

ANNUAL
REPORT
2017

GUNKUL
not only the energy, we care



GUNKUL ANNUAL REPORT **2017**

GUNKUL
not only the energy, we care

Vision

"To become the leading producer of electricity from renewable energy, including the manufacturer and provider of equipment for energy system and energy saving products that meet the highest customers and participation's needs and satisfaction"

Mission

1. Renewable Energy

Do business on renewable energy power plants in efficiency standards with focusing on social and environmental.

2. Sales

Provide equipment for power systems including energy saving products and channel of distribution, and also full-option services that meet the customers' needs.

3. Technology

Develop manufacturing techniques and adopt new production technology to improve productivity and reduce production costs.

4. Return

Maximize shareholders' and stakeholders' value and profitability.

5. Personal

Increase employees' capability to enhance the Company's competitiveness on a global scale and retain talent employees.

6. Management Framework

Manage structure and management in accordance with good corporate governance principles.





Part 1 : Annual Report 2017

	Page
1. Message from the Chairman	8
2. Report of the Audit Committee	10
3. Report of the Risk Management Committee	12
4. Report of the Nomination and Remuneration Committee	14
5. Report of the Good Corporate Governance Committee	16
6. Board of Directors	17
7. Audit Committee	18
8. Risk Management Committee	19
9. Nomination and Remuneration Committee	20
10. Good Corporate Governance Committee	21
11. Executive Committee	22
12. Management Team	23
13. Financial Highlights	26
14. General Information and Reference Person	29
15. Policy and Overall Business Operations	43
16. Nature of Business	56
17. Risk Factors	99
18. Capital Structure and Shareholders	111
19. Management Structure	114
20. Details of the Board of Directors and Executives	139
21. Corporate Governance	197
22. Internal Control and Risk Management	253
23. Related Transaction	255
24. Board of Directors' Responsibility for Financial Reporting	312
25. Summary of Financial Statements	313
26. Management Discussion and Analysis	327
27. Certified Public Accountant's Report, Financial Statements and Notes	337



WIND ENERGY

Conversion of wind
kinetic energy into electrical

Part 2 : Corporate Social Responsibility Report 2017	Page
1. Policy in Corporate Social Responsibility for Sustainability Management	444
2. Business Operations with Stakeholders and Sustainable Management	445
– Employees	447
– Business Partners	447
– Clients	448
– Competitors	448
– Creditors	448
– Community / Society	448
– Shareholders and Investors	448
– Press	449
– Government Agencies	449
3. Report Preparation	450
3.1 Scope of Report	450
3.2 Materiality Effects to Business Sustainability	451
4. Human Resources Development: Enhancing “Smart People”	452
4.1 Personnel Development to Support Business Growth	453
4.2 Capacity Development and Career Advancement	461
4.3 Promoting Good Practices, Participation and Social Contribution among Employees	462
5. “Energy Business”: Alternative Energy Innovation Development	463
5.1 Good Corporate Governance Policy	464
5.2 Being of Fair Enterprise Practices	465
5.3 Anti-Corruption Practices	465
5.4 Taxation Procedure	467
5.5 Risk Management	467
5.6 Labour and Human Rights Practices	467
5.7 Standards of Safety, Occupational Health and Environment	469
5.8 Employee Engagement with Welfare and Productivity Enhancement Activities	470
5.9 Responsibility for Consumers	476
5.10 Supply Chain Management	478

5.11	Environmental Management and Energy Conservation	479
5.12	Innovation in the Business Process for Sustainability	482
6.	Community and Social Development: Sustainably Creating and Developing Good Things for Society: "Action Social"	483
6.1	Creating Educational Opportunities for Students from Schools Surrounding Local Communities and Employees' Children	484
6.2	Providing Financial Support and Improving the Condition of Educational Institutes and Communities	488
6.3	Preserving Buddhism and Cultural Heritage	494
6.4	Opening Renewable Power Plants as a Learning Source for Educational Institutes and Surrounding Communities	494
6.5	Promotion of Community Participation and Community Income Generation	497
7.	Achievements	500





message from director

Message from
the Chairman

To: Shareholders of Gunkul Engineering Public Company Limited

In 2017, the electricity situation in Thailand in terms of electricity cost was stable from the price of oil at the rate of USD 50 - 60 per barrel. It has a total capacity of 36,000 MW and has a peak demand of electricity consumption of 30,300 MW, which is close to the year in 2016 at 30,972 MW. As a result, the society raised the issue of the need to reserve electricity at a higher proportion than the maximum electricity consumption (Peak Demand) at the rate of 20% that is appropriate and affect the price of electricity is unnecessary or not. Thailand also uses natural gas to account for the largest portion of its electricity production in ASEAN at 70%, which results in electricity prices due to higher production costs compared to coal-fired power plants. It was a Government's policy in the past year. However, it was not accepted by the population in the area to build coal-fired power plants under the principle of security, if there are power plants in areas where the



electricity consumption rate is higher than the production itself such as, the south area of Thailand.

The situation of renewable energy, especially the type of solar power plant with the cost of generating electricity is lower than the purchase of electricity that sold through the Provincial Electricity Authority and the Metropolitan Electricity Authority approximately 15%. As a result, an electricity demand that generated by solar power in the private sector was higher in order to replace or reduce the proportion of electricity purchased from the electricity Authority in order to save costs and increase competitiveness of business. As a result, the demand for solar rooftop installations in the private sector has increased significantly since 2017.

Gunkul Engineering Public Company Limited is the leading provider of renewable energy and It is 35th of the Company's operation that has been through all aspects and impressive growth. The Company has become one of the leaders in clean energy for sustainable energy for Thailand and ASEAN with the assurance that clean energy is a key factor in contributing to the society around the power plant, by engaging and not causing any impact or pollution to the population surrounding the power plant. The Company also focuses on comprehensive product development and services for creating a return to all stakeholders under good corporate governance. As a result, the Company is famous for producing quality products, providing efficient service and timing delivery with the advanced technology plus the continually focus on develops production potential. As a result, the Gunkul Group has been trusted by both domestic and foreign customers with a target of 1,000 MW by 2021.

In addition, the Company attaches great importance to the participation of the Private Sector Collective Action Coalition Against Corruption. There is a policy against corruption and business ethics including review all relevant policy in order to apply to all levels of personnel in the Company. GUNKUL's goal is to continuously increase new developing projects for creating sustainable growth for the organization. This is the policy of the Company including the promotion of renewable energy or sustainable clean energy under caution to maximize the benefit of shareholders and stakeholders of the Company in order to build the foundation of security and transparency auditability also encourages shareholders, customers and business partners both in present and future.

Lastly, the most important thing is the Company always gets good cooperation and feedback from the benefactors of the Company such as, the Board, its employees, customers, shareholders, analysts, investors, and all related parties that help the Company to succeed. GUNKUL has a strong foundation that is a part of the sustainable development of Thailand's electricity and energy system and growing in parallel with Thailand. GUNKUL delivers products and services with consistent quality also benefits to all sectors, society, environment, the nation and the Company to develop in tandem.

Best regards,



(Mr.Gunkul Dhumrongpiyawut)
Chairman of the Board of Directors

28 February 2018

2. Report of the Audit Committee

Dear Shareholders of Gunkul Engineering Public Company Limited,

The Audit Committee of Gunkul Engineering Public Company Limited consists of three independent directors which are Dr. Djitt Laowattana as Chairman of the Audit Committee, Pol. Maj. Gen. Visit Sukarasep and Mr. Chongrak Rarueysong, Ph.D as Audit Committee, All members of the Audit Committee have experience in law, accounting and finance, management and also knowledge of energy business. Their qualification was compiled both with Securities and Exchange Commission, Thailand and The Stock Exchange of Thailand.

The Audit Committee acts as assigned from the Board of Directors to monitor and review the Company's financial reporting to be accurate and reliable, proper system of internal control and internal audit, as well as to review for compliance with policies against corrupt efficiently. The Committee has performed in accordance with duties and responsibilities as defined in "Audit Committee Charter" which complies with guidelines and best practices for Audit Committee of the Stock Exchange of Thailand.

In fiscal year 2017, the Audit Committee arranged 6 meetings and arranged a meeting between the Audit committee and the Auditors without management in attendance 1 meeting. The meetings were attended by all directors of Audit Committee, the management as well as the company's Internal Auditor Department and External Auditor, in order to share information, comments and give suggestions which were benefit to administration proposes. The results of each meeting were presented to the Board of Directors of the Company and the company's subsidiaries. During past year, the Audit Committee had carried out important activities, which could be summarized as follows.

