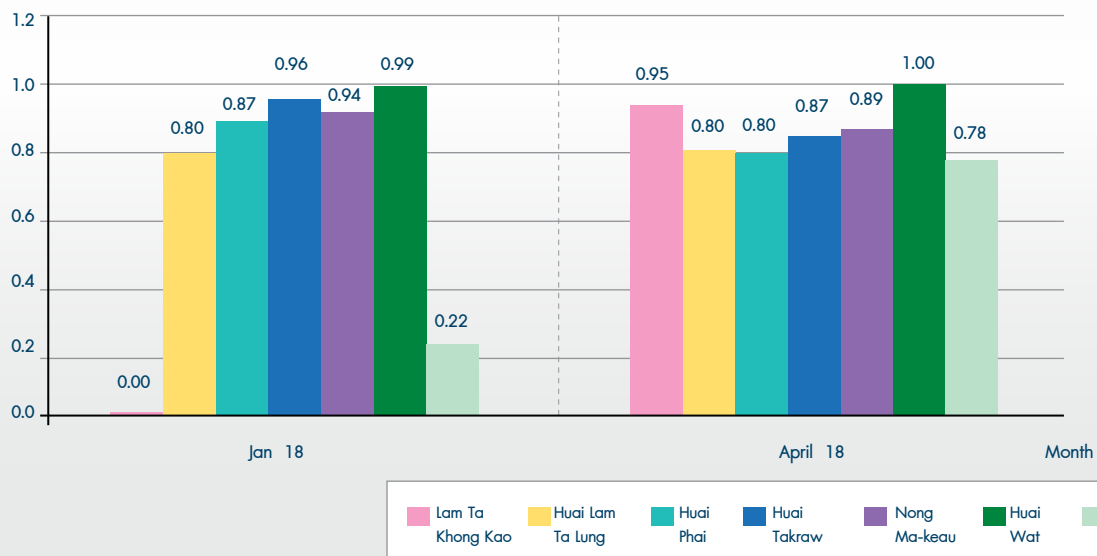
Species Diversity of Benthos in Surface Water





## The Results of Monitoring of the Balance of Distribution of Benthos Index From January - June 2018

Balance of Distribution of Benthos Index



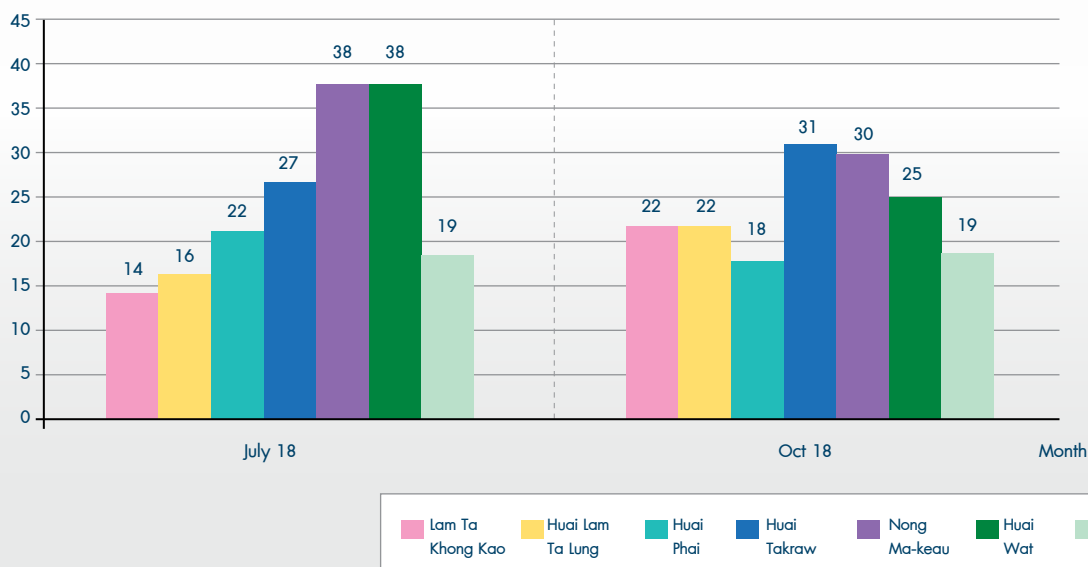
The Monitoring and the inspection of aquatic ecology in general along the route of Development of Double-Track Railway for Transportation and Logistics Management (Urgent Phase from Thanon Chira Junction to Khon Kaen) during July-December 2018 throughout the construction period at 7 locations, namely, Lamta-klong Kao River,

Huai Lamta-Klueng brook, Huai Phai brook, Huai Takhro brook, Nong Makhua pond, Huai Wa brook and Chi River. These comprised the monitoring and inspection of the Phytoplankton, Zooplankton and Benthic Macroinvertebrates, as the detailed below :



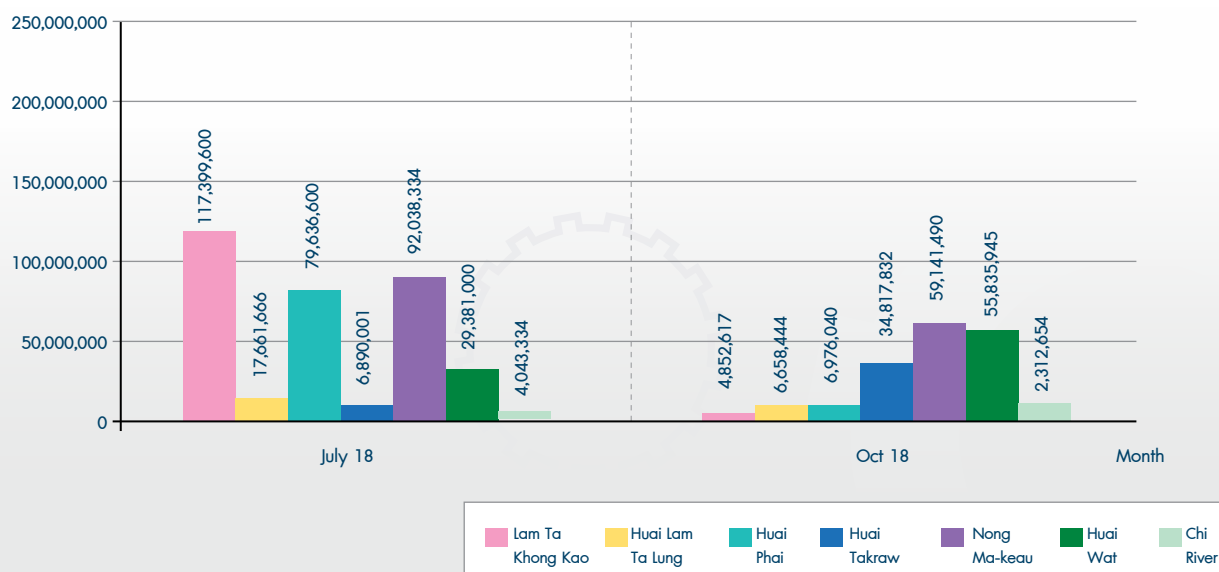
## The Results of Monitoring and Inspection of the Number of Zooplankton in Surface Water From July - December 2018

Number of Zooplankton in Surface Water (Species)



## The Results of Monitoring of Total Phytoplankton in Surface Water From July - December 2018

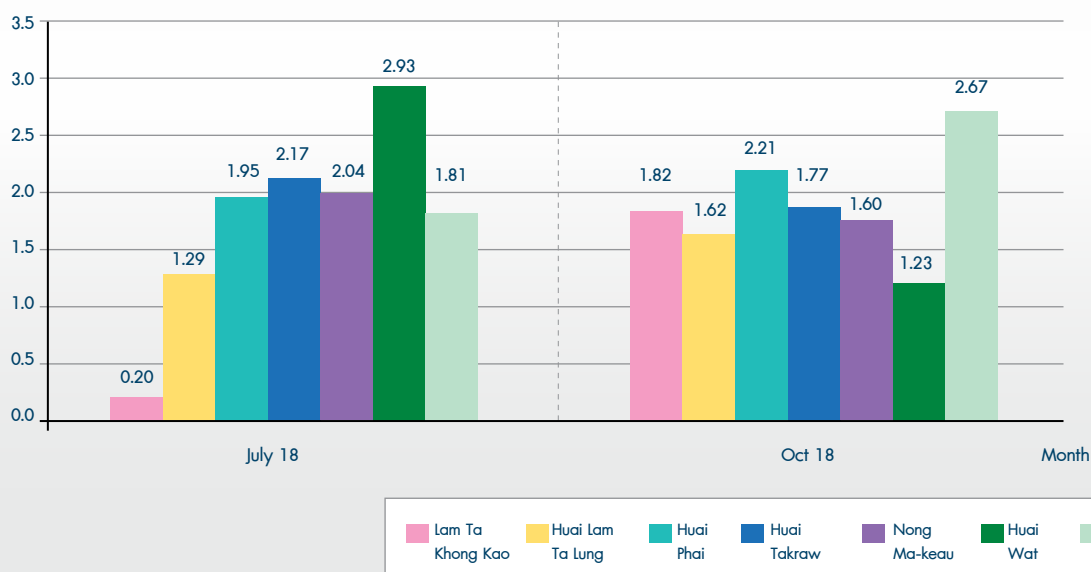
Total Phytoplankton in Surface Water (Unit/Cubic Meter)





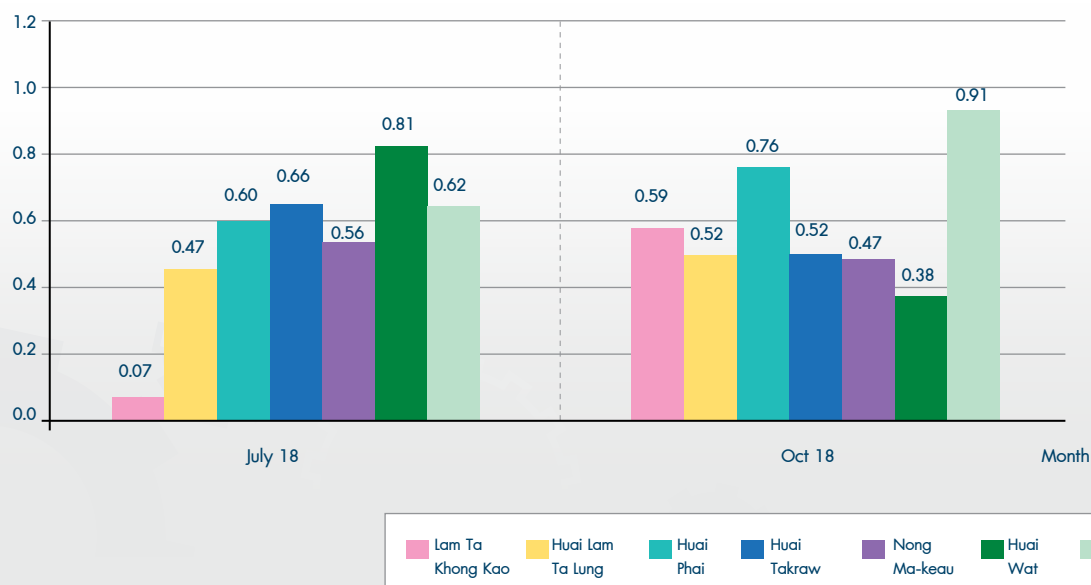
## The Results of Monitoring of Species Diversity of Phytoplankton Index in Surface Water From July - December 2018

Species Diversity of Phytoplankton Index in Surface Water



## The Results of Monitoring of the Balance of Distribution of Zooplankton Index From July - December 2018

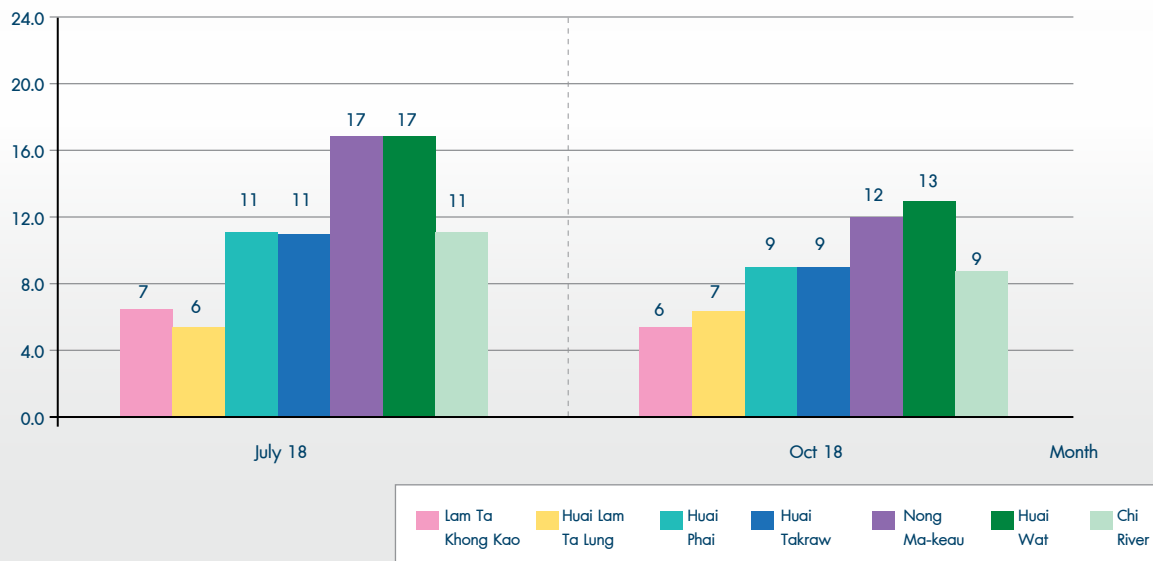
Balance of Distribution of Zooplankton Index





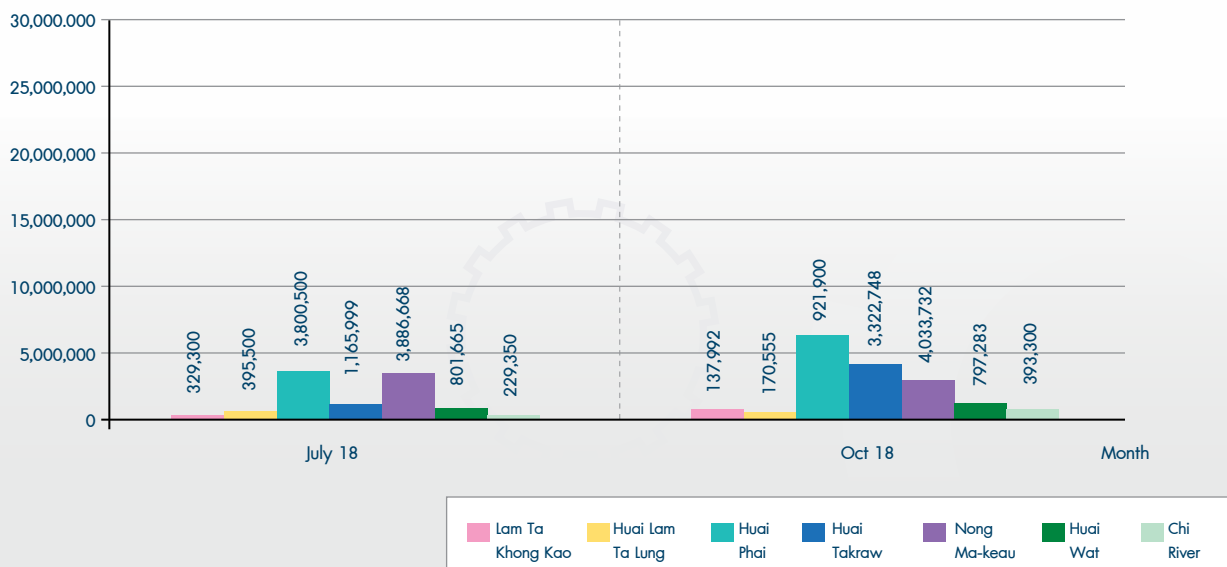
## The Results of Monitoring and Inspection of The Number of Zooplankton in Surface Water From July - December 2018

Number of Zooplankton in Surface Water



## The Results of Monitoring and Inspection of Total Zooplankton in Surface Water From July - December 2018

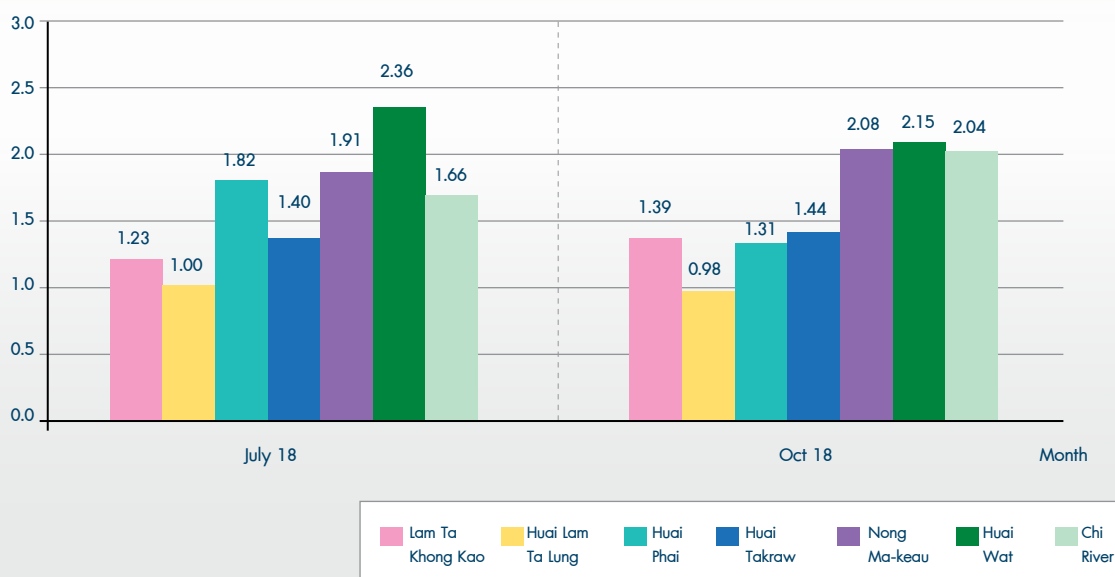
Total Zooplankton in Surface Water





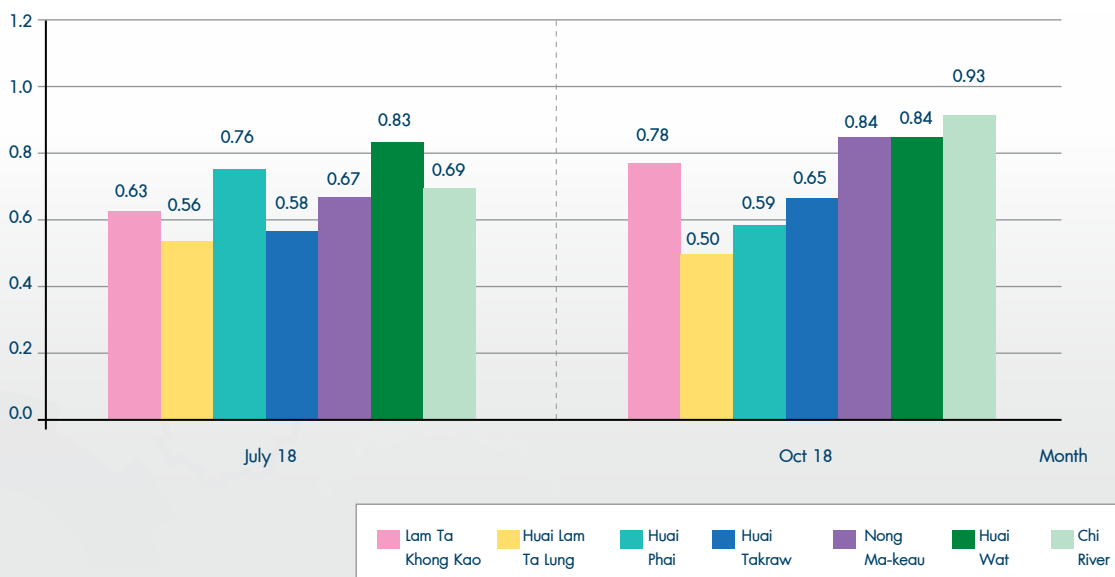
## The Results of Monitoring of Species Diversity of Zooplankton Index in Surface Water From July - December 2018