1. **In reviewing the financial statements**, the Audit Committee has asked for the accuracy and completeness of the quarterly and annual separated financial statements and consolidated financial statements. With the explanation from the management and auditor, the quarterly and annual separated financial statements and consolidated financial statements are prepared in accordance with the legal requirements and generally accepted accounting principles before presenting to the Board of Directors.
2. **In reviewing the internal control system**, the Audit Committee in cooperation with the auditors and the internal auditors has asked for the internal control system. The Audit Committee is of the opinion that the company has adequate and suitable internal controls in the acceptable criteria.
3. **In reviewing the internal auditing plans**, the Audit Committee has asked and considered the internal auditing plans to ensure that the internal auditing plans has efficiency and effectiveness by approving the internal auditing plans which is created by using Risk – based Audit Plan, acknowledging the results and giving suggestions of suitable internal controls which can prevent and reduce the risks that may occur. Including review the annual internal auditing plans to ensure that the internal auditing plans has been adjusted and been consistent with current situation for more effective work.
4. **In reviewing the risk management**, the Audit Committee has asked risk management plan in order to ensure that the risk has been managed properly in the acceptable criteria. The company has focused and developed Risk Management System by appointing Risk Management Committee in order to set

risk management regulations and policies. Because of that, the company has effectively managed the risk in accordance with the company's target. As the result of reviewing, The Audit Committee is of the opinion that the company has adequate and suitable the risk management.

5. **In reviewing the related party and conflicts of interest transactions**, the Audit Committee has considered and asked for the transactions that may have conflicts of related party or conflicts of interest are prepared in accordance with the legal requirement and complied with the Stock Exchange of Thailand Act every quarter and assigning an internal audit team to review a basic accuracy, including asked by the auditors every year. As the result of reviewing, the majority of the transactions between the company and subsidiaries were normal commercial transaction in accordance with good corporate governance, eliminate conflicts of interest thoroughly, realistic and independent.
- 6 **The Securities and Exchange Commission Law and Regulations**, the Audit Committee has preformed the full scope of authority set forth in the Charter of the Audit Committee in compliance with the Securities and Exchange Commission Law and Regulations including rules of the Stock Exchange of Thailand or any law relating to the company's business.
7. **In supporting good corporate governance and considering complaints about fraud or corruption functions such as channels for employees**, shareholders and stakeholders to contact the committee directly that be able to identify information to the Audit Committee with regard to the complaints, offense or non-performed as conduct business or doubts in financial reporting or internal controls directly to email address: audit_committee@gunkul.com, including to provide a system for receiving complaints and the measures to protect the whistleblower. In the year 2017, the Company was certified as Private Sector Collective Action Coalition Against Corruption (CAC).
8. **In consideration of determining, selecting**, nominating and recommending remuneration of annual external auditor for year 2018, the Audit Committee had nominated KPMG Phoomchai Audit Ltd.as External Auditor of the Company and the Company's subsidiaries, the audit fee of the Company amount of THB 1,700,000.00. The Audit Committee already presented this proposal to the Board of Directors and will be proposed to the shareholders in the Annual General Meeting of Shareholders for consideration later.

In conclusion, the Audit Committee has opinion that the consolidated and separated financial statements of the Company and its subsidiaries have presented fairly, sufficiently, completely in accordance with general financial reporting standard. The internal control has enough efficiency and effectiveness to control any frauds by separating authorization. The Company and its subsidiaries have operated businesses in accordance with The Securities and Exchange Act, The Stock Exchange of Thailand Act or any related laws.



(Dr. Djitt Laowattana)

Chairman of the Audit Committee

21st February 2018

3. Report of Risk Management Committee

Risk Management in business operation is to be main activity and essential for organization. The Company is committed to implementing risk management at the core of the business operation. The Company and its subsidiaries are tasked with assessing risks that might have impacted the business. It appointed Risk Management Committee comprising 4 members who are either independent directors or executives, namely Air Vice Marshal Dr. Pian Totarong as a Chairman, Mr. Somchai Trairatanapirom, Miss Sopacha Dhumrongpiyawut and Mr. Thitipong Techaratanayuenyong are Members of Risk Management Committee. The Committee's duties are to review and approve risk management plan, monitor risk assessment and formulate risk mitigation plan.

The Committee met 4 times in 2017 to review important issues pertaining to risk management. Key duties are summarized as follows:

1. Risk Management Plan for 2017

The Committee appointed the secretary of the committee to coordinate meetings with all departments of the Management. The Management presented risk management plan and also the new potential business to the Committee for review and approval. Risk management plan encompasses all aspects of business operations, including operational risk, financial risk, strategic risk, information technology risk and law obligation risk including corruption risk.

2. Risk Assessment and Mitigation Plan

The Committee reviewed factors and risk assessment results in accordance with the enterprise-wide risk management plan, including impact to business goal of the Company and its subsidiaries caused by an uncontrollable external factor such as political uncertainty. The Committee classified risks according to the magnitude of the impact and assigned responsible persons to formulate both preventive action and mitigation plan so that the risks were within the tolerance level and strategic goals were achieved.



3. Risk Monitoring and Management

The Committee closely oversaw risk management operation. Quarterly meetings were held with relevant departments to review risk assessment result and any risks that might have increased and changed. The Committee would make suggestions as appropriate so that risk management is efficient and effective.

The Committee has reviewed key activities above and is of opinion that the Company and its subsidiaries had developed effective risk management plan and its operation had been in line with corporate governance principles, including sufficient and proper internal audit, good governance and compliance with applicable laws, rules and regulations.

(Air Vice Marshal Dr. Pian Totarong)

Chairman of the Risk Management Committee

19th February 2018

4.

Report of Nomination and Remuneration Committee

The company recognizes the importance of nominating Committee and Chief Executive including the remuneration such as persons. The Board of Directors has appointed the Nomination and Remuneration Committee which consists of independent directors 3 in 4 of all directors, by searching for a person with talent and qualified to serves in the position of the Committee and Chief Executive. Including the proposing of remuneration policy, Guidelines for remuneration, other benefits for the Board of Directors and all Committees; as well as, Chief Executive which suitable with responsibilities in accordance with the results of the company's operations and market condition as always. In order to motivate and maintain the committee and the executive who has high potentiality and qualification that meets the Company's needs.

In 2017, the Nomination and Remuneration Committee convened 2 meetings for consider matters. The Nomination and Remuneration Committee reported the results of the meeting, comments and recommendations to the Board for consideration and continuously. The important considerations are summarized as following;

- **To impose and review Policies and Guidelines**

The Nomination and Remuneration Committee has considered and review policies and guidelines which relate to the implementation of the Nomination and Remuneration. To ensure that the operation was proceeded with efficient which comply with Good Corporate Governance's regulations and policies. As well as, the current international situation and the guidelines as details below;

- The Nomination and Remuneration Committee Charter.
- The Policy on the Recruitment and Appointment of the Directors and Senior Management (Chief Executive)
- The Policy on the Remuneration of the Board's Directors and Sub-Committee
- The Policy on Succession Plan and Talent Management
- Self- Assessment of the Nomination and Remuneration Committee, by Committee, for 2017

- **To impose Remuneration of the Board of Directors and Sub-Committees**

The Nomination and Remuneration Committee of the Company considered the remuneration of the Board of Directors and Sub-Committees in carefully scrutinize the appropriateness by comparable as the results of the survey for the level and composition of remuneration appropriate to be motivate and maintain all directors and management or chief executive under the Company's potential and company requires.

- **To determine the Rate for Bonuses Payable, Annual Salary Adjustment and New Salary Structure**

The Nomination and Remuneration Committee has considered the criteria for determining the annual bonuses in 2017. The rate of annual salary adjustment and a new salary structure for 2017 in conjunction with the management committee in accordance with reasonable rates and results of operations performance of the Company and the Group and comparable to the general practice in the industries.

- **To consider changing the investment policy of provident fund.**

The Nomination and Remuneration Committee has proposed changing the investment policy of the provident fund members who are employees of the employer. In the past, members choose to invest in a single policy. If any member who wants higher returns, they will not be able to do so. However, if it's an Employee Choice Fund, members can invest in shares by choosing the risk that the members can receive and the preferred return.

The Nomination and Remuneration Committee reported the results of every meeting to the Board of Directors continuously. In 2017, the Nomination and Remuneration Committee has fulfilled the tasks assigned in an entirety with duly care and full capacity with a very straightforward for the best interests of shareholders and stakeholders on all sides and a commitment to abide by the principles of equality, fairness and transparency to ensuring compliance with good corporate governance principles as well as the Stock Exchange of Thailand Regulation and in order to be internationally recognized in the future.



(Police Major General Visit Sukarasep)

Chairman of the Nomination and Remuneration Committee

20th February 2018

5.

Report of the Good Corporate Governance Committee

In 2017, the Company's Good Corporate Governance Committee convened 4 meetings to consider the policies and practices of good corporate governance, fixing Anti-Corruption plans, including implemented of any related to corporate governance and following the implementation of the good corporate governance for companies recording on the Stock Exchange of Thailand, and applicable rules of the Securities and Exchange Commission, Thailand. A while, focused on the implementation of the policies and practice of good corporate governance in 5 categories, Rights of Shareholders, Equitable Treatment of Shareholders, Role of Stakeholders, Disclosure and Transparency and Responsibilities of the Board, details as following:

- Directed, supervisory, review, modify and improve the policies and practices of good corporate governance for comply with the rules related implementation within 5 categories, including anti-corruption measures and practices corruption with international guidelines.
- The policy against corruption and notifications or complaints. Including coordinated plan to provide the knowledge to those concerns and to assess the risk of fraud, corrupt personnel in the company as well.
- Supervisory of the directors and management preparing and submitting the report for holding the possession as per as the implementation requires. Also including the report on good corporate governance Committee regularly on a quarterly basis.
- Considering the reports of good corporate governance for annual report in 2017 (form 56-2) and annual information form 2017 (Form 56-1) for discloser the information that showing completely as the rule of good corporate governance.
- Considering and review of good corporate governance charter and review the Board of Directors Charter, also follow up to review the other committees charter.
- Considering the processing and criteria for self-assessment of the Good Corporation Governance for 2017, and covering with the current situation from international guidelines.
- Considering the report evaluates from operation performance and supervisory of the Good Corporate Governance Committee to the Board of Directors.
- Considering the plans and preparing the Annual General Meeting of Shareholders for 2018 that has been providing the meeting with transparency and effective.

The Good Corporate Governance Committee recognizes that, the good corporate governance is important and beneficial to company's business until the shareholders and stakeholders and all of the parties. The Committee has a commitment to prompt effort in order to offering as guidance and advises on corporate governance to the Board of the Directors and Management for following the implementation of the operation performance company and company's group regarding managed an efficiently and an effectively, transparent, accountability to provide the companies with sustainable growth.

The Company is committed to bring good corporate governance principles to concrete operations throughout the organization. In 2017, the Company received a Corporate Good Governance (CGR) rating of 91 points (excellent level), compared to the results obtained in 2016, the score was 82 points (very good level).

In addition, in 2017, the Company received the result of Annual General Shareholders' Meeting Assessment for 2017 with the excellent score of 97.5 points, compared to the results obtained in 2016 with the excellent score of 97.0 points. Also in 2017, the Private Sector Collective Action Coalition Against Corruption Council has evaluated and approved the Company to become a member of the Private Sector Collective Action Against Corruption (CAC). This reflects the overall development of the Company's good corporate governance.



(Dr. Chongrak Rarueysong)
Chairman of the Good Corporate Governance Committee
19th February 2018

6. Board of Directors



1. Mr. Gunkul Dhumrongpiyawut

Chairman of the Board of Directors

2. Dr. Djitt Laowattana

Independent Director

Chairman of the Audit Committee

3. Pol.Maj.Gen. Visit Sukarasep

Independent Director

Chairman of the Nomination and Remuneration Committee

Member of the Audit Committee

4. Dr. Chongrak Rarueysong

Independent Director

Chairman of the Good Corporate Governance Committee

Member of the Audit Committee

5. Miss Sopacha Dhumrongpiyawut

Director

Chairman of the Executive Committee / CEO

Member of the Risk Management Committee

6. Dr. Somboon Aueatchasai

Director and Secretary of the Board

Executive Director

Managing Director

7. Miss Naruechon Dhumrongpiyawut

Director

Executive Director

8. Mr. Chaloepon Sricharoen

Director

Executive Director

9. Mrs. Areewan Chaloezman

Director

Executive Director

10. Miss. Chantira Jongjamareeseethong

Company Secretary

7.

Audit Committee



1. Dr. Djitt Laowattana
Chairman of the Audit Committee

2. Pol.Maj.Gen. Visit Sukarasep
Member of the Audit Committee

3. Dr. Chongrak Rarueysong
Member of the Audit Committee

4. Mr. Tanetsiri Farkmitr
Secretary of the Audit Committee

8.

Risk Management Committee



1. AVM.Dr.Pian Totarong
Chairman of the Risk Management Committee

2. Mr. Somchai Trairatanapirom
Member of the Risk Management Committee

3. Miss Sopacha Dhumrongpiyawut
Member of the Risk Management Committee

4. Mr. Thitipong Techaratanayuenyong
Member of the Risk Management Committee
and Secretary of the Committee

9.

Nomination and Remuneration Committee



1. Pol.Maj.Gen. Visit Sukarasep

Chairman of the Nomination and Remuneration Committee

2. Mr. Decha Chooligorn

Member of the Nomination and Remuneration Committee

3. Mr. Hathai Uthai

Member of the Nomination and Remuneration Committee

4. Mrs. Somluk Kanuenghet

Member of the Nomination and Remuneration Committee
and Secretary of the Committee

10. Good Corporate Governance Committee



1. Dr. Chongrak Rarueysong

Chairman of the Good Corporate Governance Committee

2. Mr. Phongthep Thitapan

Member of the Good Corporate Governance Committee

3. Mr. Somchai Trairatanapirom

Member of the Good Corporate Governance Committee

4. Miss Chantira Jongamareeseethong

Secretary of the Good Corporate Governance Committee

11. Executive Committee



1. Miss Sopacha Dhumrongpiyawut
Chief Executive Officer

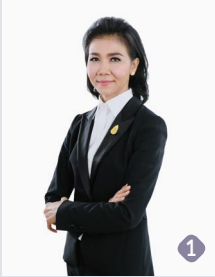
2. Dr. Somboon Aueatchasai
Executive Director

3. Miss Naruechon Dhumrongpiyawut
Executive Director

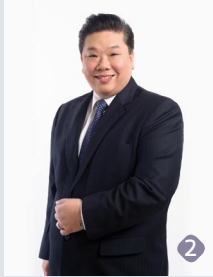
4. Mrs. Areewan Chaloemdan
Executive Director

5. Mr. Chaloempon Sricharoen
Executive Director

12. Management Team



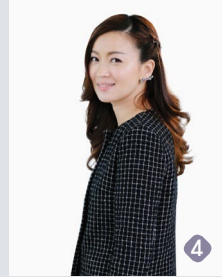
1



2



3



4



5



6



7



8

1. Miss Sopacha Dhumrongpiyawut

♦ Chief Executive Officer

2. Dr. Somboon Aueatchasai

♦ Managing Director

3. Mr. Phongsakorn Damnoen

♦ Deputy Managing Director,
Business Development
and Strategic Planning

4. Miss Naruechon Dhumrongpiyawut

♦ Assistant Managing Director,
Business Development
and Strategic Planning
♦ Senior Vice President, Logistics

5. Mrs. Areewan Chaloemdan

♦ Senior Vice President, Factory

6. Mrs. Somluk Kanuenghet

♦ Senior Vice President,
Executive Office

7. Mr. Thamrong Chankraithong

♦ Senior Vice President,
Sales & Marketing

8. Mr. Phudis Triwilaskul

♦ Senior Vice President,
Sales & Marketing-Energy Solution and Lighting

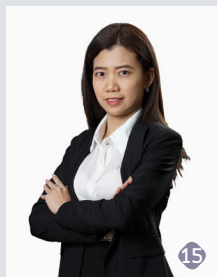
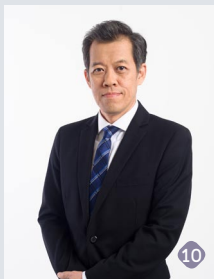
9. Mr. Thitipong Techaratanayuengyong

♦ Senior Vice President,
Financial Management & Overseas Control



9

12. Management Team (continued)



10. Dr. Phairot Phanukan

- ◆ Senior Vice President,
Project Construction Management &
Operating Maintenance

11. Mrs. Nattawan Wongchan

- ◆ Senior Vice President, Business Support

12. Mr. Janpon Ngamaroonchote

- ◆ Senior Vice President,
Strategic Planning & Investment

13. Miss Chantira Jongamareeseethong

- ◆ Senior Vice President,
Office of Managing Director &
Investor Relations

14. Mr. Chaloepon Sricharoen

- ◆ Vice President, Sales & Marketing

15. Ms. Vijitra Saengpredekorn

- ◆ Vice President,
Renewable Energy Business Development

16. Ms. Suttirat Tangnorakul

- ◆ Vice President, Business Support (Accounting)

17. Mr. Sarawut Masrong

- ◆ Vice President, Factory
- ◆ Vice President, Products Development and
Process Improvement

18. Ms. Kullawee Saenchai Korn

- ◆ Assistant Vice President,
Financial Management & Overseas Control

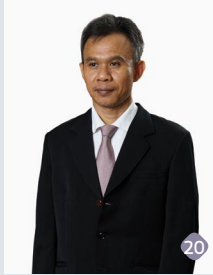


12. Management Team (continued)



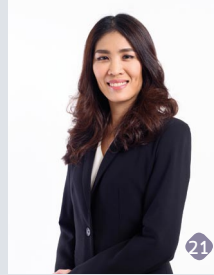
19. Mr. Tanetsiri Farkmitr

- ♦ Assistant Vice President,
Internal Audit



20. Mr. Thanapat Wonghirulchayathorn

- ♦ Assistant Vice President,
Business Support
(Information Technology)



21. Ms. Warinthip Rosarpitak

- ♦ Assistance Vice President,
Strategic Planning and Investment



22. Mr. Tritdi Boonyayone

- ♦ Assistant Vice President,
Renewable Energy
Business Development



23. Mr. Wiwat Chanprasit

- ♦ Assistant Vice President,
Business Support (Financing)



24. Mr. Kittisak Peanpanich

- ♦ Assistant Vice President, Logistics



25. Mr. Werayuth Chamwong

- ♦ Assistant Vice President, Factory
(Product Development & Process Improvement)