Species Diversity of Zooplankton Index in Surface Water



## The Results of Monitoring of the Balance of Distribution of Zooplankton Index From July - December 2018

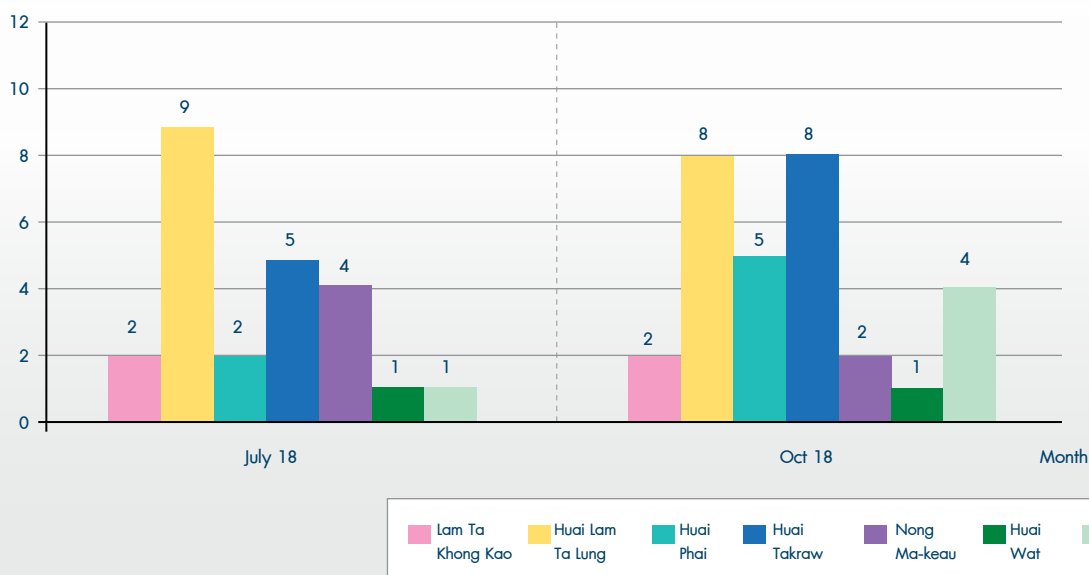
Balance of Distribution of Zooplankton Index





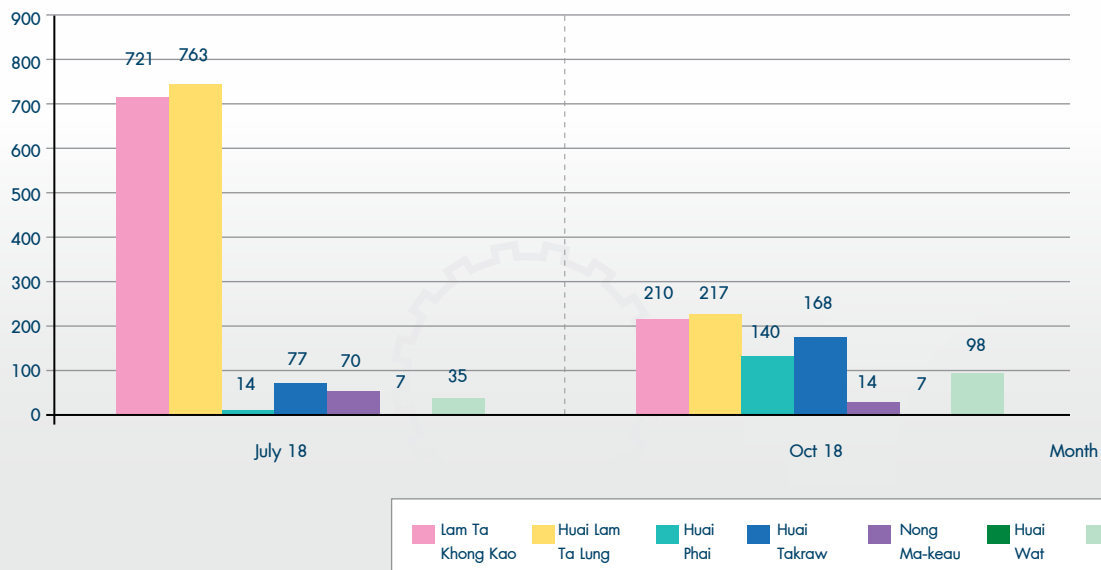
## The Results of Monitoring of Species of Benthos in Surface Water From July - December 2018

Species of Benthos in Surface Water (Species)



## The Results of Monitoring of Number of Benthos in Surface Water From July - December 2018

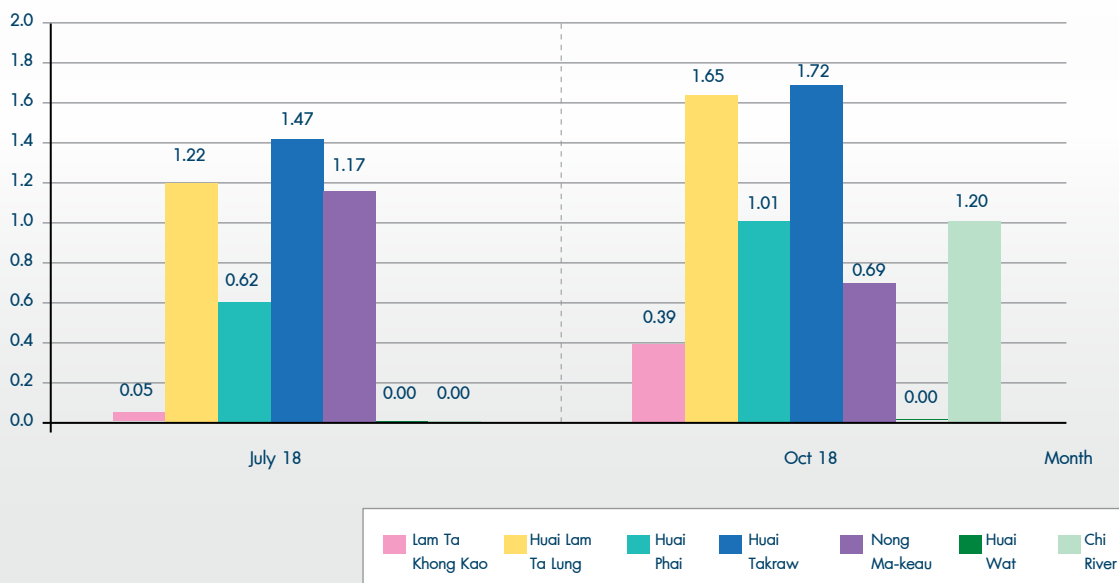
Number of Benthos in Surface Water (Unit/Cubic Meter)





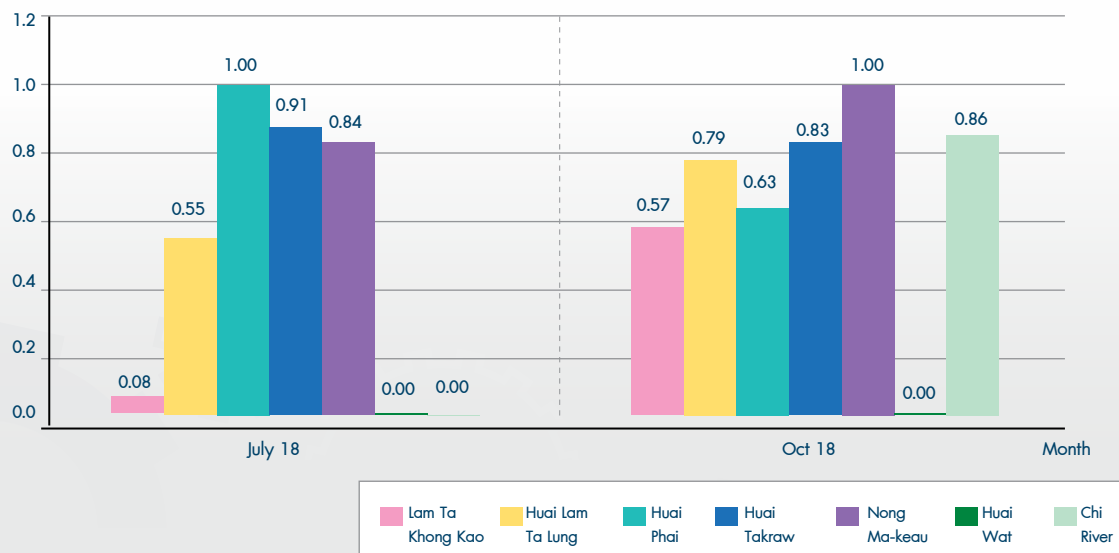
## The Results of Monitoring and Insection of Species Diversity of Benthos in Surface Water From July - December 2018

Species Diversity of Benthos in Surface Water



## The Results of Monitoring and Insection of the Balance of Distribution of Benthos Index From July - December 2018

Balance of Distribution of Benthos Index





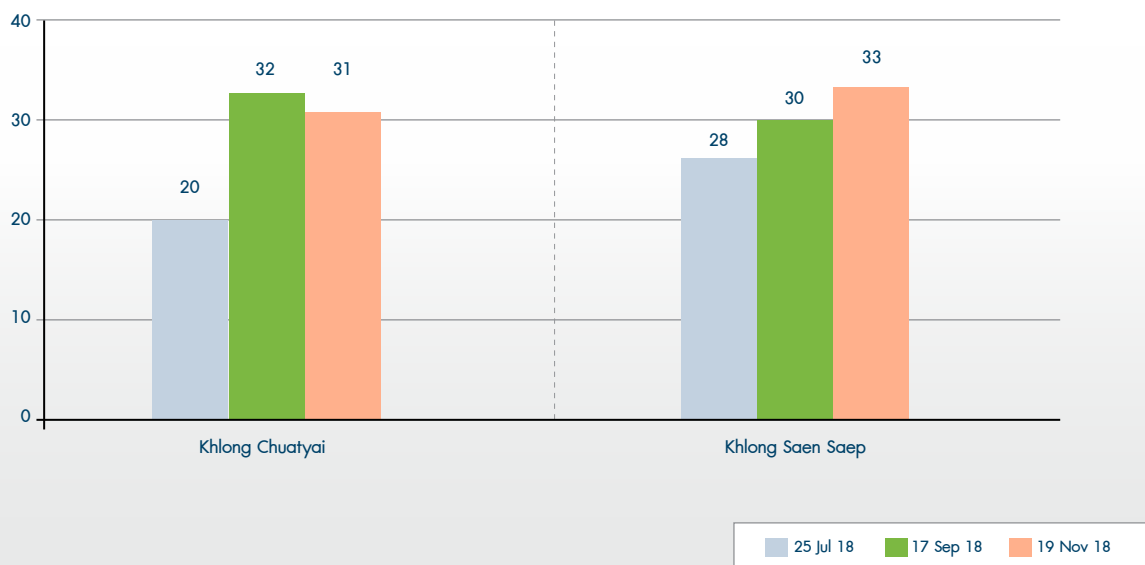
- The MRT Orange Line Project, Thailand Cultural Centre-Ramkhamhaeng 12 Section, Contact 1

The monitoring of surface water quality was conducted at 2 areas, which were Khlong Chuatyai, and Khlong Sean Seab from July-December 2018 between 25 July 2018, 17 September 2018 and 19 November 2018. The details are as follows:



### The Results of Monitoring and Insection of total Phytoplankton in Surface Water from July - December 2018

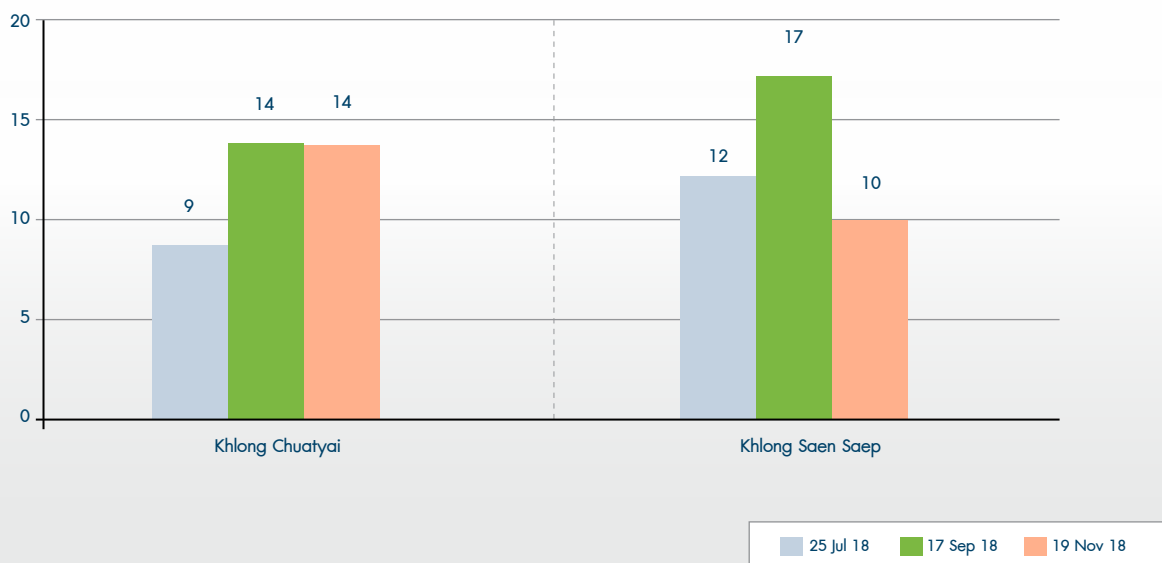
Total Phytoplankton





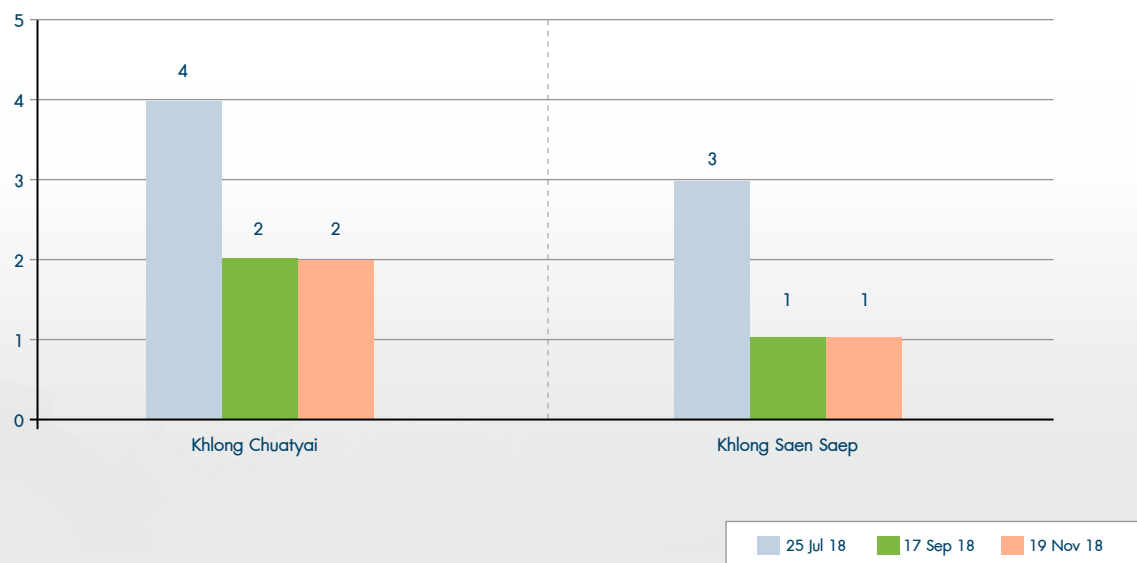
## The results of monitoring and Insection of total of Zooplankton in Surface Water from July - December 2018

Total Zooplankton



## The results of Monitoring and Insection of Total of Benthos in Surface Water from July - December 2018

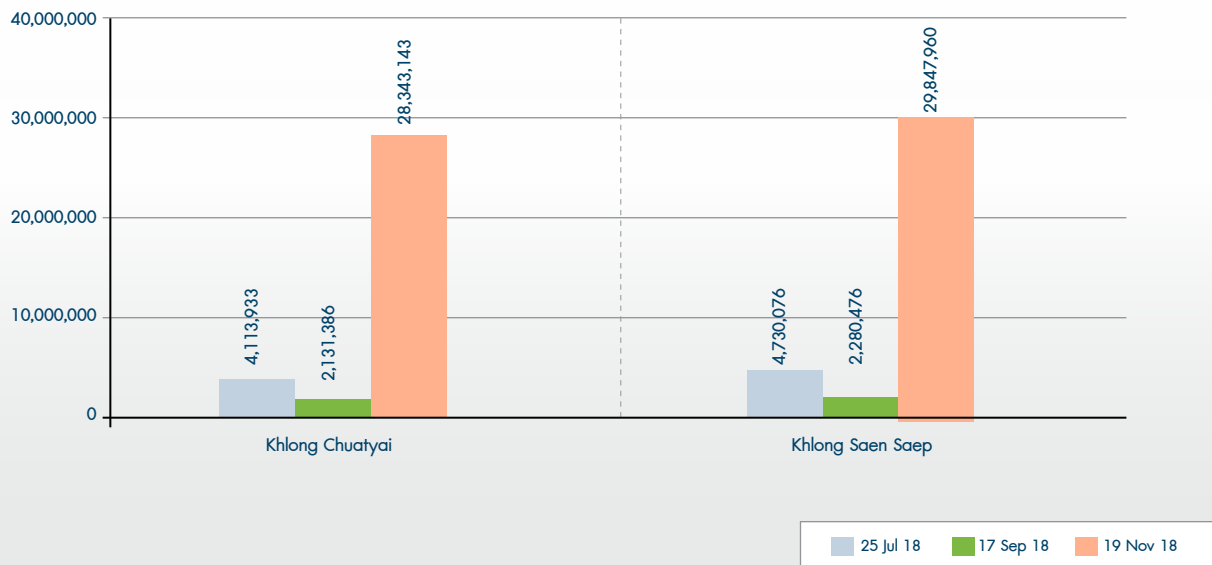
Total Benthos





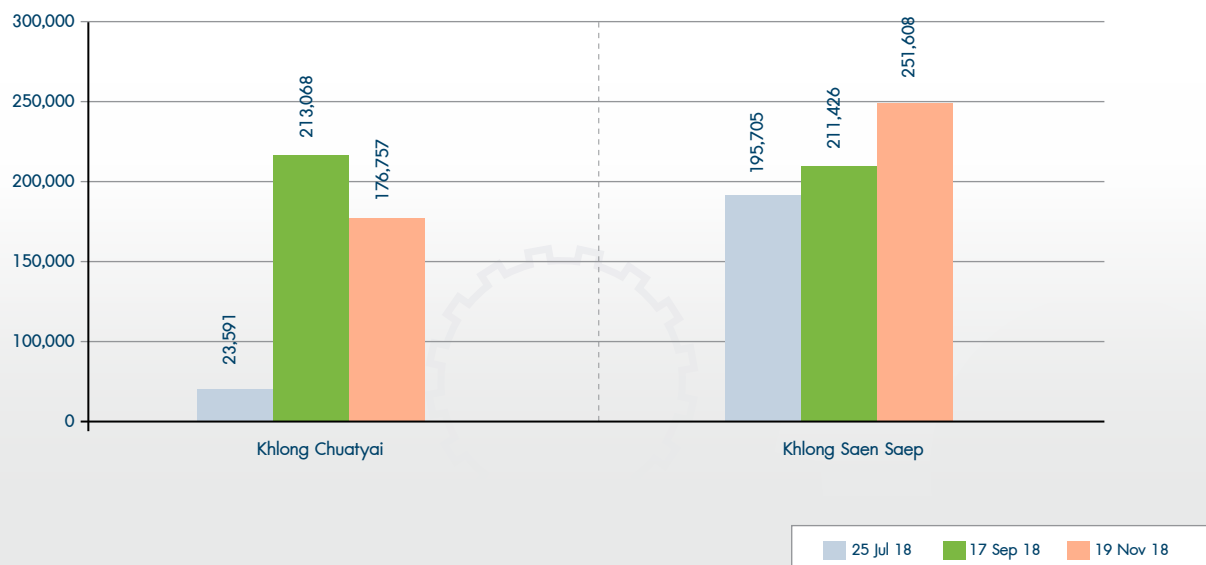
## The results of monitoring of the Total of Phytoplankton in Surface Water from July - December 2018

Total of Phytoplankton (Unit/Cubic Meter)