26. Mr. Suwit Rajdeam

- ♦ Assistant Vice President, Factory (Production)



27. Mr. Mitree Thaworncheep

- ♦ Acting Assistant Vice President, Sales & Marketing

13. Financial Highlights

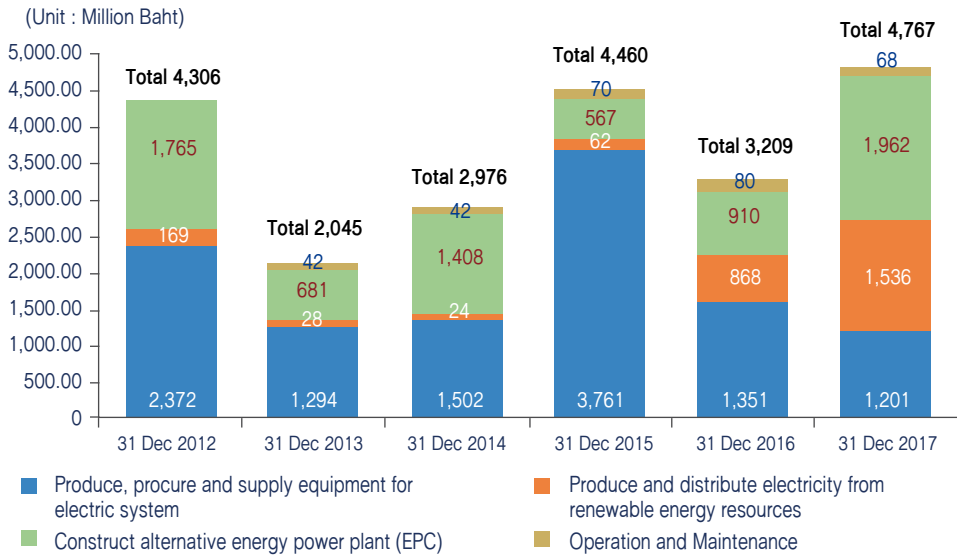
1.3.1 Financial Highlights for the past 5 years

(Unit : Baht)

	31 Dec 2017 *	31 Dec 2016 *	31 Dec 2015 *	31 Dec 2014 *	31 Dec 2013 *
Total Assets	30,377,016,189.00	25,595,831,346.00	18,815,257,873.98	7,238,664,343.88	4,579,609,369.54
Total Liabilities	20,574,360,658.00	15,846,576,065.00	10,225,033,198.56	3,878,965,046.68	1,458,877,791.45
Total Equity	9,802,655,531.00	9,749,255,280.95	8,590,224,675.42	3,359,699,297.20	3,120,731,578.09
Issued and Paid-Up Share Capital	1,854,655,373.00	1,589,693,962.75	1,283,245,216.00	879,990,265.00	659,999,929.00
Total Revenues	4,855,283,813.00	3,366,833,901.11	4,590,691,752.26	3,061,552,738.36	2,855,718,799.84
Net Profit (Loss)	711,556,760.00	615,370,137.68	673,567,733.00	545,270,215.32	883,054,885.14
Return of Assets (%)	2.34	2.40	3.58	7.53	19.28
Return of Equity (%)	7.26	6.31	7.84	16.23	28.30
Net Profit Margin (%)	14.66	18.28	14.67	17.81	30.92

Remark : * Consolidated Financial Statements

13.2 Revenue Breakdown by Business



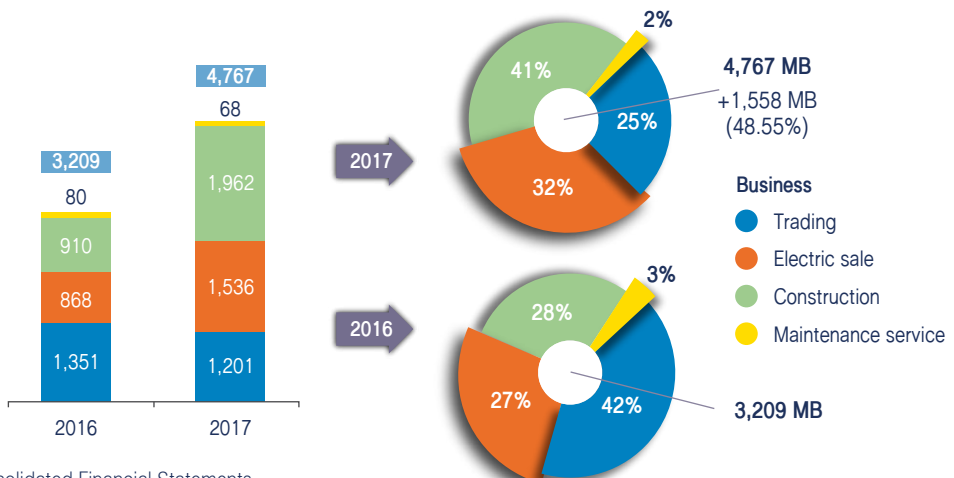
* Consolidated Financial Statements

13.3 Compared Revenue Breakdown by Business Unit

(Unit : Million Baht)

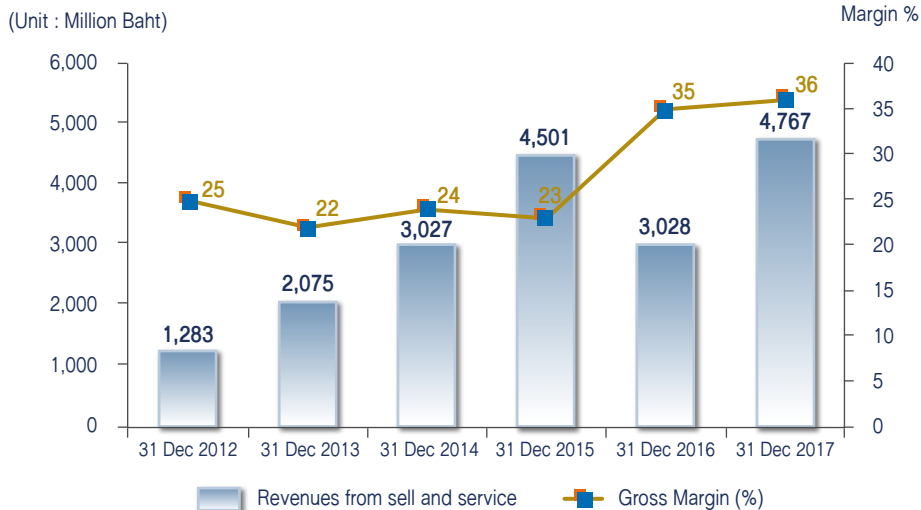
Revenue Breakdown by Business Unit

% Revenue Breakdown by Business Unit



* Consolidated Financial Statements

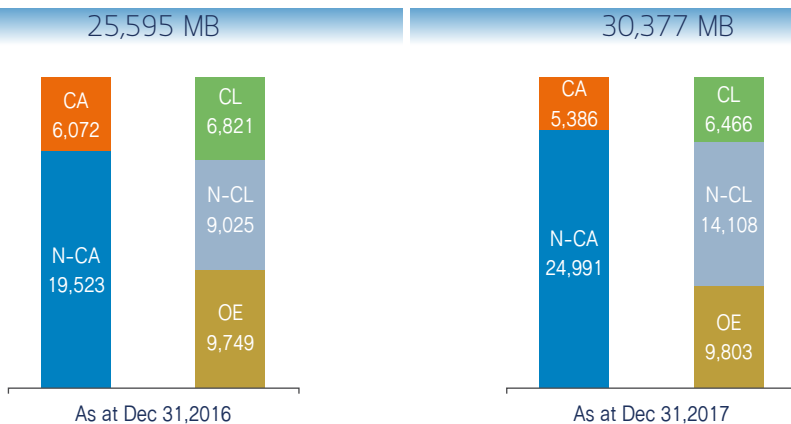
13.4 Revenue vs Overall Gross Margin



* Consolidated Financial Statements

13.5 Growth of Financial Statement

(Unit : Million Baht)



CA : Current Asset

N-CA : Non Current Asset

CL : Current Liabilities

N-CL : Non-Current Liabilities

OE : Equity

* Consolidated Financial Statements

14.