## The results of monitoring of The Total of Zooplankton in Surface Water from July - December 2018

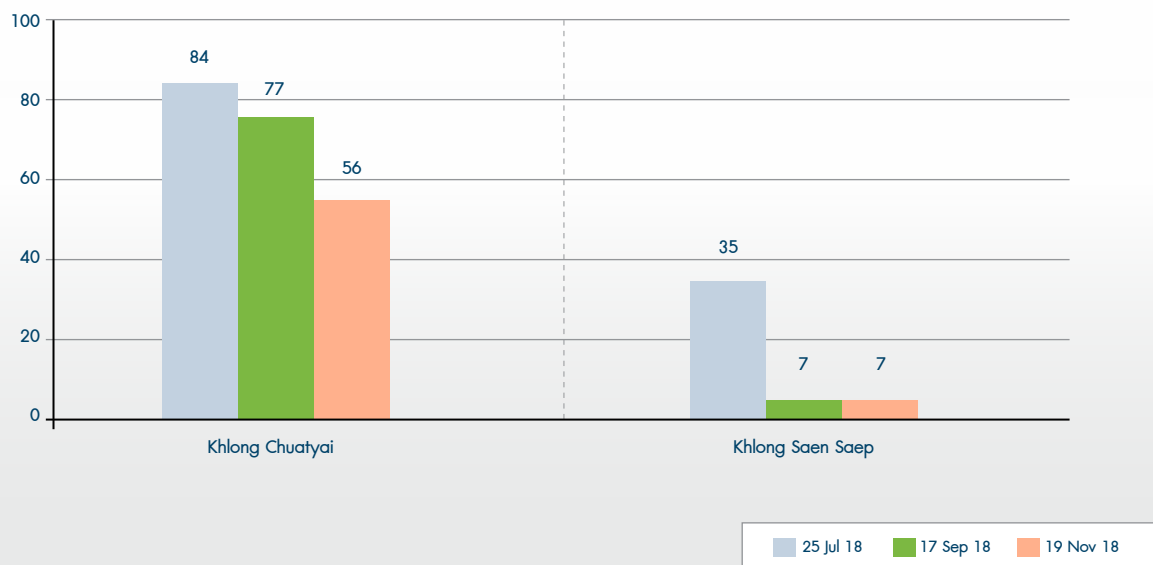
Total of Zooplankton (Unit/Cubic Meter)





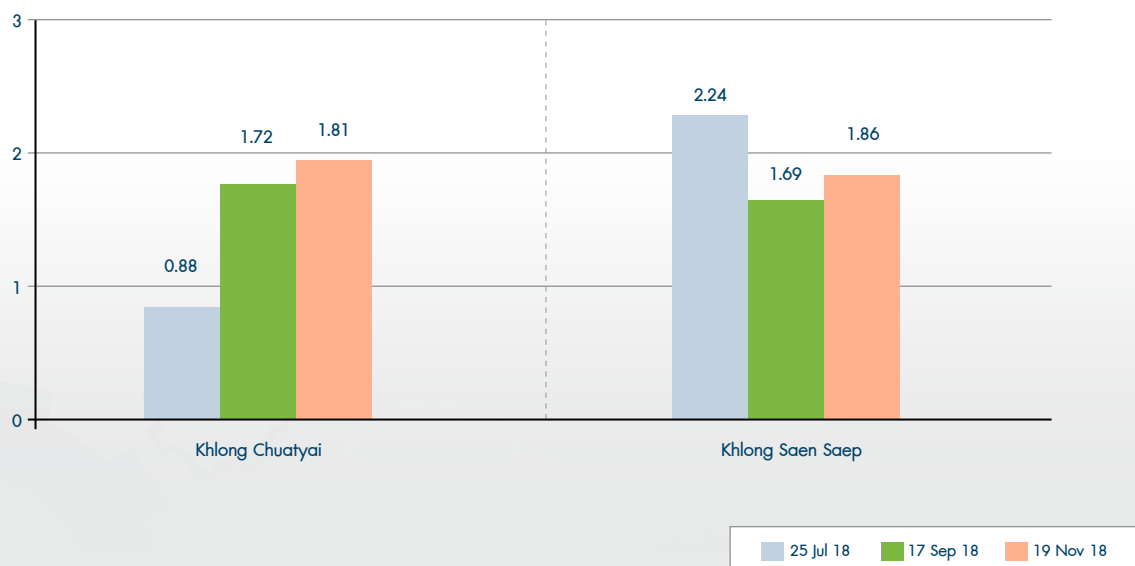
## The results of monitoring of The Total of Benthos in surface water from July - December 2018

The Tital of Benthos (Cubic Meter)



## The results of monitoring and Inspection of species diversity of Phytoplankton in surface water from July - December 2018

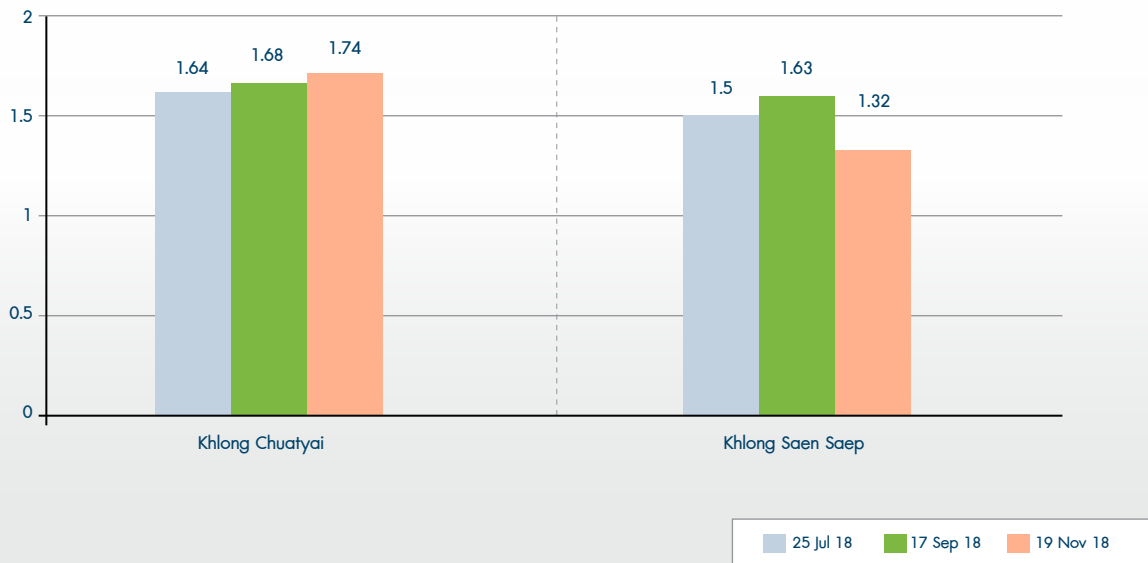
Species diversity of Phytoplankton (H)





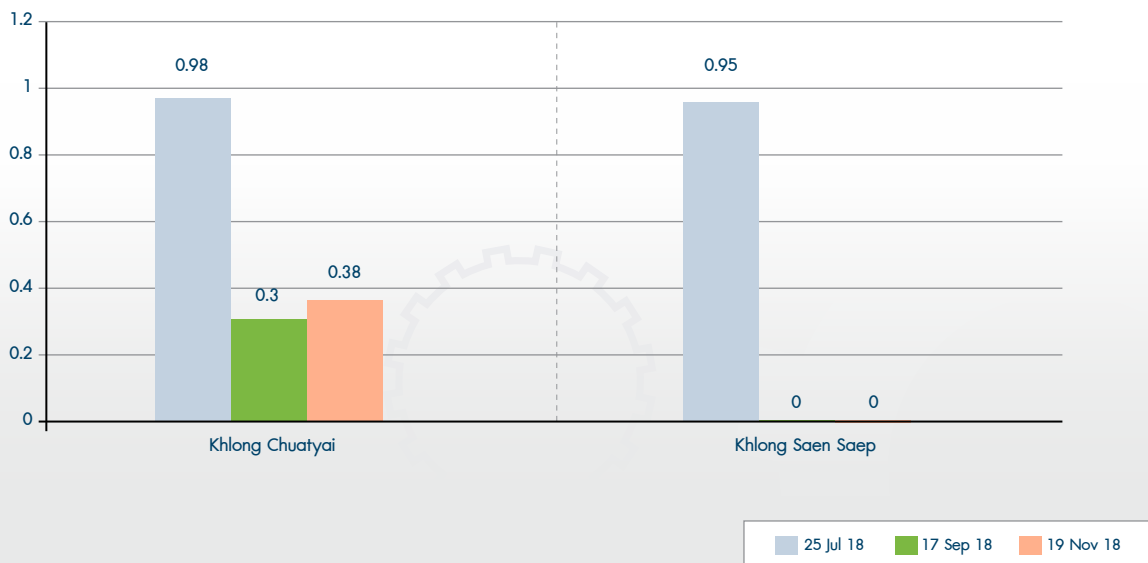
## The results of monitoring and inspection of species diversity of Zooplankton in Surface Water from July-December 2018

Species diversity of Zooplankton



## The results of monitoring of species diversity of Benthos Index in surface water from July-December 2018

Species diversity of Benthos



#### 7.4.2.6 Transportation

As by nature of business of CH. Karnchang, service of construction operation, it holds the transportation of materials and equipment to the construction site as an important matter and takes the environment and the community into accounts, especially the safety of the people using vehicles and roads.

Transportation of construction materials of CH.Karnchang was done within the time limit prescribed by law, i.e. commencing after 11.00 pm and stopping before 5.00 am, in order to avoid traffic jam during rush hours. Routes used are far away from structures and communities.

Speed is limited within the speed prescribed by law. A leading vehicle is employed in the case of transportation of large equipment to the construction site and has the equipment or construction materials covered in order to avoid accident and particulate matters.

CH. Karnchang has a machinery center to provide services and take care of vehicles. All drivers of CH. Karnchang have passed strict training and practice with regard to safety and accident prevention. In addition, all vehicles have passed condition check of readiness for use. CH. Karnchang has 1,260 units of vehicles, as detailed below:

Unit : Unit

| Item  | Particular      | Quantity |
|-------|-----------------|----------|
| 1     | Heavy Equipment | 159      |
| 2     | Trucks          | 649      |
| 3     | Passenger Cars  | 452      |
| Total |                 | 1,260    |

In 2018, as CH. Karnchang strictly complied with the law on transportation of materials and equipment, no payment of fine was paid.

## 7.5. Statistics and Causes of Accidents

### • Development of Double-Track Railway for Transportation and Logistics Management (Urgent Phase from Thanon Chira Junction to Khon Kaen)

The monitoring and inspection of accidents during January - December 2018, no report of complaint regarding traffic accidents along the routes of construction of Development of Double-Track Railway for Transportation and Logistics Management (Urgent Phase from Thanon Chira Junction to Khon Kaen) was filed.

### • The MRT Orange Line Project, Thailand Cultural Center - Ramkhamhaeng 12 Section, Contract 1

The monitoring and inspection of accidents during January - June 2018, total accidents found were 95 times, causes of most accidents occurred on 3 roads included scrapes and crashes of total 156 times; all accidents occurred were not caused by the construction of the MRT Orange Line, Thailand Cultural Center-Lamsalee-Minburi Section, Contract 1, Works of Design and Construction of Running Tunnel and Underground Station, Thailand Cultural Center- Ramkhamhaeng 12 Section.

The monitoring and inspection of accidents during July-December 2018, total accidents found were 258 times, causes of most accidents occurred on 3 roads included scrapes and crashes of total 162 times; all accidents occurred were not caused by the construction of the MRT Orange Line, Thailand Cultural Center—

Lamsalee-Minburi Section, Contract 1, Works of Design and Construction of Running Tunnel and Underground Station, Thailand Cultural Center - Ramkhamhaeng 12 Section.

### • The MRT Orange Line Project, Ramkhamhaeng 12 Section - Hua Mak Section, Contract 2

The monitoring and inspection of accidents during January - December 2018, total accidents found were 320 times, causes of most accidents occurred on Ramkhamhaeng Road included scrapes and crashes of total 173 times; all accidents occurred were not caused by the construction of the MRT Orange Line, Thailand Cultural Center—Lamsalee-Minburi Section, Contract 2, Works of Design and Construction of Running Tunnel and Underground Station, Ramkhamhaeng 12-Hua Mak Section.

### • The MRT Orange Line Project, Depot and Car Park, Contract 5

The monitoring and inspection of accidents during January - December 2018, total accidents found were 16 times, causes of most accidents occurred on Watthanadham Road included reckless driving of total 12 times; all accidents occurred were not caused by the construction of the MRT Orange Line, Thailand Cultural Center—Lamsalee-Minburi Section, Contract 5, Works of Construction of the Repair and Maintenance Building and Park and Ride Building.





## 8. Business Operations with Social Responsibility

CH. Karnchang bears in mind that our business operations must take into account the social development and environmental care in parallel, with an effort to avoid any acts which may cause negative impact on communities as well as take care of all staff in the interests of all stakeholders, both inside and outside, with fairness, so as to pave the way for common sustainability. In this connection, CH. Karnchang undertakes measures and activities which demonstrate our corporate social responsibility as follows:

### 8.1.1 Community Relations, Public Relations and Complaints

Each project office of CH. Karnchang will prescribe measures and carry out the mitigation of negative impact on the community and assign persons to do activities relating to community relation and participation by the community. Public relation signs are made and details of the project are provided in a website to let the people become aware of the construction of the project. Warning signs of the construction area are also put in place in the areas closed to the construction site.

In addition, surveys of opinions of the people living around the construction site were conducted both before commencement and during the construction in order for the people to take part in giving suggestions as to the way to mitigate the impact likely to arise that are consistent with the way of life of the people in the community. It also allows participation in the monitoring of the environmental impact in the community. Public relation activities are conducted to allow the people to have information regarding the contractor, number of workers, construction plan and traffic management plan. There are meetings with community leaders and discussion in small groups. Opinion boxes are provided in order to explain the details and the schedule, and to receive information and to be a channel for complaint in the case of suffering

arising out of the construction, opinion and suggestion to the project. Signs and telephone number are posted in place and a person put in charge for 24 hours a day. Whenever a complaint is lodged, the problem must be resolved immediately. Information is given so people can avoid the route and be more careful in using the entrance-exit. It also function as a coordination center with various agencies to prevent and to resolve any problem arising out of the construction.

In addition, information of the project is also posted in a website to let the public know about the project and to receive opinion of the people who use the routes around the construction area. The problems and suggestions derived from distributing questionnaire regarding the attitude of the community on social and economic issues will be collected, analyzed and assessed systematically for use in improvement of the work. CH. Karnchang holds this same principle in all construction projects. It regularly coordinates with the president of the community and officials of the local administration.

### 8.1.2 Traffic

On the mitigation and reduction of traffic problems for the people in the area, CH. Karnchang had made a communication and transportation operation plan, in order to find ways to reduce the impact with respect to traffic due to construction, by reference to various approaches, which are survey, setting route for the survey, collecting data on traffic quantity and classification of vehicles. The survey of traffic on each side of the traffic was conducted while vehicles were divided into categories, i.e. mid-block approach.

The process is carried out in order to compare its analysis with the change in traffic quantity during construction period. The steps of the operation are as summarized below.



1. Divide vehicles into seven categories, which is the classification of vehicles in general according to the Office of the Commission for the Management of Land Traffic.
2. Procure tools and equipment, i.e. CCTV that records field traffic quantity, safety devices and conduct training for the persons who will do the field work.
3. Set the survey area/position of the CCTV that can survey the quantity of each category of vehicles of each side of the road clearly.
4. Set the time for collecting the data of traffic quantity and install the CCTV. The data will be collect from 7.00 am to 7.00 am of the subsequent day for 24 hours in one day. The record will be checked to count the number of vehicles both coming and going.
5. There are two ways to count the number of vehicles, i.e. write a stroke to represent one vehicle or use a counter, and put the number of vehicles together and put the number in a survey disc.
6. Check the data, which consists of the quantity of vehicles divided into categories in each hour. Record the data in the table for recording the traffic quantity in the form of electronic file.

7. Calculate the traffic quantity by hour (unit per hour) using Microsoft Excel in the calculation and analysis.
8. Take the result of the traffic quantity (unit per hour) of each category of vehicle to refine to the equivalent of passenger car unit/hour (pcu/hour) using the passenger car equivalent (PCE) according to the regulation of the United States Transportation Board.

By way of processing the data of category of vehicles, traffic distance, time of commuting, and consider the flow from the speed, the result will be used to mitigate the impact on the traffic. Such communication and transportation operation plan will be used in large construction project located in the area of condensed community.

Project Office of CH. Karnchang has posted various signs and use CCTV to survey the traffic quantity on the road. The signs tell the people in general and those who live around the construction area and the commuting people to know in advance in case it is necessary to close the traffic temporarily, including sign of apology for inconvenience in case the construction affects the community unavoidably.



In addition to the signs posted for the public to be aware of the construction project, CH. Karnchang also do other things to help ease the traffic as follows.

1. Coordinating with the Traffic Police Division and arranging the traffic around the construction area;
2. Fixing the width of the footpath in the construction area to be the same with the original width, except where the footpath is more than 2 meters wide. In such a case, the width may be lowered but it must be no less than 2 meters as formerly agreed by the Highway Department and the Traffic Police Division.
3. Closing the turning point of vehicles closed to the construction area in order to lessen the traffic jam in the area and to prevent accident caused by vehicles, machinery and workers in the construction area.



4. Blocking the construction area from traffic lane by concrete wall.



5. Preparing and posting warning signs about the construction according to the prescribed period in full.



6. Making a plan of the route for transporting materials and equipment of the project to avoid traffic problem. The transportation will be made after 11.00 pm and stopped before 5.00 am to avoid traffic jam during rush hours. A leading vehicle will be used each time of transportation of construction materials and equipment of the project.
7. Using cover during the time of transportation of materials and equipment to avoid accident and particulate matter.



8. Controlling drivers to strictly comply with traffic regulations.
9. Having sufficient lighting and signs marking the construction area clearly.
10. Coordinating with agencies concerned, such as Bangkok Metropolitan Administration, Rural Highway Department, and the Royal Thai Police to prescribe and issue regulations that are suitable to the construction area.
11. Providing parking space and area for storage of machinery used in the construction. Installing danger

warning signal and light signal for road users to be aware of the trucks for transportation of materials coming and leaving, including signs for road users that can be seen clearly both during the day and at night, before the entrance by at least 100 meters.

12. Installing traffic signal light, blinking light and lighting as required by law. Also, there must be warning sign to warn before entering the construction area, installing blocking fence, conical road markers, round barrels, traffic signs on the road surface, and high hanging traffic signs properly as required by Office of Transport and Traffic Policy and Planning and BMA.

However, CH. Karnchang also uses vehicles, such as ten-wheeler truck, to transport equipment, machinery and construction materials by way of main routes used by the public. Sometimes it may cause impact on the community, such as smoke from the exhaust pipe exceeding the standard and some article falling, which can be subject to fine.

### 8.1.3 Customers' Satisfaction and Surveys

CH. Karnchang gives top priority to the satisfaction of customers or project owners, in terms of quality, timeliness and participation in social and environmental responsibility, which are consistent with the Quality Management Systems: ISO 9001/2008.

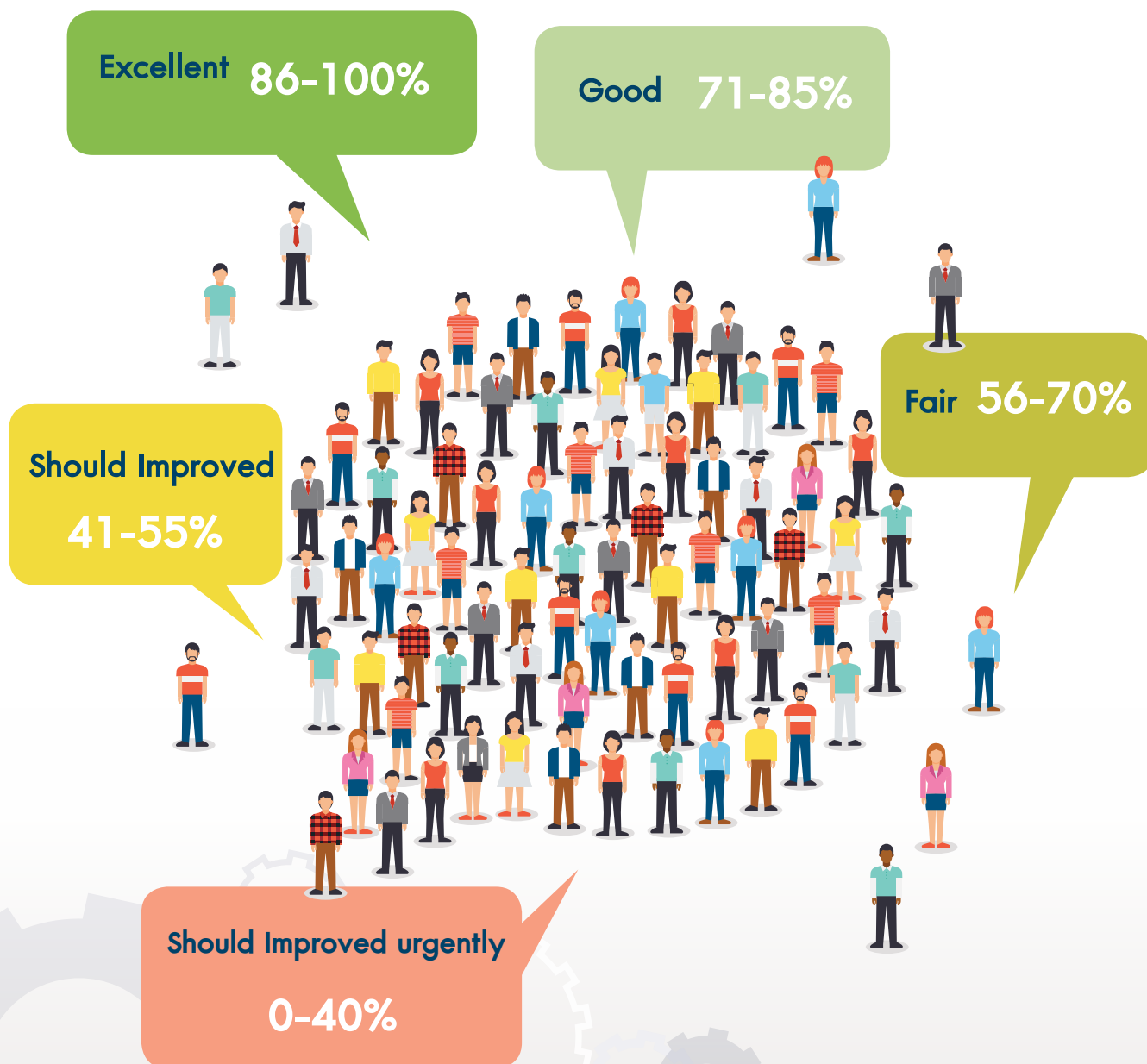
From over 46 years of experience and in our capacity as Thailand's leading construction contractor, CH. Karnchang delivers works according to scheduled and the quality of works meets standard requirements of project owners. CH. Karnchang requires all construction projects to survey the satisfaction of project owners/customers, which covers both qualitative and quantitative data collection, in order to ensure transparency and completeness.