General Information
and Reference Person

14.1 General Information

Company's Name	:	Gunkul Engineering Public Company Limited
Stock Quote	:	GUNKUL
Company Registration	:	0107552000146
Head Office Address (Original Location)	:	1038-1046 Nakornchaisri Road, Nakornchaisri, Dusit Bangkok 10300
New Office Location	:	1177 PEARL BANGKOK BUILDING FL.8 Phahonyothin Rd, Phayathai, Phayathai, Bangkok 10400
Telephone Number	:	0-2242-5800
Website	:	www.gunkul.com
Email	:	ir@gunkul.com
Type of Business	:	<ul style="list-style-type: none"> - Business to produce, procure and supply equipment for electrical system in domestic and international. - Business to produce, procure and supply energy-saving products including appropriate alternative energy - Business to produce and distribute electricity from renewable energy resources in local and international - Business to construct alternative energy power plant - Business to operation and maintenance
Industry	:	Resources
Sector	:	Energy & Utilities
Type of Issued Shares	:	Common shares
Registered Capital	:	THB 1,982,967,060.25
Paid-up Capital	:	THB 1,854,655,373.25
Number of Shares	:	7,418,621,493 Shares
Par Value	:	THB 0.25

14.2 Subsidiaries

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	% of Holding
1. G.K. Assembly Co., Ltd.	GKA	Production of street lighting equipment and accessories such as handling transmission lines (Preformed), cable spacers, and hardware Including production of Mounting Structure for the solar plant under the different brands of the Group, GUNKUL, GK, ZIMLUG, PIGMAN, TOPWELD and ZIMTAP. To distribute to Gunkul Engineering Public Company Limited and K.N.P. Supply Co., Ltd.	200,000,000.00	2,000,000.00	100.00	1,999,998	99.99
2. G.K. Power Products Co., Ltd.	GKP	Production of equipment and control systems for power transmission and distribution lines under the Group's brands "GUNKUL" and "GK". By focusing on the safety equipment and joining systems such as electrical wiring, fuses and switches to distribute to Gunkul Engineering Public Company Limited and K.N.P. Supply Co., Ltd.	100,000,000.00	100,000	1,000.00	99,998	99.99
3. K.N.P. Supply Co., Ltd.	KNP	Distribution of electrical system equipment and other systems related to public sector customers directly. Acting as a contractor and participating in the bidding for the procurement of the various customer segments. The main customers being Electricity Generating Authority of Thailand (EGAT), the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA).	50,000,000.00	500,000	100.00	499,998	99.99

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	% of Holding
4. Wind Energy Development Co., Ltd.	WED	Production and distribution of electricity from renewable energy using renewable solar energy amount 60 MW by generating to the EGAT and PEA.	1,575,000,000.00	157,500,000	10.00	157,499,987	99.99
5. Greenovation Power Co., Ltd.	GNP	Production and distribution of electricity from renewable energy using renewable solar energy amount 60 MW by generating to the EGAT.	1,485,000,000.00	148,500,000	10.00	148,499,998	99.99
6. Korat Wind Energy	KWE	Production and distribution of electricity from renewable energy using renewable solar energy amount 50 MW by generating to the EGAT	1,107,000,000	11,070,000	100.00	11,069,998	99.99
7. NK Power Solar Co., Ltd. ¹⁾	NKP	Production and distribution of electricity from renewable energy in the capacity of 1 MW by generating to the PEA.	2,600,000.00	Common Shares 23,060 Preferred Shares 2,940	100.00	Common Shares 23,058 Preferred Shares 2,940	99.99
8. Gunkul Solar Power 1 Co., Ltd.	GSP-1	Produces and sells electricity from renewable energy to sell to government agencies.	100,000,000.00	1,000,000	100.00	999,997 Shares holding by GSP 99.99	99.99
9. Gunkul Solar Power 2 Co., Ltd.	GSP-2	Produces and sells electricity from renewable energy to sell to government agencies.	100,000,000.00	1,000,000	100.00	999,997 Shares holding by GSP 99.99	99.99
10. Gunkul Solar Power 3 Co., Ltd.	GSP-3	Produces and sells electricity from renewable energy to sell to government agencies.	100,000,000.00	1,000,000	100.00	999,998 Shares holding by GSP 99.99	99.99
11. Gunkul Solar Power 4 Co., Ltd.	GSP-4	Produces and sells electricity from renewable energy to sell to government agencies.	100,000,000.00	1,000,000	100.00	999,998 Shares holding by GSP 99.99	99.99
12. Gunkul Solar Power 5 Co., Ltd.	GSP-5	Produces and sells electricity from renewable energy to sell to government agencies.	100,000,000.00	1,000,000	100.00	999,998 Shares holding by GSP 99.99	99.99

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	% of Holding
13. Bright Green Power Co., Ltd.	BGP	Production and distribution of electricity from Renewable Energy by generating to the government entities and investing on the business related to renewable energy.	120,000,000.00	1,200,000	100.00	1,199,997	99.99
14. Siam Gunkul Solar Energy Co., Ltd.	SGSE	Produces and sells electricity from renewable energy to sell to government agencies.	40,900,000.00	409,000	100.00	408,997	99.99
15. Solar Energy Society Co., Ltd.	SES	Produces and sells electricity from renewable energy to sell to government agencies.	20,400,000.00	204,000	100.00	203,997	99.99
16. Gunkul Solar Roof 1 Co., Ltd.	GSR-1	Produces and sells electricity from renewable energy to sell to government agencies.	21,000,000.00	210,000	100.00	209,997	99.99
17. Gunkul Training Center Co., Ltd. (Formerly: Gunkul Solar Roof 2 Co., Ltd. "GSR-2") (Registered name change: on March 16, 2017)	GTRC	Education services, Management of seminars, training management and other related to education.	1,000,000.00	10,000	100.00	9,997	99.97
18. Gunkul Solar Community Co., Ltd.	GSC	Production and distribution of electricity from renewable energy by generating to the government entities.	10,000,000.00	100,000	100.00	99,997	99.99
19. Gunkul Power Development Co., Ltd.	GPD	Power plants construction and distribution systems for electrical equipment and other systems related to the construction of power plants.	50,000,000.00	500,000	100.00	499,997	99.99

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	% of Holding
20. Gunkul LED Lighting Co., Ltd. (Changed name: Gunkul Energy Solutions & Lighting Co., Ltd. "GES") (Registered name change on February 21, 2018)	GUNKUL-LED	Production and distribution of Lighting Bulb Type LED (In 2018, the Company expanded its business to provide integrated electrical system services.)	100,000,000.00	1,000,000	100.00	999,998	99.99
21. Infinite Alternative Energy Co., Ltd. ²⁾	IAE	Shareholding in Rang Ngern Solution Co., Ltd. 99.99% which the company produces and distributes electricity from renewable energy in the capacity of 87 MW to the PEA.	1,590,000,000.00	15,900,000	100.00	10,652,999	67.00
22. Rang Ngern Solution Co., Ltd. ²⁾	RNS	Production and distribution of electricity from renewable energy in the capacity of 87 MW by generating to the PEA.	1,355,000,000.00	13,550,000	100.00	13,549,997	Shares holding by IAE 99.99
23. GO Bioenergy Co., Ltd.	GOB	Investment in domestic companies on renewable energy and biomass business by generating to government entities.					
24. Outgrow A Co., Ltd.	OGA	Production and distribution of electricity from biomass by generating to government entities.	34,300,000.00	343,000	100.00	256,906	74.90
25. Outgrow B Co., Ltd.	OGB	Production and distribution of electricity from biomass by generating to the PEA.	8,000,000.00	80,000	100.00	79,998	Shares holding by GOB 99.99
26. Outgrow D Co., Ltd.	OGD	Production and distribution of electricity from biomass by generating to the PEA.	40,000,000.00	400,000	100.00	399,998	Shares holding by GOB 99.99

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	% of Holding
27 Outgrow E Co., Ltd.	OGE	Production and distribution of electricity from biomass by generating to the PEA.	8,000,000.00	80,000	100.00	79,998	Shares holding by GOB 99.99
28 Outgrow Wood Supply A Co., Ltd.	OGW-A	Distributor wood as raw material	1,000,000.00	10,000	100.00	9,998	Shares holding by GOB 99.99
29 Outgrow Wood Supply B Co., Ltd.	OGW-B	Distributor wood as raw material	1,000,000.00	10,000	100.00	9,998	Shares holding by GOB 99.99
30 Eco Thai Energy Co., Ltd.	ECO	Production and distribution of electricity from renewable energy by generating to the PEA.	76,500,000.00	765,000	100.00	390,150	51.00
31 Gunkul Bio Energy Co., Ltd.	GBE	Production and distribution of electricity from alternative energy power plant by generating to the government entities.	500,000.00	5,000	100.00	4,997	99.94
32 Gunkul Solar Power Co., Ltd.	GSP	Produces and sells electricity from renewable energy to sell to government agencies.	599,998,800.00	5,999,988	100	5,999,985	99.99
33 Gunkul Solar Power 6 Co., Ltd.	GSP-6	Produces and sells electricity from renewable energy to sell to government agencies.	100,000,000.00	1,000,000	100	999,997	Shares holding by GOB 99.99
34 BMP Solar Co., Ltd.	BMPS	Produces and sells electricity from solar panels installed on the ground of 8.0 MW for distribution to the PEA.	980,100.00	98,010	10	(Preferred shares) 48,010	48.98
35 Gunkul International (Mauritius) ³⁾	GIM	Overseas Investment	USD 134,825,624.00	134,825,624	USD 1.00	134,825,624	100.00