The survey results from project owners are compiled and presented to the Company's management and used as part of our operational database. Suggestions or recommendations from the surveys will be taken into analysis for improvement of our work process to satisfy project owners' requirements. The satisfaction of project owners/customers is aimed at "Good" minimum, subject

to monthly monitoring. The surveys will cover all four aspects, namely, quality, time, safety and coordination.

According to surveys in 2018, all construction projects of CH. Karnchang received scores ranging from "Good" to "Excellent" from project owners, i.e., 71-100%. Surveys are provided to project owners to complete based on the full scale of 1,000 points, with the scoring criteria as follows:



## 8.2 Fair Treatment

CH. Karnchang recruits and employs knowledgeable and experienced personnel to perform work and support the Company's business growth, and ensures that our personnel are equally and fairly treated in terms of nationality, religion, race and educational institutions, and

their employment conditions are fair and appropriate to market circumstances and labor laws.

### 8.2.1.1 Personnel Categorized by Positions

Table of personnel categorized by positions as at December 31, 2018

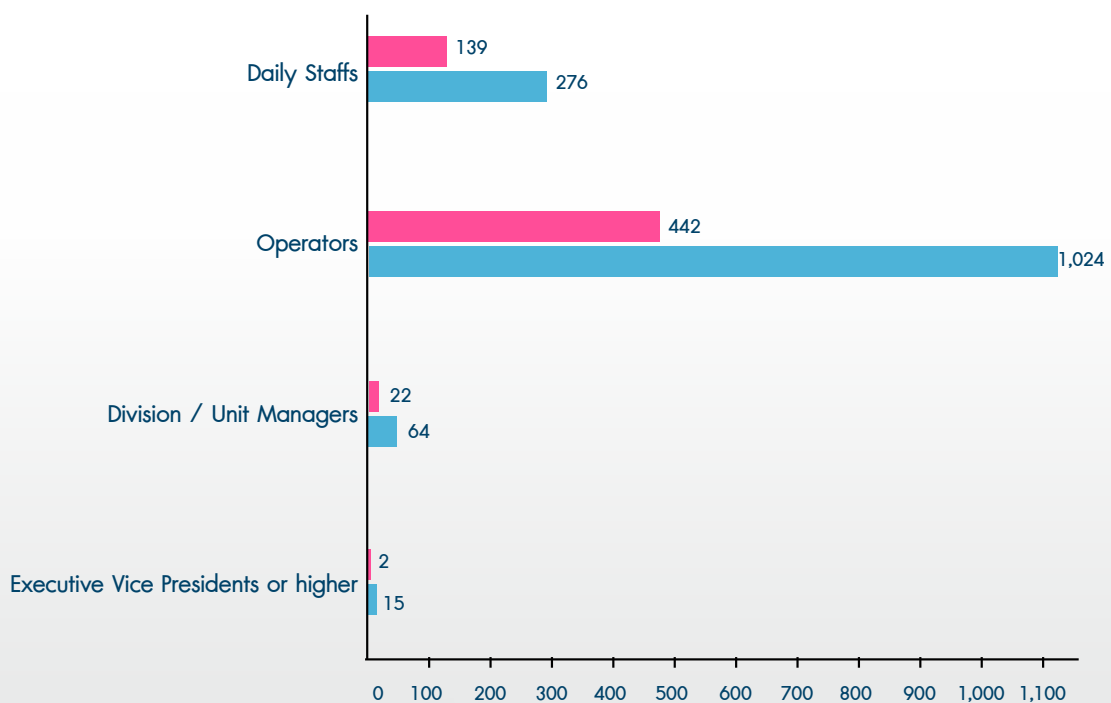
## Personnel Categorized by Positions



Female



Male



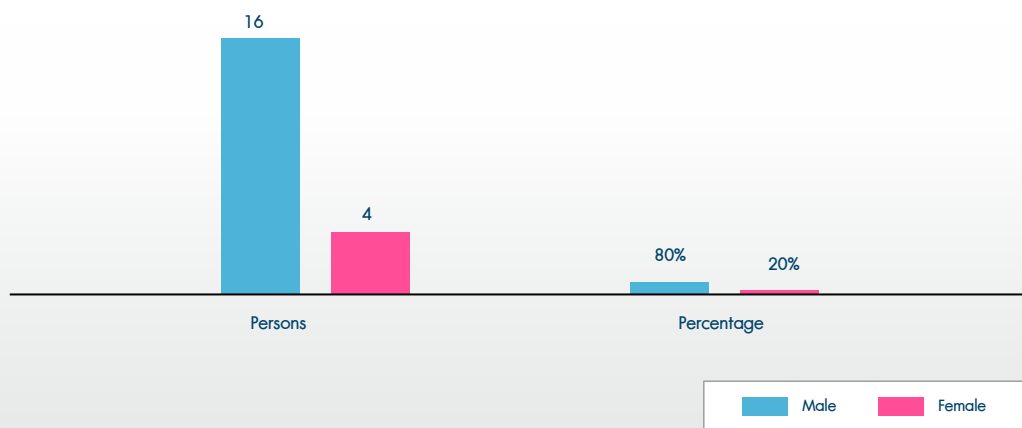
### 8.2.1.2 New Personnel Categorized by contracts, gender, age and sites

Table of new personnel in 2018 categorized by contracts, gender, age and sites

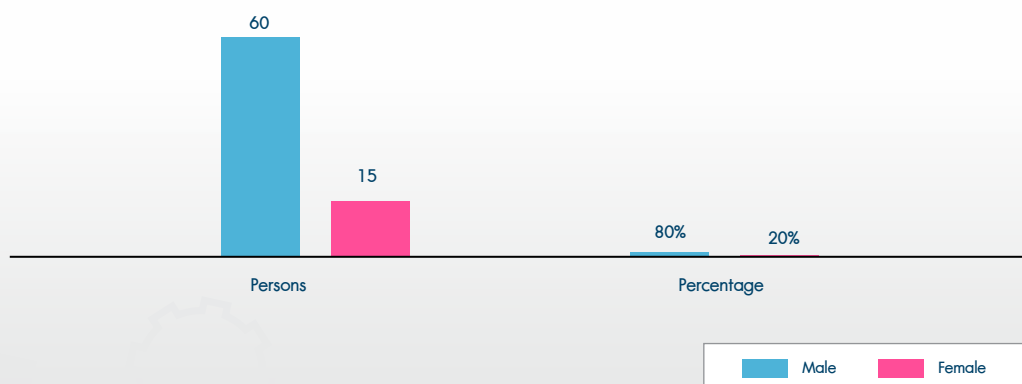
#### New Personnel categorized by gender



##### Monthly



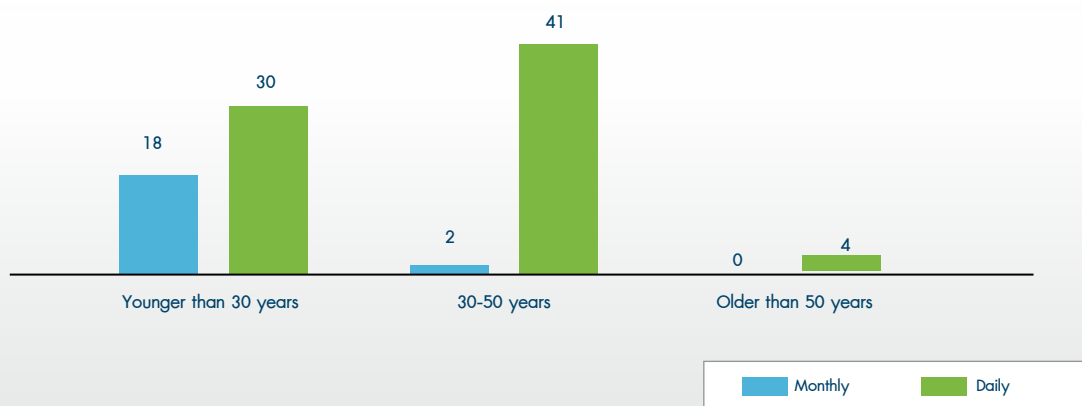
##### Daily



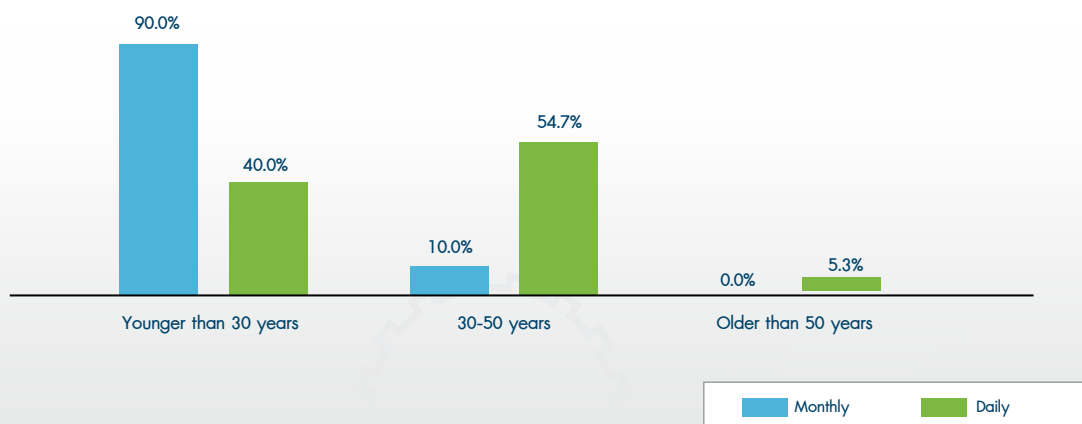
## New Personnel categorized by age



### New Personnel (Persons)



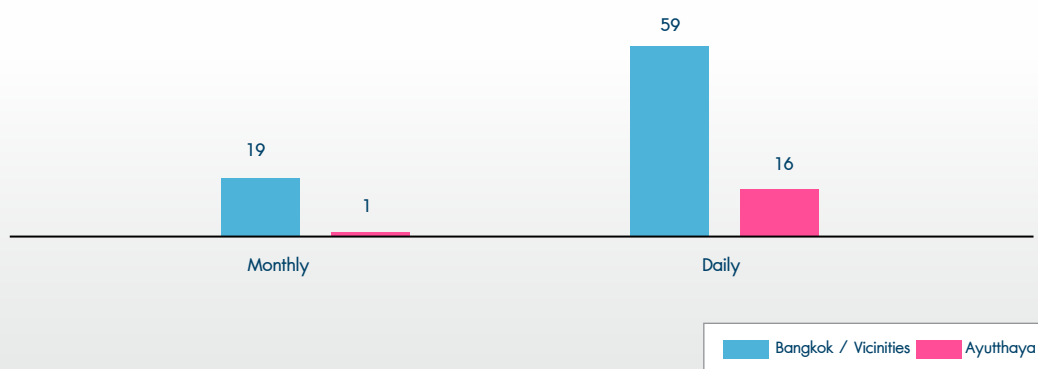
### New Personnel (Percentage)



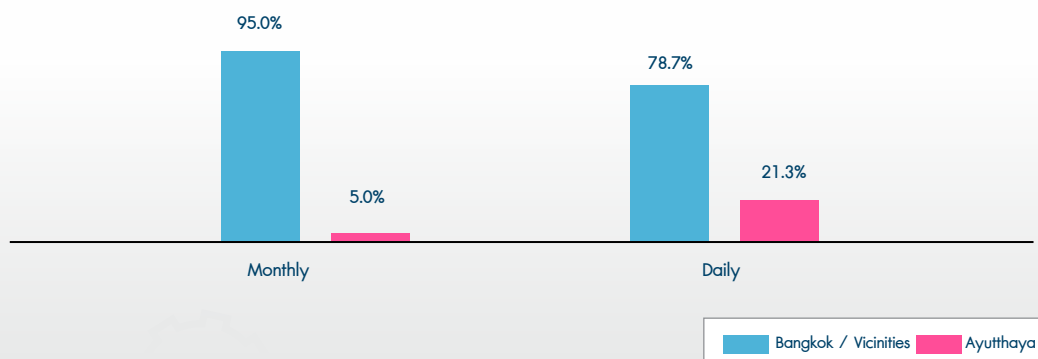
## New personnel categorized by sites



### New Personnel (Persons)



### New Personnel (Percentage)





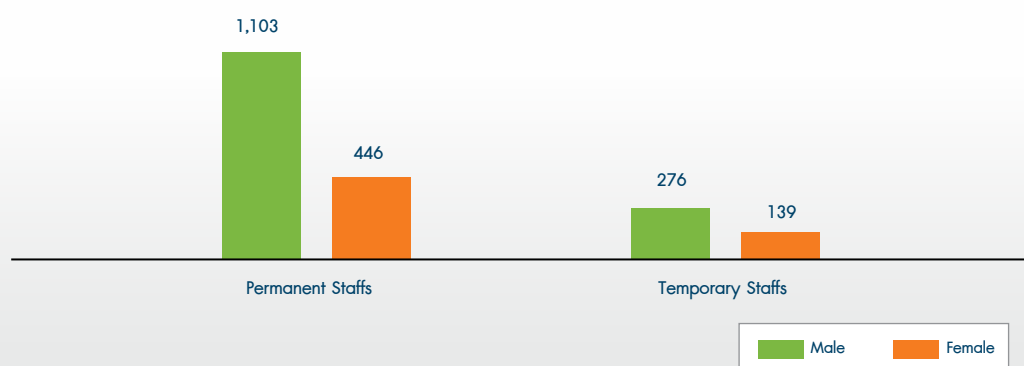
### 8.2.1.3 Personnel Categorized by contracts, gender, age and sites

Table of personnel categorized by contracts, gender, age and sites

#### Personnel categorized by contracts



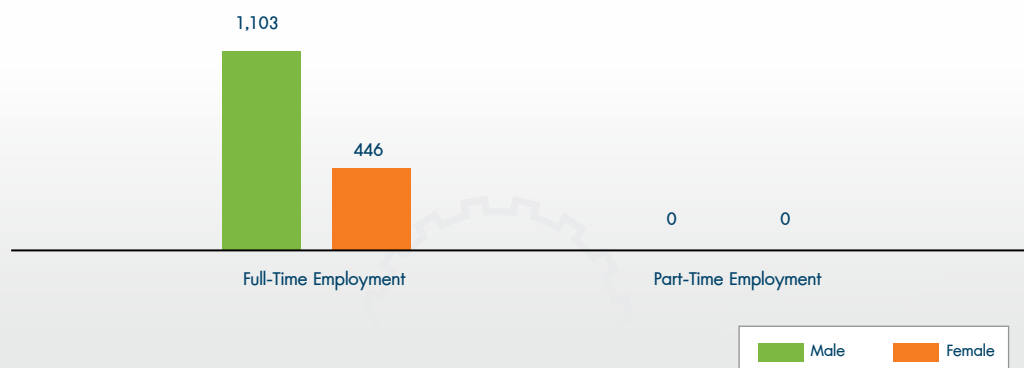
#### Personnel categorized by contracts



#### Personnel categorized by employment contract : Monthly



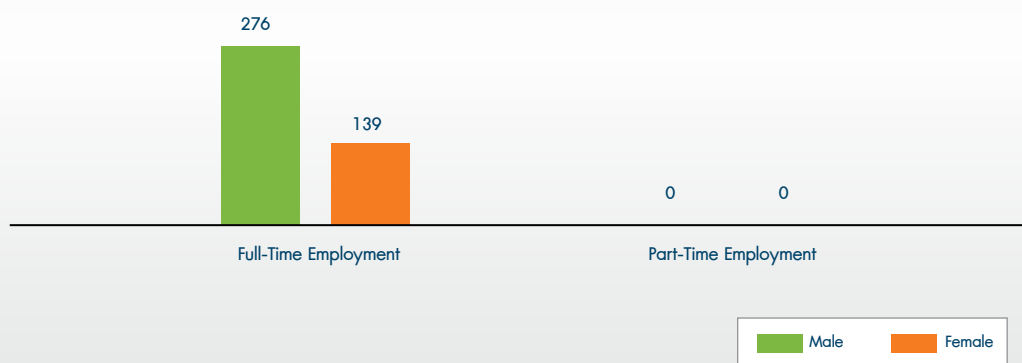
#### Monthly Staffs



## Personnel categorized by employment contract : Daily



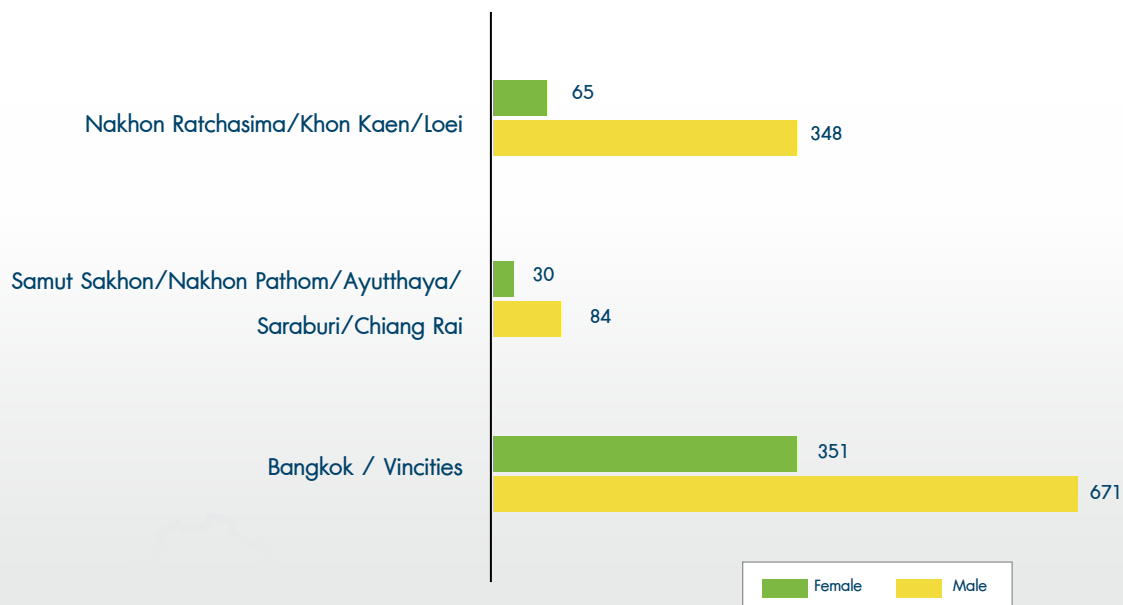
### Daily Staffs



## Personnel categorized by sites : Monthly



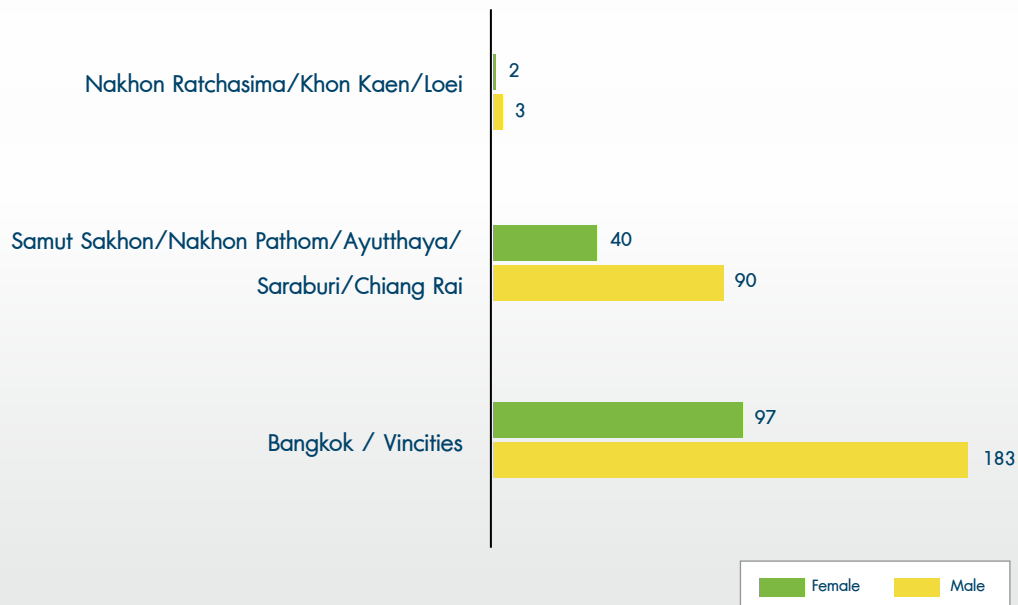
### Monthly Staffs



## Personnel categorized by sites : Daily



### Daily Staffs



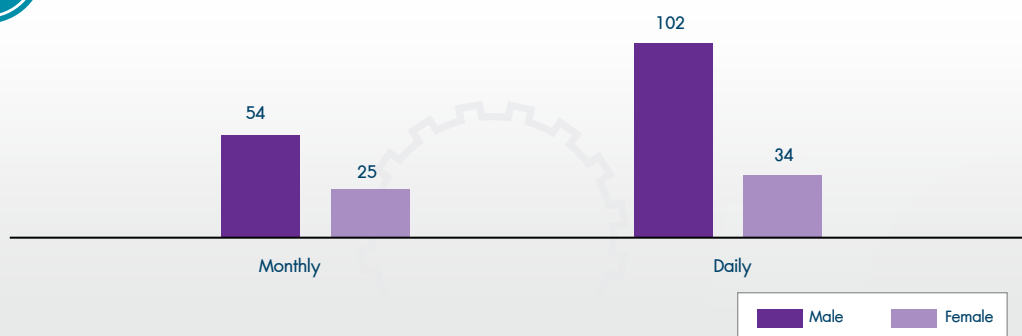
#### 8.2.1.4 Retirement personnel categorized by contracts, gender, age and sites

Table of retirement personnel categorized by contracts, gender, age and sites in 2018

### Retirement personnel categorized by gender

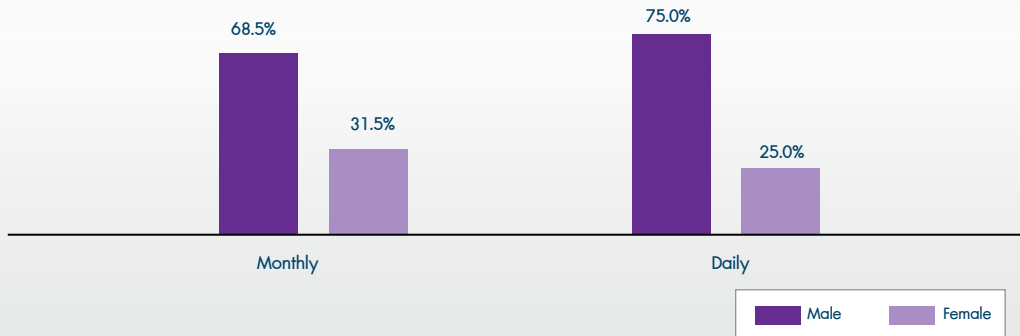


### Retirement Staffs (Persons)





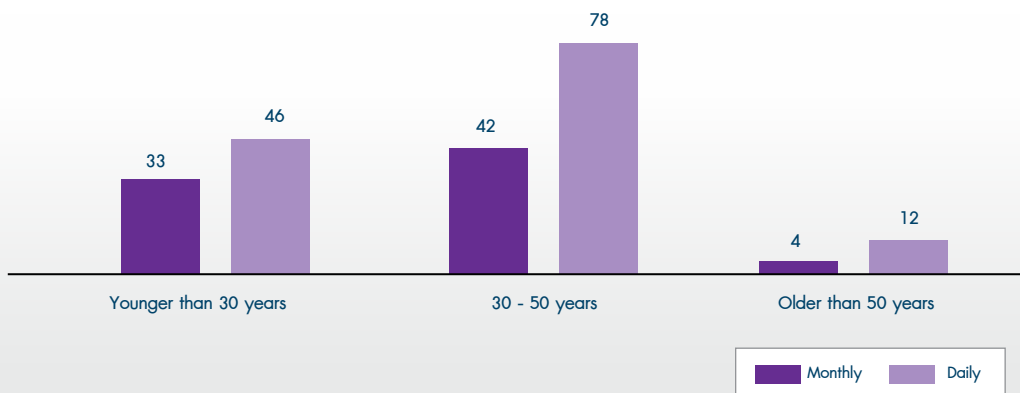
### Retirement Personnel (Percentage)



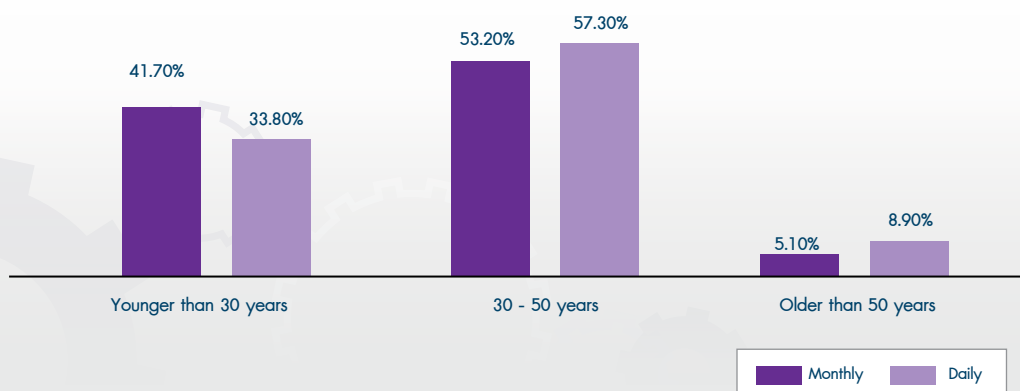
### Retirement personnel categorized by Age



### Retirement Staffs (Persons)



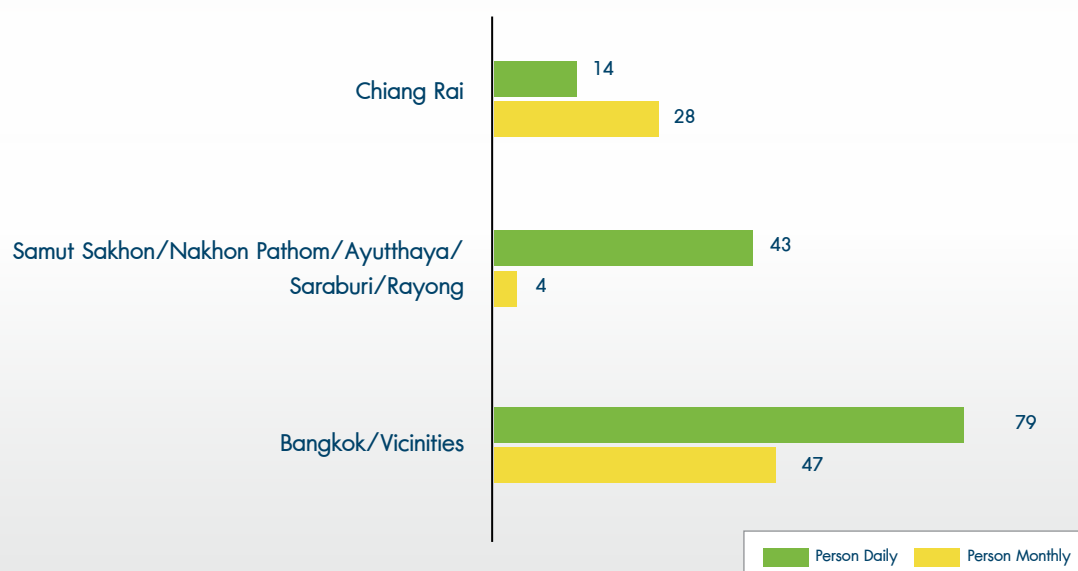
### Retirement Staffs (Percentage)



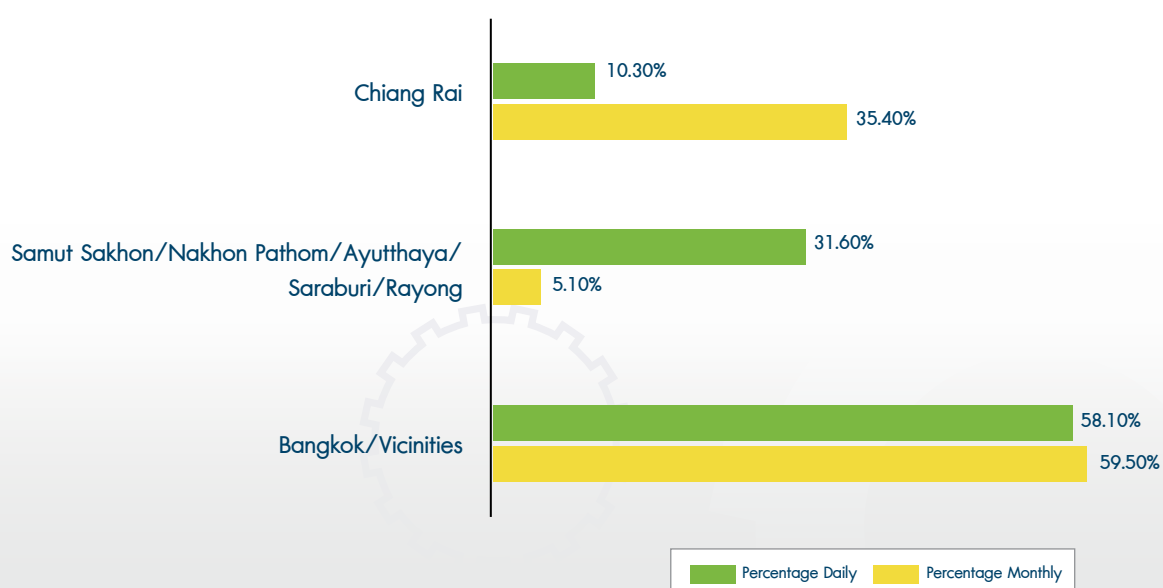
## Retirement personnel categorized by Sites



### Retirement Personnel (Persons)



### Retirement Personnel (Percentage)



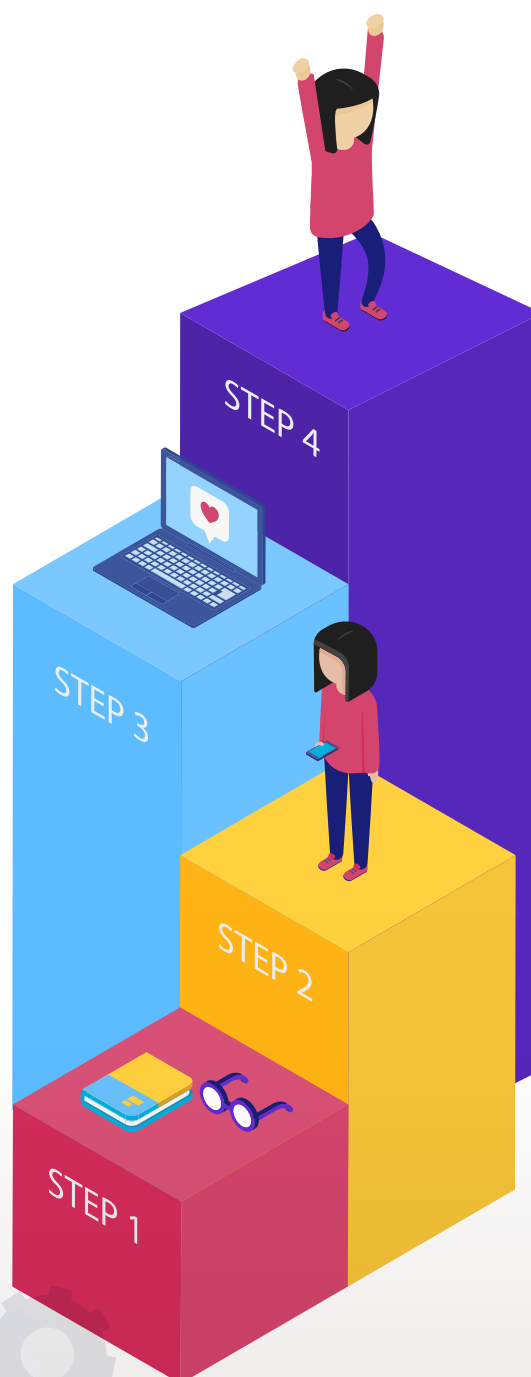
#### 8.2.1.5 Personnel Development

The Company has arranged for development of personnel continuously. The management highly values development of the capability and potential of employees in respect of management skill, teamwork building, and learning of specific professional technique. That includes encouragement for employees to have knowledge of information technology and foreign language, and supports the employees to learn and self-develop continuously. The Company also has a plan to develop the human resources administration system by having expert consultant study and develop the structure and back-up systems, such as organizational structure, nature of work, training plan, assessment of employee's performance, career path and succession plan, etc., in order to help the personnel to be able to work efficiently and receive remuneration that is fair and competitive in the market. With respect to directors and management, the board of directors and the executives hold it important to participate in training or seminar in various courses or to develop capability. Most of the Company's directors have passed training in certain courses with the Thai Institute of Directors (IOD), namely:

- Director Certification Program (DCP)
- Director Accreditation Program (DAP)
- Audit Committee Program, etc.

The Company has regularly coordinated with IOD to send our directors to attend IOD training courses. The Company also coordinates with Thai Institute of Directors Association consecutively in sending directors to participate in training courses provided by IOD. Besides, the Company also has its directors and executives learn about modernized administration technique, such as

building the learning organization, change management, etc., which certifies that the Company intends to develop its personnel to keep pace with change in technology and business nature that competes more severely on the part of employees and management, including the structure and back-up system in order to create consistency in the administration of the whole organization.



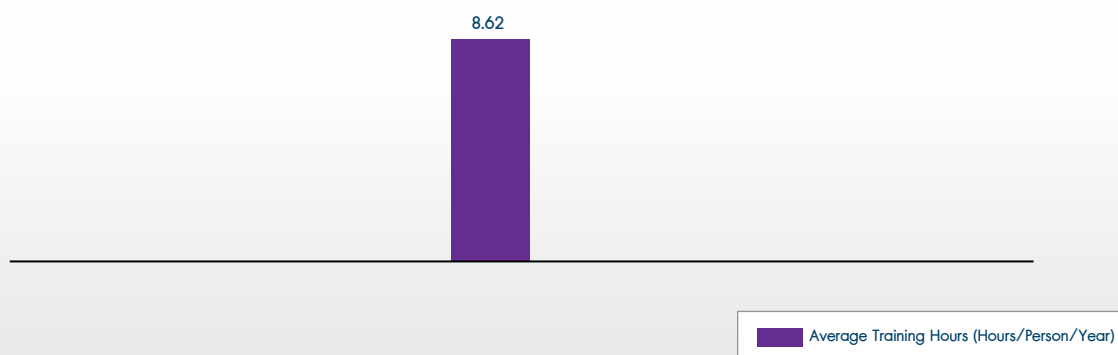
### 8.2.1.6 Training Hours

To ensure work efficiency and staff development from the levels of operators to management in line with the Company's development, the number of training hours of staff in 2018 are displayed below.

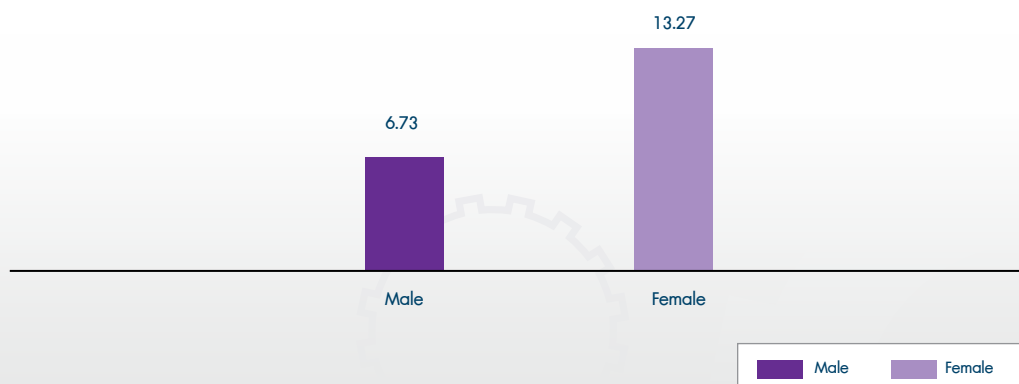
#### Average Staffs Training



#### Average Training Hours (Hours/Person/Year)



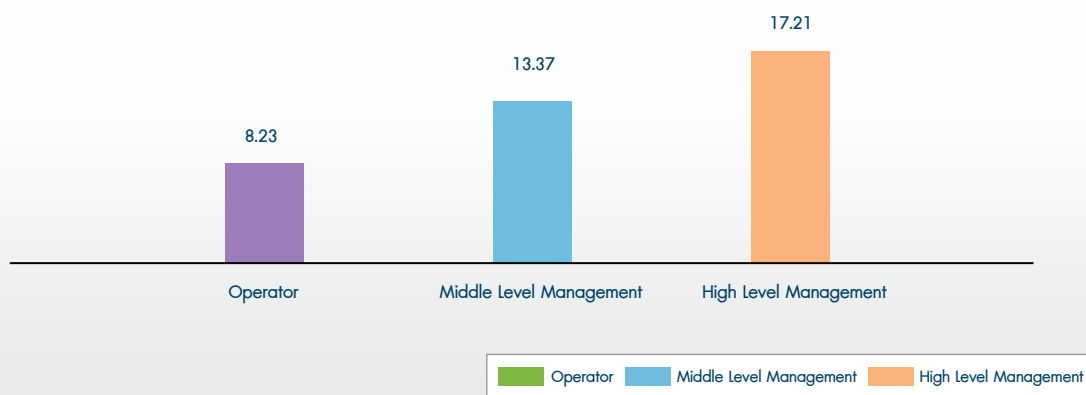
#### Average Training Hours by Gender



## Average Training Hours by Staffs Level



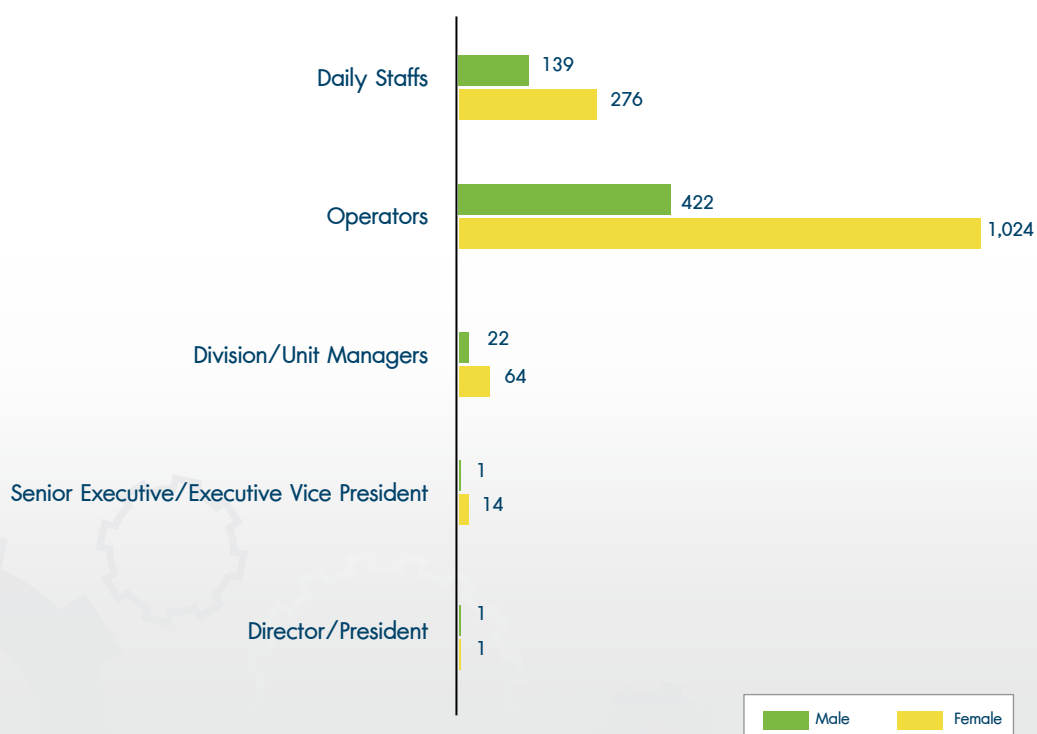
### Average Training Hours by Staff Level