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	% of Holding
36. Gunkul Investment (Singapore) Pte. Ltd. (GIS) ³⁾	GIS	Oversea Investment	SGD 432,423.00	432,423	SGD 1.00	432,423	Investment by GIM 100.00
37. Gunkul Myanmar Power (Hawga) Pte. Ltd. ³⁾	GMP	Oversea Investment	SGD 243,684.00	243,684	SGD 1.00	243,684	Investment by GIS 100.00
38. Gunkul Myanmar Central Power 1 Co., Ltd. ⁴⁾	GKMCP-1	Production and distribution of electricity from Gas Engine by generating to the government in Myanmar.	USD 100,000.00	100,000	USD 1.00	51,000	51.00
39. Sendai Okura GD Daiichi Godo Kaisha ⁵⁾	GK Sendai	Production and distribution of electricity from solar panels installed on the ground of 31.75 by generating to the Tohoku Electric Power Co., Inc. in Japan.	Investment in GK Sendai in the total amount of JPY 4,125,000,000.00				
40. Kimitsu Mega Solar Godo Kaisha ⁵⁾	GK Kimitsu	Production and distribution of electricity from solar panels installed on the ground of 33.50 by generating to the Tokyo Electric Power Company (TEPCO) in Japan.	Investment in GK Kimitsu in the total amount of JPY 4,246,338,970.00				
41. GD Solar Utsunomiya Godo Kaisha ⁶⁾	GK Utsunomiya	Production and distribution of electricity from solar panels installed on the ground of 66.78 by generating to the Tokyo Electric Power Company (TEPCO) in Japan.	Investment in GK Utsunomiya in the total amount of JPY 3,070,000,000.00				

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	% of Holding
42. East Japan Solar 13 Godo Kaisha ⁷⁾	GK Iwakuni	Production and distribution of electricity from renewable energy in the capacity of 75 MW by generating to Chogoku Electric Power Company Inc. in Japan.		Investment in GK Iwakuni in the total amount of JPY 1,810,000,000.00			
43. Future Asset Management Kabushiki Kaisha	FAM	Investment in renewable energy business	JPY 377,710,000.00	37,771	JPY 10,000	37,771	100.00

Remark ¹⁾ GUNKUL is one of shareholder of N.K. Power Solar Co., Ltd. by holding 23,058 common shares and 2,940 preferred shares. The right of voting for common share is one share per one vote and preferred share is one share per 20 votes.

²⁾ On 19th August 2015, the Extra-Ordinary General Meeting of Shareholders No. 1/2558 passed the approval resolution to acquire IAE's common shares in proportion of 67 percent which IAE is a majority shareholder in RNS in the proportion of 99.99 percent.

³⁾ GUNKUL is shareholder of GIM by holding 100.00 percent of shares and GIM holds in GIS at 100.00 percent of shares and GIS hold in GMP at 100.00 percent of shares.

⁴⁾ GMP is shareholder of GKMCP-1 by holding 51 percent.

⁵⁾ On 19th August 2015, the Extra-Ordinary General Meeting of Shareholders No. 1/2558 passed the approval resolution to invest in GK Sendai and GK Kimitsu through GIM at the ratio of 100 percent.

⁶⁾ On 19th August 2015, the Extra-Ordinary General Meeting of Shareholders No. 1/2558 passed the approval resolution to invest in GK Utsunomiya through GIM at the ratio of 100 percent (Signed on 25th August 2016).

⁷⁾ On 19th August 2015, the Extra-Ordinary General Meeting of Shareholders No. 1/2558 passed the approval resolution to invest in East Japan Solar 13 Godo Kaisha through GIM at the ratio of 100 percent (Signed on 29th November 2016).

14.3 Affiliates

Company Name	Symbol	Type of Business	Amount of Shares holding by GUNKUL (Shares)				% of Holding
			Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Joint Venture	
1. G - Power Source Co., Ltd.	GPS	Production and distribution of electricity from renewable energy in the capacity of 26 MW by generating to the PEA.	930,000,000.00	9,300,000	100.00	Electricity Generating Public Co., Ltd.	40.00
2. Gunkul Chubu Powergen Co., Ltd. ¹⁾	GCPG	Production and distribution of electricity from renewable energy in the capacity of 30.9 MW by generating to the PEA.	992,000,000.00	9,920,000	100.00	Chubu Electric Power Gen B.V.	51.00
3. Siam Wind Energy Co., Ltd. - Registration of dissolution: On June 19, 2017 - Registration of dissolution: On August 2, 2017	SWE	To carry out the production and distribution of electricity from renewable energy for sale to government entities.	1,000,000.00	10,000	100.00	Person	40.00
4. WHA Gunkul Green Solar Roof 1 Co., Ltd.	WHA_GSR-1	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	11,500,000.00	1,150,000	10.00	WHA Corporation Public Co., Ltd.	25.01
5. WHA Gunkul Green Solar Roof 2 Co., Ltd. - Registration of dissolution: On June 19, 2017 - Registration of liquidation: On August 2, 2017	WHA_GSR-2	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	1,000,000.00	100,000	10.00	WHA Corporation Public Co., Ltd.	25.01

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL		
						(Shares)	Joint Venture	% of Holding
6. WHA Gunkul Green Solar Roof 3 Co., Ltd.	WHA_GSR-3	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	14,500,000.00	1,450,000	10.00	362,645	WHA Corporation Public Co., Ltd.	25.01
7. WHA Gunkul Green Solar Roof 4 Co., Ltd. - Registration of dissolution: On 12 SEP 2017 - Registration of dissolution: On 12 OCT 2017	WHA_GSR-4	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	1,000,000.00	100,000	10.00	25,010	WHA Corporation Public Co., Ltd.	25.01
8. WHA Gunkul Green Solar Roof 5 Co., Ltd. - Registration of dissolution: On 12 SEP 2017 - Registration of dissolution: On 12 OCT 2017	WHA_GSR-5	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	1,000,000.00	100,000	10.00	25,010	WHA Corporation Public Co., Ltd.	25.01
9. WHA Gunkul Green Solar Roof 6 Co., Ltd.	WHA_GSR-6	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	14,500,000.00	1,450,000	10.00	362,645	WHA Corporation Public Co., Ltd.	25.01

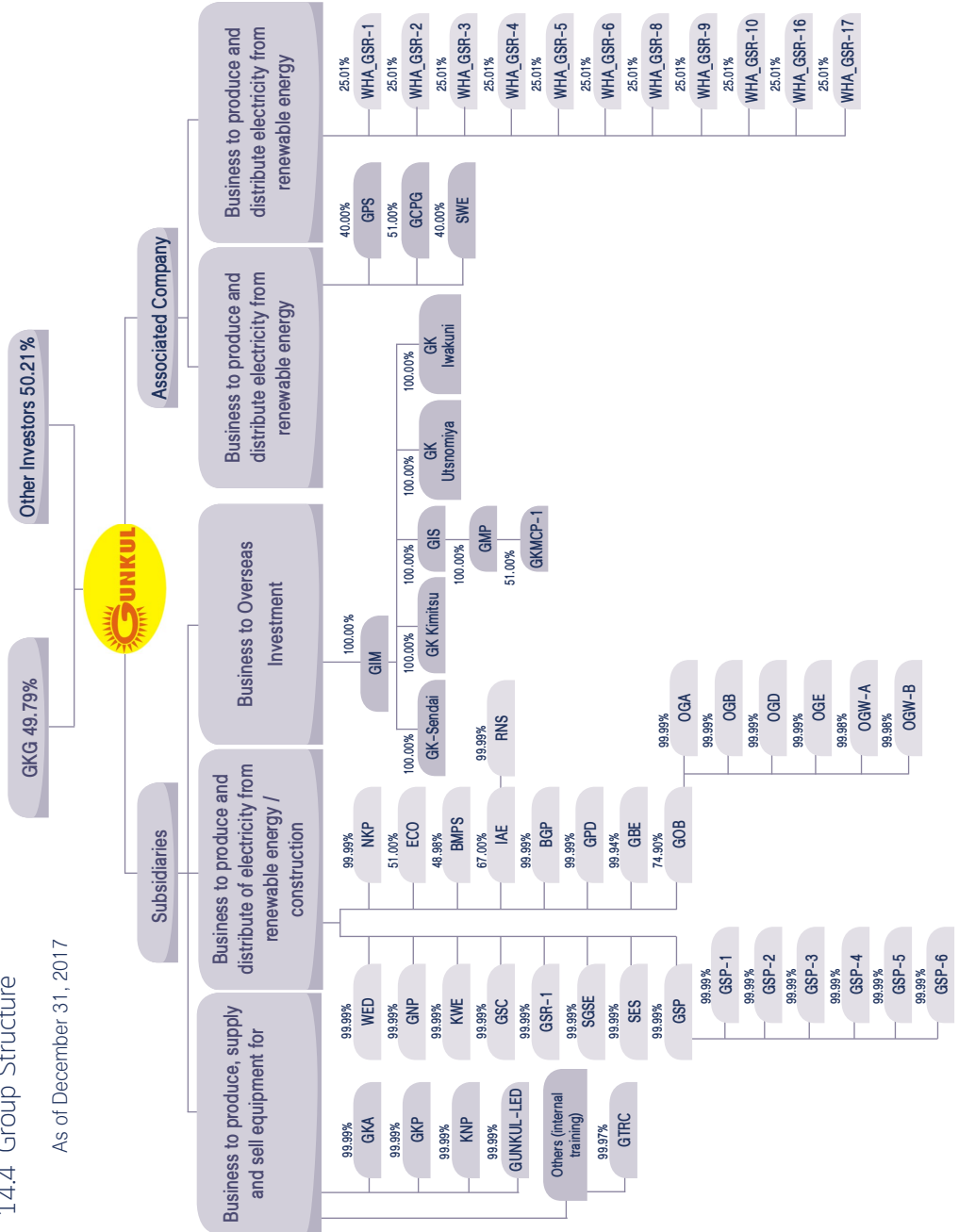
Company Name	Symbol	Type of Business	Amount of Shares holding by GUNKUL (Shares)					% of Holding
			Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	Joint Venture	
10. WHA Gunkul Green Solar Roof 8 Co., Ltd. - Registration of dissolution: On 12 SEP 2017 - Registration of dissolution: On 12 OCT 2017	WHA_GSR-8	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	100,000.00	10,000	10.00	2,501	WHA Corporation Public Co., Ltd.	25.01
11. WHA Gunkul Green Solar Roof 9 Co., Ltd. - Registration of dissolution: On 12 SEP 2017 - Registration of dissolution: On 12 OCT 2017	WHA_GSR-9	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	100,000.00	10,000	10.00	2,501	WHA Corporation Public Co., Ltd.	25.01
12. WHA Gunkul Green Solar Roof 10 Co., Ltd. - Registration of dissolution: On 12 SEP 2017 - Registration of dissolution: On 12 OCT 2017	WHA_GSR-10	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	15,500,000.00	1,550,000	10.00	387,655	WHA Corporation Public Co., Ltd.	25.01

Company Name	Symbol	Type of Business	Registered Capital (THB)	Total Amount of Shares (Shares)	Par Value (THB)	Amount of Shares holding by GUNKUL (Shares)	Joint Venture	% of Holding
13. WHA Gunkul Green Solar Roof 16 Co., Ltd. - Registration of dissolution: On 12 SEP 2017 - Registration of dissolution: On 12 OCT 2017	WHA_GSR-16	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	100,000.00	10,000	10.00	2,501	WHA Corporation Public Co., Ltd.	25.01
14. WHA Gunkul Green Solar Roof 17 Co., Ltd.	WHA_GSR-17	Production and distribution of electricity from Solar PV Rooftop by generating to the PEA and MEA.	16,000,000.00	1,600,000	10.00	400,160	WHA Corporation Public Co., Ltd.	25.01

Remark ¹⁾ Gunkul Chubu Powergen Co., Ltd. is a joint venture. The Board authorized the signing of joint control.

1.4.4 Group Structure

As of December 31, 2017



14.5 Other References

Regulator

The Securities and Exchange Commission, Thailand (SEC)
333/3 Vibhavadi-Rangsit Road, Chomphon, Chatuchak
Bangkok 10900, Thailand
Tel. +66 2033 9999
Fax. +66 2033 9660

Regulator

The Stock Exchange of Thailand (SET)
93 Ratchadaphisek Road, Dindaeng, Dindaeng, Bangkok 10400
Tel. +66 2009 9000
Fax. +66 2009 9991

Share Registrar

Thailand Securities Depository Company Limited (TSD)
93 Ratchadaphisek Road, Dindaeng, Dindaeng, Bangkok 10400
Tel. +66 2009 9000
Fax. +66 2009 9991

Auditor

KPMG Phoomchai Audit Ltd.
Fl. 50-51 Empire Tower No.1 South Sathorn Rd, Yannawa,
Sathorn Bangkok 10120
Tel. +66 2677 2000
Fax. +66 2677 2222

Legal Advisor

Kudun and Partners Co., Ltd.
973 President Tower, 14 Floor, Ploenchit Road,
Lumpini, Pathumwan, Bangkok 10330
Tel. +66 2656 0813
Fax. +66 2656 0814

Financial institution

Siam Commercial Bank PLC.
9 Ratchadaphisek Road, Jatujak, Bangkok 10900
Tel. +66 2544-1000
Fax. +66 2544-4948

15. Policy and Overall Business Operations

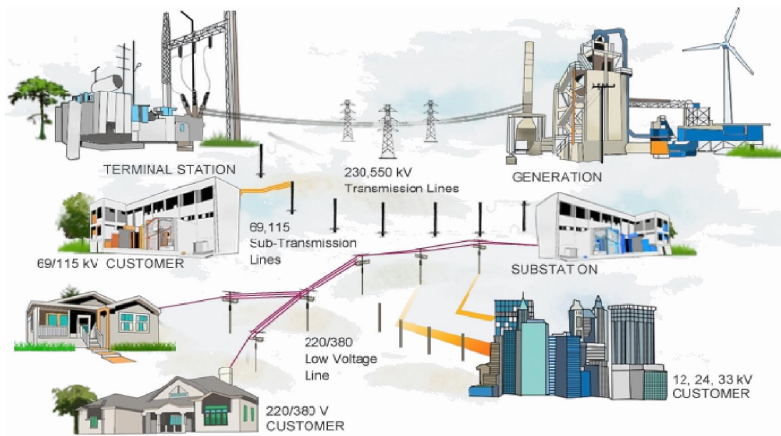
15.1 Perspective of the group business structures

The power system of Thailand consists of two main components:

1. Electricity Production
2. Transmission and distribution

The transmission of electricity from power plants to consumers must go through the various sub-systems including the high voltage grid, power station system, the distribution system, and underground cables, shown in the diagram below.

Diagram of electric transmission and distribution system of Thailand



Business of the Company's group could be classified as follows:

1. Business of manufacture, supply and distribution of equipment for electrical system in domestically and internationally.
2. Business of manufacture, supply and distribution of energy-saving products including appropriate alternative energy.
 - 2.1 To produce and supply "Lighting Lamp" LED type, BIPV Glass, Flexible Solar PV including appropriate alternative energy.
 - 2.2 To produce and supply solar cell module including equipment supply which related to the solar power system.

3. Business to produce and distribute electricity from renewable energy resources in domestically and internationally.
 - 3.1 Solar Farm
 - 3.2 Solar PV Rooftop
 - 3.3 Wind Farm
 - 3.4 Biomass Energy
4. Business to construct the renewable power plants.
5. Business of Power Plant Maintenance Services.

15.2 Business Goals.

In 2018, the Company has a business goal defined as follows;

1. Maintain the customer base of the organization, including the Provincial Electricity Authority (PEA), Metropolitan Electricity Authority, the Electricity Generating Authority of Thailand, private sector both domestically and internationally, and the Electricity Authority of the Republic of the Union of Myanmar, Lao People's Democratic Republic, Japan and Malaysia etc.
2. Expand both domestic and international customer base to increase the market share.
3. Provide new products to meet customer needs.
4. Study an investment and expand a renewable energy business both in domestically and internationally.
 - Electricity generating business by applying to a government agencies for direct electricity purchase agreement including joint ventures with other operators which have power purchase agreements.
 - Distribution of renewable energy equipment.
 - Power plant maintenance business.
 - Consulting business related to renewable energy.
 - Any other business related
5. Complete the construction of the renewable energy power plant as specified in the power purchase agreement with the counterparties.
6. Study in construction of biomass power plants, both in domestically and internationally.
7. Increase business partnerships to increase business security.
8. Enhance the efficiency of operations to support the expansion of business by adopting advanced technologies, such as information network in the enterprise, video conferencing.
9. Develop staff ability to keep pace with the growth of the Company.
10. Support the Corporate Social Responsibility (CSR) of the Company.

11. Control the Company's performance and the Group to comply with the rules of the corporate governance and with an effective internal control.
12. Encourage the organization to comply with anti-corruption measures.

3 – 5 years Business Plans

Gunkul Engineering Public Company Limited is committed to be the leading provider of renewable energy. The business model of generating electricity from renewable energy which the Company takes an interest in the following businesses:

- Solar Cell Power Plant
- Wine Turbine Power Plant
- Natural Gas Vehicles Power Plant
- Biomass Power Plant (Wood and Energy Crops)
- Biomass Power Plant (Waste)

The Company's targets within year 2021, the Company will have renewable power plants in the domestically and internationally, with a total capacity of 1,000 Megawatts (MW). The Company aims to invest a power plant in Asian, such as Thailand, Japan, Vietnam, Malaysia, Indonesia, Philippines, the Republic of the Union of Myanmar, Taiwan and South Korea as respectively.

About the power plant investment in Thailand, the Company is preparing to develop and invest in solar cell power plant according to power development plan and national energy policy council, such as Agricultural cooperatives open solar roof project in Pilot Project. In addition, the Company is in the process of installing solar roof power plant to sell electricity to factories and department stores. There also have projects to provide solar roof installation services to interested households.

For the power plant investment in abroad, the Company focused on investing in the countries with high political stability, such as Japan, Vietnam and Malaysia, which the Company have begun to invest and study the possibility of investing in renewable power plant especially in Japan. At present, the Company has invested in solar power plant in Japan with a total capacity over 200 Megawatts (MW).