## 8.2.1.7 Table of Personnel Categorized by Gender, Age, Position (As of December 31, 2018)



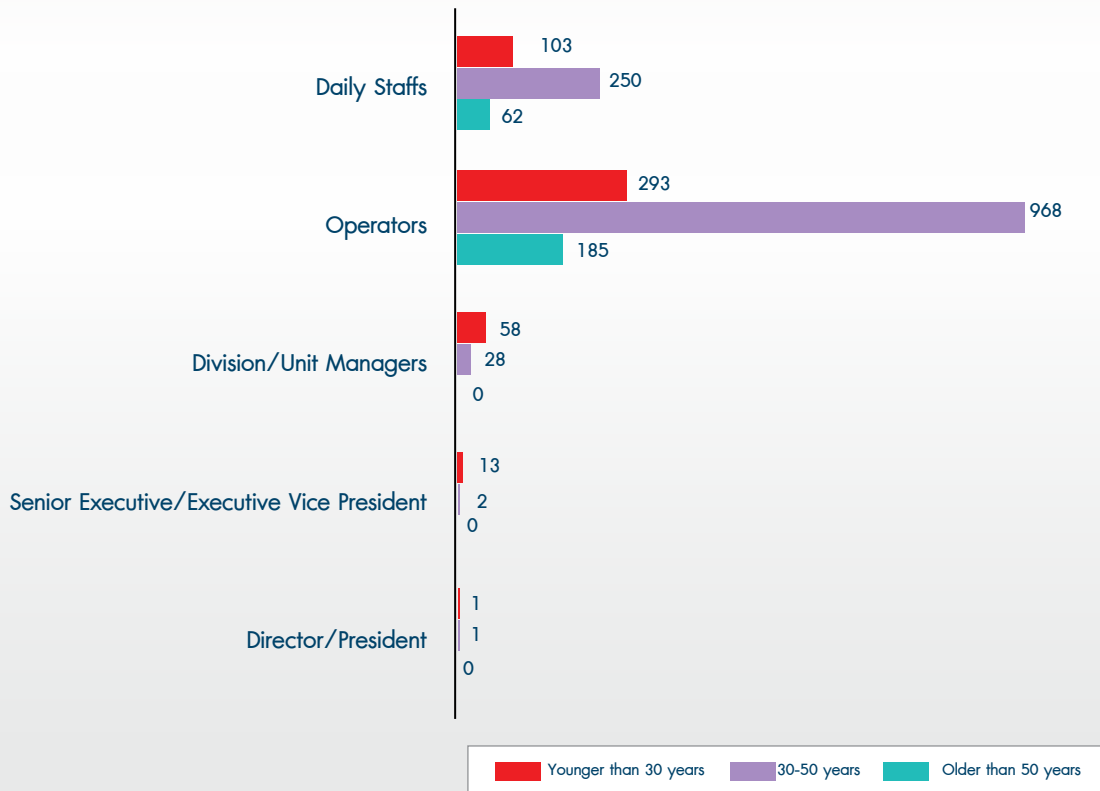
### Personnel Categorized by Gender Position







## Personnel Categorized by Age Position



### 8.2.2.1 Occupational Safety and Health Management

CH. Karnchang realizes that operating the construction must be accompanied by realization of safety and occupational health. Therefore, the policy on safety has become one of the core policies of the Company to direct the operation to safety and efficiency in every step, and to prevent and reduce loss from accident that may incur by employees according to the Safety, Occupational Health and Working Environment Act. Consequently, CH. Karnchang values the policy on safety and holds it as the highest standard so as to secure safety and to control the loss from accident efficiently by doing the following:

1. Taking responsibility in terms of safety and occupational health.
2. The employees and persons concerned of the project must realize that safety is the duty of everyone.
3. In any operation, safety and occupational health must be included in the work plan.
4. In any operation, there must be risk assessment.
5. Promoting the matter of safety and occupational health by arranging training and providing knowledge to all employees.
6. Improving the policy on safety continuously to give assurance on the matter of safety and occupational health.

CH. Karnchang intends to follow the prescribed policy. It is determined to operate with safety according to the law on safety and occupational health of Thailand, the details of which have been incorporated in the management plan with respect to safety and occupational health.

All employees of CH. Karnchang have realized the care with respect to health and safety of the employees and persons concerned in the operation. The management of safety and occupational health is held as a factor in the construction management of CH. Karnchang to be carried out along with the creating the performance of quality.

In addition to the above, sub-contractors of CH. Karnchang must also comply with the provisions of labor law of Thailand. In case there is a sub-contractor in the project and subject to the terms of the construction contract of the Company, the primary sub-contractor is obligated to require the sub-contractor to strictly comply with the provisions of the work plan on safety and occupational health. The sub-contractor must do the following:

1. The sub-contractor has the duty to conduct an orientation session on safety to all employees.

The information of the orientation session must be recorded and delivered to the safety office of the Project Office.

2. Ensuring that all employees have been aware of the policy on safety, and providing manual on safety and occupational health to the employees.

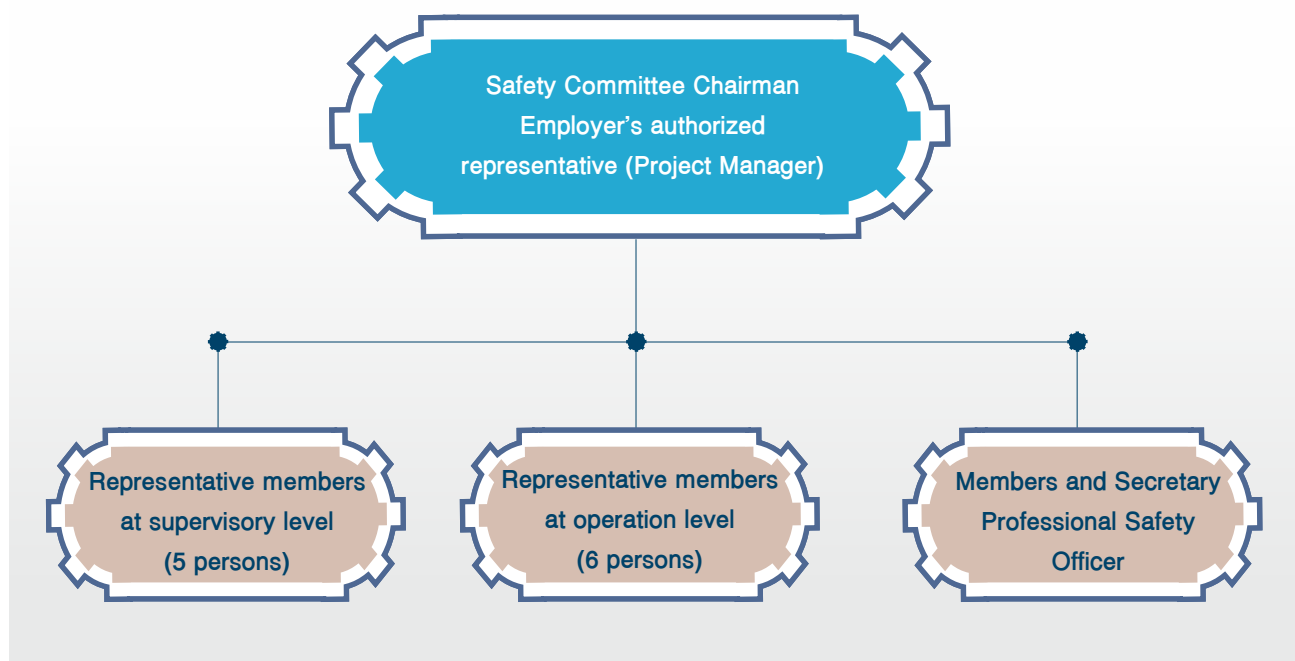
3. The information, advice, training and care must be in place in order that all employees are safe from injury and from the risk of danger to health.
4. Danger prevention equipment must be provided and followed up so that the equipment are used and maintained properly.
5. Collecting data and logging injuries arisen from work.
6. In case of accident, investigation must be conducted and a report thereof must be prepared precisely, and verification must be done to ensure that the rectification has been carried out correctly and suitably.



### Safety Duties and Responsibilities

All construction projects will appoint an occupational safety, health and environment committee to lay down standards and implement policies. The committee will meet once a week.

### Organization Chart of Safety Committee in Construction Project of CH. Karnchang Public Company Limited



The Safety Committee will comprise not less than 11 members, as follows:

| Position person (s)<br>Description | Position person (s)<br>Description | Position person (s)<br>Description   |
|------------------------------------|------------------------------------|--|
| Chairman                           | 1                                  | The employers' authorized person, namely, project manager  |
| Committee Members                  | 11                                 | 5 persons appointed as representative members at supervisory level 6 persons selected as representative members at operation level |
| Member and Secretary               | 1                                  | Professional Safety Officer  |

In addition, CH. Karnchang has required all construction projects to prepare staff construction safety manuals or work safety manuals in accordance with the Quality Management Systems (ISO 9001/2008) and related regulations, with a target of not less than 300,000 hours non-lost time injury, which will be monthly measured and monitored. Moreover, the Company also provides safety training for staff and contractors performing works in project sites, including campaigns for operators' proper and safe performance.

#### 8.2.2.2 Safety Training for Staff

##### 1. Safety Training for Staff at Head Office

CH. Karnchang arranges for initial fire drill and evacuation for staff once a year, conducted by training officers from Leader Fire Systems Co., Ltd., and prepares a fire evacuation plan, instructions in case of a fire, and training for initial fire fighting.



## 2. Safety Training Staff at Project Sites

### 2.1 Safety Training at Project Sites

Staff at project sites are provided with training and retraining in the following courses:

| Training Subjects  | Time       | Trainer                                       | Certifier  |
|--|------------|---|--|
| Wood, cement and steel work                                  | 15 minutes | Safety Officer, Supervisor                    | Chief Site Engineer  |
| Digging work   | 15 minutes | Safety Officer, Supervisor                    | Chief Site Engineer  |
| Gas cutting work (compressed gas tank)                       | 15 minutes | Professional Safety Officer,<br>Site Engineer | Chief Site Engineer  |
| Welding work   | 15 minutes | Professional Safety Officer,<br>Site Engineer | Chief Site Engineer  |
| Piling work  | 15 minutes | Professional Safety Officer,<br>Site Engineer | Chief Site Engineer  |
| Earth wall   | 15 minutes | Professional Safety Officer,<br>Site Engineer | Chief Site Engineer  |
| Relocation of equipment by<br>mobile cranes or cranes        | 1-6 hours  | Speaker (Outsourced)                          | Department of Labour   |
| Scaffolding  | 30 minutes | Professional Safety Officer,<br>Site Engineer | Chief Site Engineer  |
| Temporary electricity  | 30 minutes | Professional Safety Officer,<br>Site Engineer | Chief Site Engineer  |
| Demonstration of using self-contained<br>breathing apparatus | 1 Day      | Site Engineer                                 | Trainer from training<br>center of Safety<br>Promotion Association |
| Training on crane signaling                                  | 1 Day      | Crane operator of<br>CH. Karnchang            | Professional Safety<br>Officer                                     |
| Training on using of portable<br>fire extinguisher           | ½ Day      | Professional Safety Officer                   | Professional Safety<br>Officer                                     |
| CPR training and patient transportation                      | ½ Day      | Professional Nurse                            | Professional Nurse   |

**Note:** Training for new staff and retraining for existing staff will be conducted once every three months.

## 2.2 Training for employees working in confined space

CH. Karnchang has construction operation in the project of MRTA Blue Line (Extension Portion), Bang Sue-Tha Phra Section and Hua Lamphong-Bang Khae Section under Contract 2. It involves underground construction and, therefore, necessary to provide knowledge to employees regarding working in confined space.

“Confined space” means an area that has limited opening for entry and exit with insufficient ventilation to keep the air inside in good condition and safe and may contain poisonous chemicals, inflammable substance, including oxygen, such as tunnel, cave, well, pit, basement, vault, oil tank, fermentation tank, silo, pipe, oven, container and the like (Ministerial Regulation prescribing standard for

administration and management of safety, occupational health and the environment for working in confined space, effective on 7 December 2004), and Section 38 of Labor Protection Act B.E. 2541 provides as follows. “No female employee shall work in mining or construction work which must be done underground, under water, within a cave or tunnel or crater in order to prevent the employee from being injured from working in the confined space that may lack the air for breathing or endangered from poisonous substance.” Training courses for employees working in confined space will be provided only with respect to the MRTA Blue Line (Extension Portion), Bang Sue-Tha Phra Section and Hua Lamphong-Bang Khae Section, as follows.

| Training Subjects  | Time          | Trainer  | Certifier  |
|--|---------------|--|--|
| Working in confined spaces   | 30 minutes    | Professional Safety Officer,<br>Site Engineer                        | Chief Site Engineer  |
| Training for assistant<br>in confined space  | 1 Day         | The safety and health<br>at work promotion<br>association (Thailand) | The safety and health<br>at work promotion<br>association (Thailand) |
| Training on tying knot with rope   | 1 Day         | The safety and health<br>at work promotion<br>association (Thailand) | The safety and health<br>at work promotion<br>association (Thailand) |
| Training on using self-contained<br>breathing apparatus (SCBA)<br>association (Thailand) | 1 Day         | The safety and health<br>at work promotion                           | The safety and health<br>at work promotion<br>association (Thailand) |
| Training on using gas detector   | 10-15 minutes | Professional   | Safety Officer   |
| Rehearsal of tunnel<br>emergency plan  | ½ Day         | Professional   | Safety Officer   |



## 8.3 Human Rights

### 8.3.1 Staff of CH. Karnchang

CH. Karnchang realizes the importance of staff at all levels and thus imposes a human resource management policy in line with human rights and labor rights, so as to ensure fair and equal treatment of staff, and allow for staff's right to freedom of opinion or submission of complaints on various matters on an anonymous basis.

### 8.3.2 Human Rights of Traders

CH. Karnchang supports our traders, namely, vendors, contractors, suppliers, which respect human rights and are socially responsible. The Company will select such traders which engage in business in compliance with laws, rules and regulations of the government, comply with labor laws and safety laws, treat their employees based on ethics and with respect for human rights, and refrain from child labor.

CH. Karnchang does not rely on any specific trader and treats all traders equally and fairly without discrimination of any kind, such as, race, gender, nationality, political opinion or social background. CH. Karnchang allows all traders to submit price proposals on the same standard or conditions. The Company also provides a whistleblowing mechanism or channel for submission of complaints as to any traders' violation of law or human rights, so as to mitigate any impact pertaining to violation of human rights.

In 2018, neither reports nor complaints were made on traders' violation of human rights. CH. Karnchang will update agreements and contracts to cover human rights issues and to comply with the laws, rules and regulations of the government, labor laws and safety laws.

## 8.4 Anti-Corruption

### Anti-Corruption Practices and Measures


CH. Karnchang is determined to operate business with integrity and fairness, adhere to anti-corruption policy, fully comply with the laws and related regulations, and take into account interests and impact from the organization's operations on stakeholders. The Company has also include such anti-corruption policy in the Company's code of business ethics to ensure that staff perform their assigned duties with integrity.

CH. Karnchang imposes measures on disciplinary actions under the Company's rules, regulations and procedures for any fraud and/or failure to comply with the rules and regulations. In case of any acts which may be considered a breach of duty, such acts are considered a severe misconduct, which will be subject to dismissal as well as both civil and criminal actions.

Moreover, CH. Karnchang provides a channel for staff to submit any complaints on unfair treatment or report on possible leads concerning illegal acts, and carries out corrective actions, including measures to protect staff who submit such complaints as well as systematic and proper procedures for notification of the results to the complainants. In 2018, no corruption cases were reported in the Company.

### Anti-Corruption Practices

The Board of Directors determines an anti-corruption and bribery policy to prohibit any bribe payment for the Company's business interest or granting of any items or any other benefits to any persons having a duty or business related to the organization for the Company's



business interest. It is clearly set out as a guideline to prevent any problems due to corruption and unfairness in the business operation, such as, compliance with prohibitions, action plans or internal control measures, morality, and work supervision, as a duty of staff at all levels in the Company, as well as monitoring code of ethics, morality and action plans or measures in work supervision relating to anti-corruption and bribery, including authority and duty to report on various matters directly to the Company's independent unit for inspection and monitoring, based on the following practices:

1. Staff are prohibited from giving or offering any items or any other benefits to any persons, e.g., government officials, agents, traders, any persons related to the Company's business, with an intention to persuade such persons to act or omit to act in violation of the laws or in breach of their duties or in exchange for any undeserved privileges.

2. Staff are prohibited from demanding or accepting any items or any other benefits for personal interests or others in any manner which persuade such staff to unduly perform or omit to perform the duties.

3. Staff of the Company should not neglect or ignore any potential corruption actions against the Company, whereby such actions must be reported to supervisors or the responsible persons, and provide cooperation in the fact finding and investigation process. All questions relating to this clause should be referred to supervisors through specified channels for discussion.

4. The Company will ensure justice and protect staff who refuse or report on possible corruptions to the Company by means of protection measures for complainants or staff who provide cooperation in corruption reporting.

5. All business transactions in collaboration with agencies, whether government agencies, state enterprise or private sector, etc., both local and international, must be transparent, fair and legal.

#### Anti-Corruption Missions of the Company

1. The Company implements the anti-corruption policy which covers the human resources management process, starting from recruitment or selection, promotion, training, staff evaluation and rewards. Supervisors are tasked to communicate with staff on such policy in order to efficiently ensure their compliance in business activities under their responsibility and supervision.

2. The Company communicates with and provides training to staff to ensure their knowledge relating to the anticorruption policy and practices.





## 9. Development and Impact from Infrastructure Investments

Based on our vision, missions, values and strategies towards a steady and sustainable growth, CH. Karnchang has been selecting such construction and investment projects in infrastructure systems which are useful to society and the country, from the past, e.g., Rama 9 Bridge, Phuket Berthing Facilities, Don Mueang Airport, M.R.T. Chaloem Ratchamongkhon Line, until the present. CH. Karnchang remains committed to our business practices, as evidenced by the following projects:

### 9.1 Development of Double-Track Railway for Transportation and Logistics Management (Urgent Phase) from Thanon Chira Junction to Khon Kaen

#### Project Description

In the construction project of the double-track rail route from Chira Junction to Khon Kaen, a new 187 km. track is to be constructed on the right (the eastern track) in parallel with the existing track with a view to enhancing the capacity, speed and safety of the service. All the intersections with roads are to be demolished and replaced by elevated tracks at appropriate locations. Most of the route is land-leveled, except the elevated tracks at the area around Khon Kaen station. The route consists of 19 passenger stations and 7 halts.

#### Objective

To enhance the railway transportation system by decreasing transportation time and increasing logistics efficiency in transporting export goods by train in containers, reducing pollution in the environment and reducing road accidents.

#### Project Description

##### 1. Route Alignment

The project of double-track railway system for transportation and logistics management (urgent phase from Thanon

Chira Junction to Khon Kaen) involves the construction of a new 187 km track on the right (eastern) in parallel with the existing track with the 6 meter space between the new track and the existing track. The total width of the railway area is 80 meters, except that at the area around the stations, which is 80-200 meters wide, depending on each area. Most of the route is land-leveled, except the elevated tracks at the area around Khon Kaen station. The route consists of 19 passenger stations and 7 halts.

The project starts in the area at the back of Chira Junction and goes north passing mostly agricultural plateau areas along the route until reaching the back of Khon Kaen station.

#### 2. Structures

The route consists of 19 passenger stations (all are land-leveled, except Khon Kaen station, which is elevated) and 7 halts, as follows:

- 1 big main station - Khon Kaen station
- 2 main stations - Bua Yai Junction station, and Mueang Khong station
- 3 medium-sized stations — Non Sung station, Mueang Phon and Ban Phai station
- 13 small stations - Ban Ko station, Ban Kradon station, Nong Maeo station, Ban Dong Phlong station, Ban Makha station, Phon Songkhram station, Ban Don Yai station, Non Thong Lang station, Nong Bua Lai station, Nong Makhuea station, Ban Han station, Ban Haet station, and Tha Phra station
- 7 halts - Nong Kan Nga, Noen Thua Paep, Ban Rai, Huai Rahat, Noen Sawat, Sala Din, and Nong Mek

### 3. Container yards

The route consists of 3 container yards at Ban Kradon station, Bua Yai Junction station, and Tha Phra station. The container yard at Ban Kradon station is to be newly

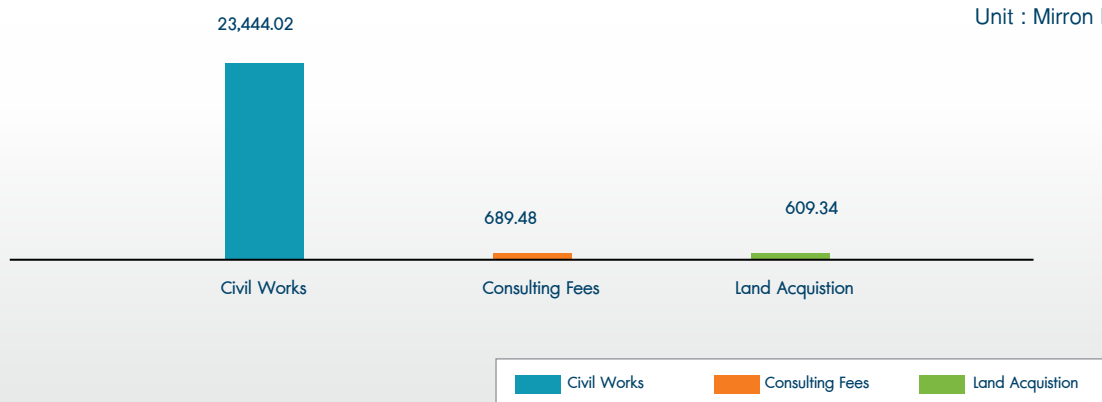
built and used instead of the one at the station in Ban Ko, which is a populous community, to accommodate growing transportation needs in the future.



## Investment Budget

### Investment Budgets

Unit : Million Baht



### Social Benefits

1. Make communication and transport more convenient as it will help ease traffic jam, which will affect quality of life of the people.
2. Reduction of car fuel consumption.
3. Reduction of time spent in transportation, which will benefit the country's economy

### Economic Benefits and Development

| EIRR   | Economic Benefit (Mil. Bath) | FIRR  | B/C Ratio |
|--------|------------------------------|-------|-----------|
| 24.55% | -                            | 5.90% | -         |

## 9.2 The MRT Orange Line, Thailand Cultural Center - Min Buri Section

### Project Description

An underground railway system for 30.6 kilometers with 23 underground stations. And an elevated railway system for 9.2 kilometers with 7 elevated stations.

### Objective

The Mass Rapid Transit Authority of Thailand (MRTA), Ministry of Transport, The Kingdom of Thailand is implementing the MRT Orange Line (East section) Project, Thailand Cultural Centre-Min Buri (Suwinthawong) as part of Thailand's government policy to develop urban rail transit network to improve the quality of Bangkok people's life, vicinity traffic congestion, improve the environment condition and reduce fuel energy consumption.

### Route Alignment

The MRT Orange Line starts from Thailand Cultural Centre station to MRTA Station and continue under Rama9 Road to Praditmanutham Station and turn left at the Rama9 Intersection continue along Ramkhamhaeng Road passing Lam Sall Intersection and underground structure terminated near Summakorn Station which is the connection point of the underground and elevated structure, the elevated structure begins to continue to Khlong Ban Ma Station by passing, Kanchana Pisek Road and this East Section terminated at Suwinthawong Station near

Ram Khamhaeng 196. The Depot is located in MRTA area, Huaikhwang, Rama9 Road and the Park & Ride building is located near Khlong Ban Ma Station.

### Structure

For underground section, the typical structure is twin tunnel. And for elevated section, a typical structure is a twin-track viaduct deck supported by a row of single piers with a span of 30 meters long. However, where the single-column structure is not possible, portal frames structure will be adopted.

### Station

- 1.1 An underground railway system with 23 underground stations, consist of Thailand Cultural Centre Station, Mass Rapid Transit Station, Praditmanutham Station, Ramkhamhaeng 12 Station, Ramkhamhaeng Station, Rajamangala Station, Hua Mak Station, Lam Sali Station, Sri Burapha Station and Khlong Ban Ma Station.
- 1.2 An elevated railway system with 7 stations, consist of Summakorn Station, Nomklao Station, Rat Phatthana Station, Min Phatthana Station, Kheha Ramkhamhaeng Station, Min Buri Station and Suwinthawong Station.

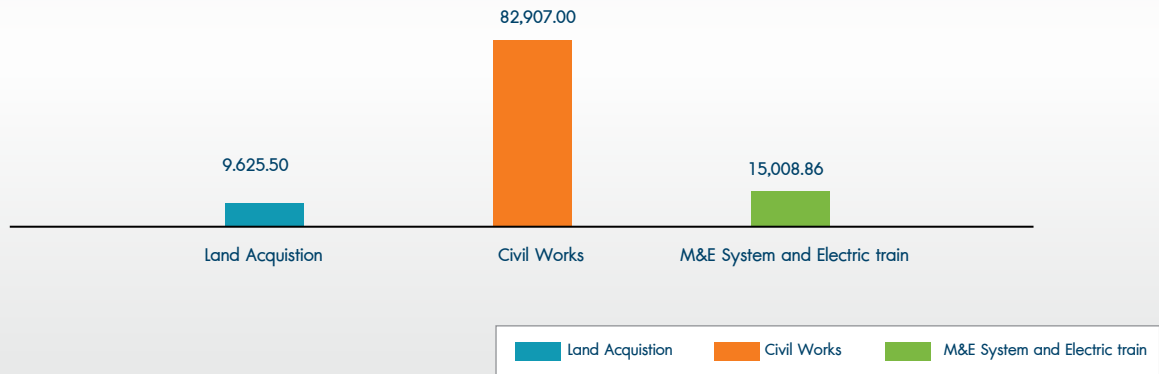




## Investment Budget

### Investment Budget

Unit : Million Baht



### Passenger Forecast

(Unit : Person/Day)

| Year                              | 2023    |
|-----------------------------------|---------|
| Thailand Cultural Centre-Min Buri | 480,000 |

### Economic Benefit and Development

| Project   | EIRR   | NPV                    | B/C Ratio |
|---|--------|------------------------|-----------|
| The MRT Orange Line,<br>Thailand Cultural Centre-Min Buri Section | 13.96% | 15,185<br>Million Baht | 1.24      |

Note : Environment Impact Assessment Report (EIA)

### Social Benefits

1. Make communication and transport more convenient as it will help ease traffic jam, which will affect quality of life of the people.
2. Reduce travelling costs of the people.
3. Help the growth of business, trade and investment, which will help people to find jobs, as there will be employment during construction of the project.
4. Development of the project will help the people in terms of access to public health service as it will allow the people to travel to the nursing place more conveniently.
5. Pollution from vehicles will be reduced and so decreasing risk factor that causes sickness.

Note : CH. Karnchang Public Company Limited carries out construction of the MRT Orange Line Project, Thailand Cultural Centre-Min Buri Section, under three contracts, i.e.,  
Contract 1 : Underground Civil Works, Thailand Cultural Centre-Ramkhamhaeng12  
Contract 2 : Underground Civil Works, Ramkhamhaeng12 — Hua Mak  
Contract 5 : Depot and Park Ride

## 9.3 Community Development

### 9.3.1 Community Relations

#### • Double-Track Railway for Transportation and Logistics Management (Urgent Phase, Chira Junction-Khon Kaen Section)

As this double-track railway for transportation and logistics management project did not involve any land acquisition in the construction zones, there was no impact to the communities in the surrounding areas. Regardless, CH. Karnchang places importance on carrying out every phase of its construction activities with mindfulness of potential impacts on society, the environment, and quality of life for community residents. As such, in 2018 the Company engaged in the following community relations activities.

#### • National Children's Day 2018 Event

On 13<sup>th</sup> January 2018, CH. Karnchang, in cooperation with CKCH Joint Venture, organized the Children's Day 2018 event.



#### • Contribution of Drinking Water to Department of Highways

CH. Karnchang Public Company Limited, by CKCH Joint Venture, contributed drinking water to Department of Highways, Office of Highway No. 7 (Khon Kaen Province) for further servicing to people travelling during the Songkran Festival and official based at check-points in April 2018.





#### • Contribution to Library Construction

CH. Karnchang Public Company Limited, by CKCH Joint Venture, contributed money to Baan Pon Songkhram (Phaengrat Rassadorn Vidhya) School for which the construction of the library was completed and the opening ceremony for its use was carried out on 21 September 2018.



#### • Contribution of Drinking Water Activity

CH. Karnchang Public Company Limited, by CKCH Joint Venture, contributed 10,000 bottles of drinking water in the organizing of the "Bike Oun Rak" biking event at the Khon Kaen Provincial Commercial Office. The event was aimed for promoting awareness on physical well-beings through exercises while nourishing love and unity within the families and society, held on 9 December 2018.



#### • Contribution of Supplies and Equipment for Improvement of Home for Disabled

CH. Karnchang Public Company Limited, by CKCH Joint Venture, contributed supplies and equipment for improvement of the home for disabled, Tambon Tha Phra, Amphoe Muang, Khon Kaen Province, under the "1 Tambon Fixed, 1 Tambon Constructed" Project of the Ministry of Social Development and Human Security.



#### • Contribution of Dried Food, Household Items Activity

CH. Karnchang Public Company Limited, by CKCH Joint Venture, contributed dried food, household items and drinking water for further delivery and visits to the elders, disabled and bed-bound patients at Tha Phra District, Khon Kaen Province in December 2018.





### • Joint Improvement of Landscape of the Provincial Electricity Authority

CH. Karnchang Public Company Limited, by CKCH Joint Venture, jointly improved the landscape at the front premise of the Office of Provincial Electricity Authority for which the ground was lower than the road level, it then turned to be marshy area. Such landscape improvement was to facilitate the Government Complex Convenience Project provided for residents attending for acquiring services at the Office of Provincial Electricity Authority, Amphoe Baan Phai, Khon Kaen Province.





### 9.3.2 CSR Activities of CH. Karnchang in 2018

#### “Every Drop is Life, CH. Karnchang Gives Birth to New Life” Activity

CH. Karnchang, in association with the National Blood Centre, Thai Red Cross Society, hosted blood drives at the Head Office of CH. Karnchang for the eighth year in a row, with three main objectives as follows:

1. To raise consciousness of blood donation and develop the willingness to be donors to society without expecting anything in return;
2. To develop good relationship among executives, staff, and residents nearby the organization;
3. To develop good understanding and positive attitude towards the Company.



This activity was participated by the management, staff (the Company's staff and affiliated companies' staff), including local residents in nearby communities. In 2018, a blood donation activity was held on Thursday, June 7, 2018 with a total of 162 units of blood bags, representing 69,200 milliliters.



There were a total of 226 persons expressing their intention to donate blood, but 64 persons were ineligible, mainly due to

1. anemia,
2. insufficient sleep,
3. pending drug dosage,
4. dental treatment,
5. vaccination,
6. others.



### Support for Wat Chaisrisaard Child Development Center, Ban Donrad, Surin Province

CH. Karnchang donated Baht 2,000,000 (Baht two million only) to Wat Chaisrisaard Child Development Center, Ban Donrad subdistrict, Ratanaburi district, Surin Province, for the third year in a row, with the aim of:

1. Enhancing the potential of the teachers and promoting sustainable development in the center,



2. Enhancing the children's practical life skills through educational media and child literature.

Apart from granting the financial aids, the company's executive board also paid a visit to the center to observe its pilot project in primary-schooler development implemented in 2015.



### Charitable Donations

In 2018, CH. Karnchang joined in making donations to various projects for the development of our country in terms of society, education and religion, in the total amount of more than Baht 20,346,846 , as follows:

CH. Karnchang make donations to the Faculty of Engineering, Chulalongkorn University





### CH Karnchang make donations to Saijaithai Foundation

In 2018, CH. Karnchang joined in making donations to various projects for the development of our country in terms of society, education and region, in the total amount of more than Baht 17,145,000, as follows :

Donations for :





## Awards and Pride of CH. Karnchang



### “Popular Vote Stock” Award

The Stock Exchange of Thailand, in cooperation with Kaohoon Daily Newspaper and University of the Thai Chamber of Commerce (UTCC), held the award granting ceremony for “Popular Vote Stocks” at Sukree Room, 3<sup>rd</sup> Floor, Stock Exchange of Thailand Building, on March 24, 2018.

The criterion in consideration for the “Popular Vote Stock” award is based entirely on the vote from the public, whereby around 4,000 sets of questionnaires surveying the opinion of stock investors all over the country about their most desirable stocks in each category ranging from in terms of dividend yield, rate of return, liquidity of shares, credibility of the executive board, good corporate governance, and so on; all of which are quite extensive but significantly impact stock investors' decision.

The Popular Vote Stock Award 2018 was for the third year in a row that CH. Karnchang won in the class of property and construction.



### Thailand Sustainability Investment 2018 Awards

Dr. Supamas Trivisvavet, President of CH. Karnchang Public Company Limited, was conferred the award of “Thailand Sustainability Investment 2018” (THSI) from Dr. Pkorn Peetathawatchai, President and Governor of the Stock Exchange of Thailand. The Award was conferred to the listed companies with recognition on sustainable business operations, strong performance, generating secured returns to shareholders; interconnected with the corporate, social and environmental responsibilities and care as per the corporate governance framework, on 31 October 2018. The award conferring ceremony was arranged at the Professor Sangwan Intrawichai Meeting Hall, 7<sup>th</sup> Floor, Stock Exchange of Thailand's Building.



### Best Investor Relations Awards 2018

In addition to being awarded by the Investment Analysts Association on 27 November 2018, CH. Karnchang Public Company Limited or “CK” was awarded by SET Awards 2018 a “Best Investor Relations Award” in the class of real estate, construction materials and contract, Group 2, listed companies with market capitalization of Baht 30,000-100,000 Million.

Each class comprises 8 industrial groups, namely, Agriculture and Food Industry, Financial Business, Industrial Goods, Real Estate and Construction Materials and Contract, Resources, Services, Technology and SET-MAI.

The award selecting criteria included the excellent management, presentation of in-depth, straight, quality, clear, accurate and complete information on a persistent basis despite bad news, the business trend, the operational results and reasonable risks, the business ethics and corporate governance, the social and investor relations awareness; the analysts' meeting with high-level executives/ or investor relations team, the prompt responses, the honor of comments and professionalism of analysts and the multiple channel for presentation of information.



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| G4-13                        | Significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain  | 22-25    | -                           |                   |
| G4-14                        | Explanation of whether and how the precautionary approach or principle is addressed by the organization   | -        | 2-5, 22,<br>32-33,<br>35-36 |                   |
| G4-15                        | List externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or which it endorses  | -        | 2-5, 23,<br>35-36,39        |                   |

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| G4-29                                      | Date of most recent report   | -        | 22                | CK Sustainability 2017                        |
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| G4-32                                      | "In accordance" option, GRI Index and report assurance   | -        | 22                |   |
| G4-33                                      | Policy regarding report assurance  | -        | -                 |   |
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| G4-35                                      | Process for delegating authority for sustainability topics from the board to senior executives and other employees | -        | 23, 29            |   |
| G4-36                                      | High-level accountability for sustainability topics  | -        | 19                |   |
| G4-37                                      | Processes for consultation between stakeholders and the board on sustainability topics                             | -        | -                 |   |

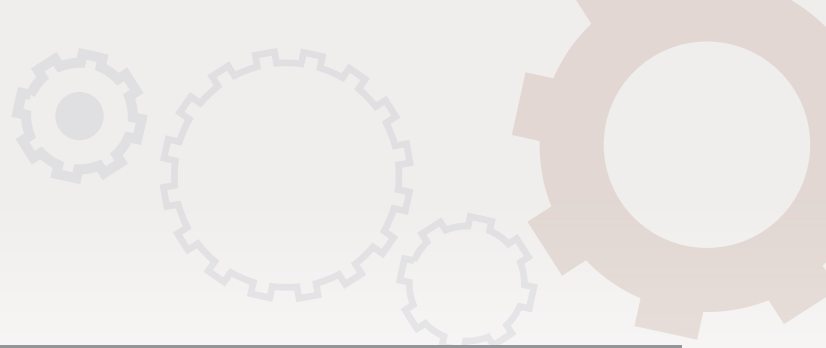
## GENERAL STANDARD DISCLOSURES

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| G4-39     | Indicate if Chair of highest governance body is also an executive officer   | -        | 23                |  |
| G4-40     | Nomination and selection processes for the board and its committees   | 121-124  | -                 |  |
| G4-41     | Processes for the highest governance body to ensure conflicts of interest are avoided and managed   | 99       | 23,<br>143-144    |  |
| G4-42     | Board and executives' roles in the organization's mission statements, strategies, policies, and goals related to sustainability impacts   | 115      | 23                |  |
| G4-43     | Board knowledge of sustainability topics  | -        | -                 |  |
| G4-44     | Board performance with respect to governance of sustainability topics   | 108-112  | 23, 29            |  |
| G4-45     | Board role in the identification and management of sustainability impacts, risks, and opportunities   | 78-79    | 30,<br>32-33      |  |
| G4-46     | Board role in reviewing risk management processes for sustainability topics   | 79       | 32-33             | <a href="http://www.ch-karnchang.co.th/#/governance">www.ch-karnchang.co.th/#/governance</a>   |
| G4-47     | Frequency of the board's review of sustainability impacts, risks, and opportunities   | 106      | -                 | <a href="http://www.ch-karnchang.co.th/assets/file/20151020-ck-charter-csr-th.pdf">www.ch-karnchang.co.th/assets/file/20151020-ck-charter-csr-th.pdf</a> |
| G4-48     | Highest committee or position that formally reviews and approves the organization's sustainability report   | -        | -                 |  |
| G4-49     | Process for communicating critical concerns to the board  | -        | 22, 24-28,<br>120 |  |
| G4-50     | Nature and total number of critical concerns that were communicated to the board  | -        | -                 |  |
| G4-51     | Remuneration policies for the board and senior executives   | 118      | -                 |  |
| G4-52     | Process for determining remuneration  | 118      | -                 |  |
| G4-53     | Stakeholders' views on remuneration   | -        | -                 |  |
| G4-54     | Ratio of the annual total compensation for the organization's highest-paid individual to the median annual total compensation for all employees   | 84-86    | -                 |  |
| G4-55     | Ratio of percentage increase in annual total compensation for the organization's highest-paid individual to the median percentage increase in annual total compensation for all employees | 84-86    | -                 |  |

## GENERAL STANDARD DISCLOSURES

| Indicator                          | Description  | Page No. |         | Omission/<br>Note  |
|------------------------------------|--|----------|---------|--|
|                                    |  | AR       | SR      |  |
| ETHICS AND INTEGRITY               |  |          |         |  |
| G4-56                              | Code of conduct  | 89, 104  | 20-21   |  |
| G4-57                              | Helplines or advice lines for employees  | -        | -       | <a href="http://www.ch-karnchang.co.th/#/about/vision">www.ch-karnchang.co.th/#/about/vision</a> |
| G4-58                              | Mechanisms for reporting concerns about unethical or unlawful behavior   | -        | -       | <a href="http://www.ch-karnchang.co.th/#/governance">www.ch-karnchang.co.th/#/governance</a>     |
| CATEGORY: ECONOMIC                 |  |          |         |  |
| ASPECT : ECONOMIC PERFORMANCE      |  |          |         |  |
| G4-DMA                             | Generic Disclosures on Management Approach   | 78       | 5       |  |
| G4-EC1                             | Direct economic value generated and distributed  | -        | 29      |  |
| G4-EC2                             | Financial implications and other risks and opportunities for the organization’s activities due to climate change   | -        | -       |  |
| G4-EC3                             | Coverage of the organization’s defined benefit plan obligations  | -        | -       |  |
| G4-EC4                             | Financial assistance received from government  | -        | 29      |  |
| ASPECT : MARKET PRESENCE           |  |          |         |  |
| G4-DMA                             | Generic Disclosures on Management Approach   | -        | -       |  |
| G4-EC5                             | Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation | -        | -       |  |
| G4-EC6                             | Proportion of senior management hired from the local community at significant locations of operation               | -        | -       |  |
| ASPECT : INDIRECT ECONOMIC IMPACTS |  |          |         |  |
| G4-DMA                             | Generic Disclosures on Management Approach   | -        | -       |  |
| G4-EC7                             | Development and impact of infrastructure investments and services supported  | -        | -       |  |
| G4-EC8                             | Significant indirect economic impacts, including the extent of impacts   | -        | 145-148 |  |
| ASPECT : PROCUREMENT PRACTICES     |  |          |         |  |
| G4-DMA                             | Generic Disclosures on Management Approach   | 79       | -       |  |
| G4-EC9                             | Proportion of spending on local suppliers at significant locations of operation                                    | -        | -       |  |

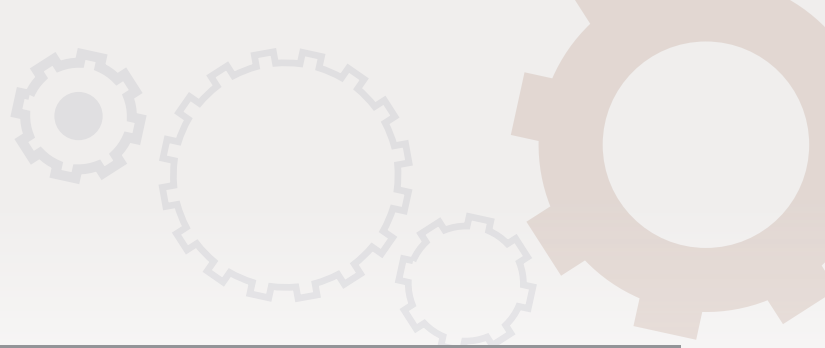




| GENERAL STANDARD DISCLOSURES |  |          |        |                   |
|------------------------------|--|----------|--------|-------------------|
| Indicator                    | Description  | Page No. |        | Omission/<br>Note |
|                              |  | AR       | SR     |                   |
| CATEGORY: ENVIRONMENTAL      |  |          |        |                   |
| ASPECT : MATERIALS           |  |          |        |                   |
| G4-DMA                       | Generic Disclosures on Management Approach   | -        | 39     |                   |
| G4-EN1                       | Materials used by weight or volume   | -        | 39-40  |                   |
| G4-EN2                       | Percentage of materials used that are recycled input materials   | -        | -      |                   |
| ASPECT : ENERGY              |  |          |        |                   |
| G4-DMA                       | Generic Disclosures on Management Approach   | -        | -      |                   |
| G4-EN3                       | Energy consumption within the organization   | -        | 41     |                   |
| G4-EN4                       | Energy consumption outside of the organization   | -        | 41     |                   |
| G4-EN5                       | Energy intensity   | -        | -      |                   |
| G4-EN6                       | Reduction of energy consumption  | -        | -      |                   |
| G4-EN7                       | Reductions in energy requirements of products and services   | -        | -      |                   |
| ASPECT : WATER               |  |          |        |                   |
| G4-DMA                       | Generic Disclosures on Management Approach   | -        | -      |                   |
| G4-EN8                       | Total water withdrawal by source   | -        | 41     |                   |
| G4-EN9                       | Water sources significantly affected by withdrawal of water  | -        | -      |                   |
| G4-EN10                      | Percentage and total volume of water recycled and reused   | -        | -      |                   |
| ASPECT : BIODIVERSITY        |  |          |        |                   |
| G4-DMA                       | Generic Disclosures on Management Approach   | -        | 42-43  |                   |
| G4-EN11                      | Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas                                | -        | 69-117 |                   |
| G4-EN12                      | Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas | -        | -      |                   |
| G4-EN13                      | Habitats protected or restored   | -        | -      |                   |
| G4-EN14                      | Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk                  | -        | -      |                   |

## GENERAL STANDARD DISCLOSURES

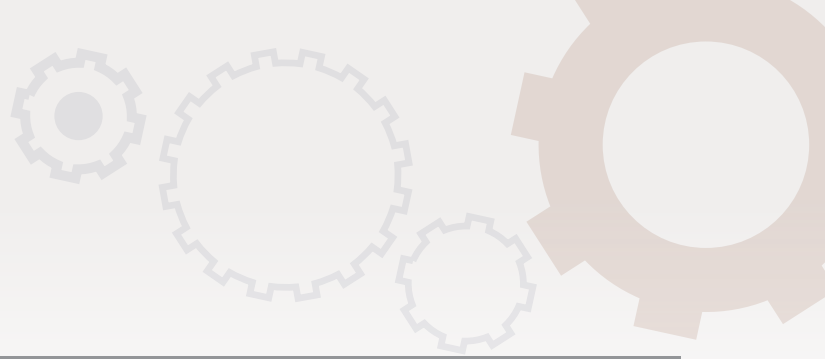
| Indicator                      | Description  | Page No. |       | Omission/<br>Note |
|--------------------------------|--|----------|-------|-------------------|
|                                |  | AR       | SR    |                   |
| ASPECT : EMISSIONS             |  |          |       |                   |
| G4-DMA                         | Generic Disclosures on Management Approach   | -        | -     |                   |
| G4-EN15                        | Direct greenhouse gas (GHG) emissions (Scope 1)  | -        | -     |                   |
| G4-EN16                        | Energy indirect greenhouse gas (GHG) emissions (Scope 2)   | -        | -     |                   |
| G4-EN17                        | Other indirect greenhouse gas (GHG) emissions (Scope 3)  | -        | -     |                   |
| G4-EN18                        | Greenhouse gas (GHG) emissions intensity   | -        | -     |                   |
| G4-EN19                        | Reduction of greenhouse gas (GHG) emissions  | -        | -     |                   |
| G4-EN20                        | Emissions of ozone-depleting substances (ODS)  | -        | -     |                   |
| G4-EN21                        | NOX, SOX, and other significant air emissions  | -        | -     |                   |
| ASPECT : EFFLUENTS AND WASTE   |  |          |       |                   |
| G4-DMA                         | Generic Disclosures on Management Approach   | -        | 67-68 |                   |
| G4-EN22                        | Total water discharge by quality and destination   | -        | -     |                   |
| G4-EN23                        | Total weight of waste by type and disposal method  | -        | -     |                   |
| G4-EN24                        | Total number and volume of significant spills  | -        | -     |                   |
| G4-EN25                        | Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally | -        | -     |                   |
| G4-EN26                        | Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization’s discharges of water and runoff                                    | -        | -     |                   |
| ASPECT : PRODUCTS AND SERVICES |  |          |       |                   |
| G4-DMA                         | Generic Disclosures on Management Approach   | -        | -     |                   |
| G4-EN27                        | Extent of impact mitigation of environmental impacts of products and services  | -        | -     |                   |
| G4-EN28                        | Percentage of products sold and their packaging materials that are reclaimed by category   | -        | -     |                   |
| ASPECT : COMPLIANCE            |  |          |       |                   |
| G4-DMA                         | Generic Disclosures on Management Approach   | -        | -     |                   |
| G4-EN29                        | Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations  | -        | -     |                   |



| GENERAL STANDARD DISCLOSURES                   |   |          |         |                   |
|--|---|----------|---------|-------------------|
| Indicator                                      | Description   | Page No. |         | Omission/<br>Note |
|  |   | AR       | SR      |                   |
| ASPECT : TRANSPORT                             |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | 120-123 |                   |
| G4-EN30  | Significant environmental impacts of transporting products and other goods and materials for the organization’s operations, and transporting members of the workforce | -        | 118-119 |                   |
| ASPECT : OVERALL                               |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-EN31  | Total environmental protection expenditures and investments by type   | -        | -       |                   |
| ASPECT : SUPPLIER ENVIRONMENTAL ASSESSMENT     |   |          |         |                   |
| G4-DMA   | G4-DMA Generic Disclosures on Management Approach   | -        | -       |                   |
| G4-EN32  | Percentage of new suppliers that were screened using environmental criteria   | -        | -       |                   |
| G4-EN33  | Significant actual and potential negative environmental impacts in the supply chain and actions taken   | -        | -       |                   |
| ASPECT : ENVIRONMENTAL GRIEVANCE MECHANISMS    |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-EN34  | Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms   | -        | -       |                   |
| CATEGORY : SOCIAL                              |   |          |         |                   |
| SUB-CATEGORY : LABOR PRACTICES AND DECENT WORK |   |          |         |                   |
| ASPECT : EMPLOYMENT                            |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-LA1   | Total number and rates of new employee hires and employee turnover by age group, gender and region  | 86       | 131-133 |                   |
| G4-LA2   | Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation                             | 86, 186  | -       |                   |
| G4-LA3   | Return to work and retention rates after parental leave, by gender  | -        | -       |                   |
| ASPECT : LABOR/MANAGEMENT RELATIONS            |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-LA4   | Minimum notice periods regarding operational changes, including whether these are specified in collective agreements  | -        | -       |                   |

## GENERAL STANDARD DISCLOSURES

| Indicator                                     | Description   | Page No. |         | Omission/<br>Note |
|---|---|----------|---------|-------------------|
|   |   | AR       | SR      |                   |
| ASPECT : OCCUPATIONAL HEALTH AND SAFETY       |   |          |         |                   |
| G4-DMA  | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-LA5  | Percentage of total workforce represented informal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs | -        | -       |                   |
| G4-LA6  | Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender                     | -        | -       |                   |
| G4-LA7  | Workers with high incidence or high risk of diseases related to their occupation  | -        | -       |                   |
| G4-LA8  | Health and safety topics covered in formal agreements with trade unions   | -        | -       |                   |
| ASPECT : TRAINING AND EDUCATION               |   |          |         |                   |
| G4-DMA  | Generic Disclosures on Management Approach  | 87-89    | 134     |                   |
| G4-LA9  | Average hours of training per year per employee by gender, and by employee category   | 89       | 135-137 |                   |
| G4-LA10                                       | Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings                           | 89       | -       |                   |
| G4-LA11                                       | Percentage of employees receiving regular performance and career development reviews, by gender and by employee category  | -        | -       |                   |
| ASPECT : DIVERSITY AND EQUAL OPPORTUNITY      |   |          |         |                   |
| G4-DMA  | Generic Disclosures on Management Approach  | 96       | -       |                   |
| G4-LA12                                       | Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity  | 89       | -       |                   |
| ASPECT : EQUAL REMUNERATION FOR WOMEN AND MEN |   |          |         |                   |
| G4-DMA  | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-LA13                                       | Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation  | -        | -       |                   |



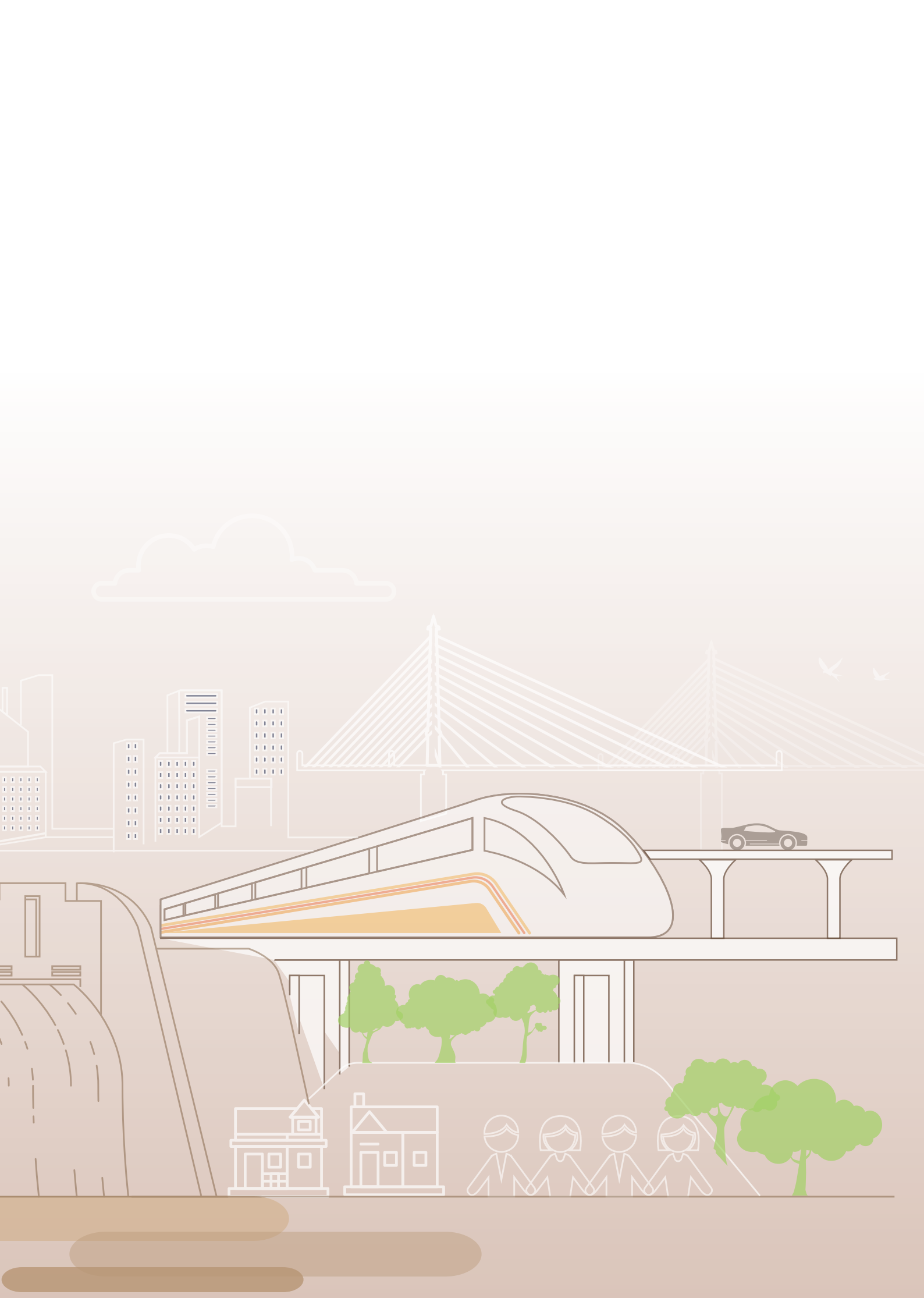
| GENERAL STANDARD DISCLOSURES                              |  |          |           |                   |
|---|--|----------|-----------|-------------------|
| Indicator   | Description  | Page No. |           | Omission/<br>Note |
|   |  | AR       | SR        |                   |
| ASPECT : SUPPLIER ASSESSMENT FOR LABOR PRACTICES          |  |          |           |                   |
| G4-DMA  | G4-DMA Generic Disclosures on Management Approach  | -        | -         |                   |
| G4-LA14   | Percentage of new suppliers that were screened using labor practices criteria  | -        | -         |                   |
| G4-LA15   | Significant actual and potential negative impacts for labor practices in the supply chain and actions taken  | -        | -         |                   |
| ASPECT : LABOR PRACTICES GRIEVANCE MECHANISMS             |  |          |           |                   |
| G4-DMA  | Generic Disclosures on Management Approach   | -        | -         |                   |
| G4-LA16   | Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms  | -        | -         |                   |
| SUB-CATEGORY : HUMAN RIGHTS                               |  |          |           |                   |
| ASPECT : INVESTMENT                                       |  |          |           |                   |
| G4-DMA  | Generic Disclosures on Management Approach   | -        | 29,32,124 |                   |
| G4-HR1  | Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening  | -        | -         |                   |
| G4-HR2  | Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained              | 89       | -         |                   |
| ASPECT : NON-DISCRIMINATION                               |  |          |           |                   |
| G4-DMA  | Generic Disclosures on Management Approach   | 96-97    | -         |                   |
| G4-HR3  | Total number of incidents of discrimination and corrective actions taken   | -        | -         |                   |
| ASPECT : FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING |  |          |           |                   |
| G4-DMA  | Generic Disclosures on Management Approach   | -        | -         |                   |
| G4-HR4  | Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights | -        | -         |                   |
| ASPECT : CHILD LABOR                                      |  |          |           |                   |
| G4-DMA  | Generic Disclosures on Management Approach   | -        | 143-144   |                   |
| G4-HR5  | Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor                                | -        | -         |                   |

| GENERAL STANDARD DISCLOSURES               |  |          |         |                   |
|--|--|----------|---------|-------------------|
| Indicator                                  | Description  | Page No. |         | Omission/<br>Note |
|  |  | AR       | SR      |                   |
| ASPECT : FORCED OR COMPULSORY LABOR        |  |          |         |                   |
| G4-DMA                                     | Generic Disclosures on Management Approach   | -        | 143-144 |                   |
| G4-HR6                                     | Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor | -        | -       |                   |
| ASPECT : SECURITY PRACTICES                |  |          |         |                   |
| G4-DMA                                     | Generic Disclosures on Management Approach   | 97       | -       |                   |
| G4-HR7                                     | Percentage of security personnel trained in the organization’s human rights policies or procedures that are relevant to operations   | -        | -       |                   |
| ASPECT : INDIGENOUS RIGHTS                 |  |          |         |                   |
| G4-DMA                                     | Generic Disclosures on Management Approach   | -        | -       |                   |
| G4-HR8                                     | Total number of incidents of violations involving rights of indigenous peoples and actions taken   | 97       | -       |                   |
| ASPECT : ASSESSMENT                        |  |          |         |                   |
| G4-DMA                                     | Generic Disclosures on Management Approach   | -        | -       |                   |
| G4-HR9                                     | Total number and percentage of operations that have been subject to human rights reviews or impact assessments   | 97       | -       |                   |
| ASPECT : SUPPLIER HUMAN RIGHTS ASSESSMENT  |  |          |         |                   |
| G4-DMA                                     | Generic Disclosures on Management Approach   | -        | -       |                   |
| G4-HR10                                    | Percentage of new suppliers that were screened using human rights criteria   | -        | -       |                   |
| G4-HR11                                    | Significant actual and potential negative human rights impacts in the supply chain and actions taken   | -        | -       |                   |
| ASPECT : HUMAN RIGHTS GRIEVANCE MECHANISMS |  |          |         |                   |
| G4-DMA                                     | Generic Disclosures on Management Approach   | -        | -       |                   |
| G4-HR12                                    | Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms   | -        | -       |                   |
| SUB-CATEGORY : SOCIETY                     |  |          |         |                   |
| ASPECT : LOCAL COMMUNITIES                 |  |          |         |                   |
| G4-DMA                                     | Generic Disclosures on Management Approach   | -        | -       |                   |
| G4-SO1                                     | Percentage of operations with implemented local community engagement, impact assessments, and development programs   | -        | -       |                   |

| GENERAL STANDARD DISCLOSURES                         |   |          |         |                   |
|--|---|----------|---------|-------------------|
| Indicator  | Description   | Page No. |         | Omission/<br>Note |
|  |   | AR       | SR      |                   |
| G4-SO2   | Operations with significant actual and potential negative impacts on local communities                                      | -        | -       |                   |
| ASPECT : ANTI-CORRUPTION                             |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-SO3   | Total number and percentage of operations assessed for risks related to corruption and the significant risks identified     | -        | -       |                   |
| G4-SO4   | Communication and training on anti-corruption policies and procedures   | 89       | 143-144 |                   |
| G4-SO5   | Confirmed incidents of corruption and actions taken   | -        | -       |                   |
| ASPECT : PUBLIC POLICY                               |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-SO6   | Total value of political contributions by country and recipient/beneficiary   | -        | -       |                   |
| ASPECT : ANTI-COMPETITIVE BEHAVIOR                   |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-SO7   | Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes          | -        | -       |                   |
| ASPECT : COMPLIANCE                                  |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-SO8   | Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations | -        | -       |                   |
| ASPECT : SUPPLIER ASSESSMENT FOR IMPACTS ON SOCIETY  |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-SO9   | Percentage of new suppliers that were screened using criteria for impacts on society  | -        | -       |                   |
| G4-SO10  | Significant actual and potential negative impacts on society in the supply chain and actions taken                          | -        | 28      |                   |
| ASPECT : GRIEVANCE MECHANISMS FOR IMPACTS ON SOCIETY |   |          |         |                   |
| G4-DMA   | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-SO11  | Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms            | -        | -       |                   |

| GENERAL STANDARD DISCLOSURES          |   |          |         |                   |
|---------------------------------------|---|----------|---------|-------------------|
| Indicator                             | Description   | Page No. |         | Omission/<br>Note |
|                                       |   | AR       | SR      |                   |
| SUB-CATEGORY: PRODUCT RESPONSIBILITY  |   |          |         |                   |
| ASPECT : CUSTOMER HEALTH AND SAFETY   |   |          |         |                   |
| G4-DMA                                | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-PR1                                | Percentage of significant product and service categories for which health and safety impacts are assessed for improvement   | -        | -       |                   |
| G4-PR2                                | Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes   | -        | -       |                   |
| ASPECT : PRODUCT AND SERVICE LABELING |   |          |         |                   |
| G4-DMA                                | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-PR3                                | Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements | -        | 121-122 |                   |
| G4-PR4                                | Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes   | -        | -       |                   |
| G4-PR5                                | Results of surveys measuring customer satisfaction  | -        | 123-124 |                   |
| ASPECT : MARKETING COMMUNICATIONS     |   |          |         |                   |
| G4-DMA                                | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-PR6                                | Sale of banned or disputed products   | -        | -       |                   |
| G4-PR7                                | Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes  | -        | -       |                   |
| ASPECT : CUSTOMER PRIVACY             |   |          |         |                   |
| G4-DMA                                | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-PR8                                | Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data   | -        | -       |                   |
| ASPECT : COMPLIANCE                   |   |          |         |                   |
| G4-DMA                                | Generic Disclosures on Management Approach  | -        | -       |                   |
| G4-PR9                                | Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services  | -        | -       |                   |







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