In addition, from the policy of being a leader in the production of electricity from renewable energy, the Company continues to develop new products and original products by focusing on research and development to get competitive advantage by emphasizing engineering value and also promotes continuous product quality development to deliver satisfaction to our customers. This will lead to the acceptance of the "GUNKUL" brand and build loyalty to the Company's brand and products. The products which developed by the Company are support the growth of the Company and increase the chances of a new products, sales channels and the market value which will rise for the next two to three years such as;

- Products for construction and building projects, such as grounding system and lightning protection devices.
- LED Lamp product in brand “GLO” and “GUNKUL”
- Lighting equipment which have LED as a component.
- Electronic meter (AMI) and Mechanical watt-hour meter.
- Solar Panel brand “GUNKUL”.

The Company expects to develop new products based on above which will increase the market value and growth rate of the Company’s high-voltage equipment manufacturing and distribution business. To maintain annual growth rate, not to be less than 15%, and to maintain the leading position in Thailand’s high-voltage equipment manufacturer and distributor market and can create mutual pride with the Company in the future.

15.3 Change and Development of the Company and its subsidiaries are as follows:

Year 1982	- Establishment of Gunkul Engineering Co., Ltd. with registered capital of 1,000,000 baht. (At present, the registered capital is 1,982,967,060.25 bath and paid-up capital is 1,854,655,373.25 bath)
Year 1992	- Establishment of G.K. Assembly Co., Ltd. with registered capital of 2,000,000 baht (Current registered capital: 200,000,000 baht and the Company holding shares in the ratio of 99.99%) - Establishment of G.K. Power Product Co., Ltd. (Formerly known as Kerney (Thailand) Co., Ltd.), with registered capital of 2,600,000 baht. (Current registered capital: 100,000,000 baht and the Company holding shares in the ratio of 99.99%)
Year 1993	- Establishment of K.N.P. Supply Co., Ltd. with registered capital of 1,000,000 baht. (Current registered capital: 50,000,000 baht and the Company holding shares in the ratio of 99.99%)
Year 2009	- Gunkul Engineering Co., Ltd. increased its registered capital from 300,000,000 baht to 400,000,000 baht and changed the par value of ordinary shares from 100 baht to 1 baht per share. - The Company is transformed into a public limited company and changed its name to “Gunkul Engineering Public Company Limited”. - On December 11, 2009, Establishment of Gunkul Powergen Co., Ltd. with registered capital of 100,000,000 baht to produce and sell electricity from renewable energy. (Current registered capital: 992,000,000 baht and the Company holding shares in the ratio of 51%)
Year 2010	- On October 11-13, 2010, the Company has made an initial public offering of 100,000,000 shares, representing 25% of the total number of 400,000,000 ordinary shares with a par value of 1.00 baht each, at a price of 5.40 baht.

	<ul style="list-style-type: none"> - On October 15, 2010, the Stock Exchange of Thailand added GUNKUL securities as new securities on the Stock Exchange of Thailand. - On October 19, 2010. GUNKUL securities traded on the Stock Exchange of Thailand for the first day (First Day Trade). - On November 19, 2010, the Company acquired the common stock of G-Power Source Co., Ltd. which operates in the production and distribution of electricity from solar energy and being a party with the Provincial Electricity Authority (PEA) which has 4 contracts of power purchase agreements in a total of 26 Megawatts (MW) with a period of 25 years and is supported by an additional electricity charge of 8.00 baht per unit for a period of 10 years. This project also receives promotional privileges from the Board of Investment (BOI). The Company has purchased 9,898 ordinary shares at a price of 6,500 baht per share, total amount 64,337,000 baht. The Company holds 98.98% of the registered capital of 1,000,000 baht (Current registered capitals: 930,000,000 baht and the Company holding shares in the ratio of 40%) - Gunkul Powergen Co., Ltd. signed a power purchase agreement with the Provincial Electricity Authority to produce and sell electricity from solar energy, with a total of 5 contracts for a total of 30.9 megawatts of solar power for a period of 25 years. The price for the electricity purchase (Adder) from the Provincial Electricity Authority at the price of 8.00 baht per unit for a period of 10 years, including the project is also received a benefit of investment support from the Board of Investment (BOI).
Year 2011	<ul style="list-style-type: none"> - On November 2, 2011, the Company signed a Memorandum of Understanding in Wind power 1,000 MW with the Department of Energy, Ministry of Energy Of the Republic of the Union of Myanmar. The study sites are Mon State, Ka-yin State and Tanin Kaye State.
Year 2012	<ul style="list-style-type: none"> - On March 30, 2012, the Company sold shares of G-Power Source Co., Ltd. which operates production and distribution of electricity from solar energy and has an agreement with the Provincial Electricity Authority of 4 contracts, total 26 Megawatts (MW) and has been supporting the electric margin (Adder) 8.00 baht per unit. The Company sold shares to The Electricity Generating Public Company Limited of 4,500,000 shares, for a total of 629,920,000 baht, representing a total stake of 60% of the registered capital 750,000,000 baht. (Currently registered 930,000,000 baht and the Company holding shares in the ratio of 40%) - On May 15, 2012, the Company acquired the shares of Wind Energy Development Company Limited from Impact Energy Asia Limited, which operates production and distribution of electricity from wind energy. The Power Purchase Agreement with the Electricity Generating Authority of Thailand and the Provincial Electricity Authority with the contracts total 3 contracts and totaling 60 Megawatts (MW), and has been supporting the electric margin (Adder) 3.50 baht per unit, the Company acquired the common stock of 5,460,000 shares at a price of 95.60 baht for a total amount of 522,000,000 baht, representing a stake of 70% of the registered capital 78,000,000,000 baht. (Current registered capital 1,575,000,000 baht and the Company holding shares in the ratio of 99.99%)

	<ul style="list-style-type: none"> - On January 31, 2013, the Company acquired a stake in NK Power Sola Co., Ltd. which operates and distributes electricity from solar power by having a contracting party to the Electricity Generating Authority of Thailand, with 1 MW power purchase agreement, representing as 49.00% shareholding. The Company holding shares as 9,799 ordinary shares and 2,940 preferred shares. The voting right for 1 ordinary share is 1 vote and 1 preferred stock is 20 shares. (Currently registered capital 2,600,000 baht However, In 2016, the Company received transfer ordinary shares from the ordinary shareholders for 13,259 shares. The total number of ordinary shares is 23,058 shares and 2,940 preferred shares, representing as holding shares in the ratio of 99.99%)
Year 2013	<ul style="list-style-type: none"> - On February 25, 2013, the Company disposed of common shares in Gunkul Powergen Co., Ltd. which operates Solar Power generation and distribution business and is a contractual party of 5 electricity sale agreements with the Provincial Electricity Authority, a total capacity of 30.9 Megawatts (MW) and adder rate of 8.00 baht per unit. In this regards 4,860,800 common shares, equivalent to 49% of the 992,000,000 baht registered capital, were sold to Chubu Electric Power Gem B.V., Japan. (Currently registered capital of 992,000,000 baht and the Company holding shares in the ratio of 51%) - On June 13, 2013, Establishment of Siam Wind Energy Co., Ltd., which operates production and distribution of electricity from renewable energy by emphasized on wind energy. The company holding shares at the ratio of 40% of the registered capital 1,000,000 baht. (Currently registered capital of 1,000,000 baht. However, the company liquidated the Company on June 19, 2017 and completed liquidation on August 2, 2017) - The Company registered the Establishment of Gunkul International (Mauritius) ("GIM") in the Republic of Mauritius. The Company held a stake of 100% of the 12,000 USD registered capital in GIM (the current capital is 134,825,624 U.S. dollar) and establish Gunkul International (Singapore) Pte. Ltd. ("GIS") and Gunkul Myanmar Power (Hlawga) Pte. Ltd. ("GMP") in Singapore. GIM held a stake of 100% of the 28,000-SGD registered capital in GIS (the current capital is 432,423 Singapore dollar), and GIS held a stake of 100% of the 14,000-SGD registered capital in GMP (Currently registered capital of 243,684 Singapore dollar). The purpose is to expand the investment in foreign companies. - On July 1, 2013, Gunkul Powergen Co., Ltd., changed name into Gunkul Chubu Powergen Co., Ltd. - On August 29, 2013, The Company has established a subsidiary company, Siam Gunkul Solar Energy Co., Ltd. to operate the business of producing and distributing electricity from power plants installed on the roof for selling to Provincial Electricity Authority and Metropolitan Electricity Authority, registered capital 1,000,000 baht, with a par value of 100 baht. (Current registered capital 40,900,000 baht and the Company holding shares in the ratio of 99.99%)

- In August 2013, the Company established Gunkul Solar Roof 1 Co., Ltd. (GSR-1), Gunkul Solar Roof 2 Co., Ltd. (GSR-2), Gunkul Solar Power 1 Co., Ltd. (GSP-1), Gunkul Solar Power 2 Co., Ltd. (GSP-2), Bright Green Power Co., Ltd. (BGP) and Solar Energy Society Co., Ltd. (SES) to operate solar rooftop power generation and distribution business for supplying to the Provincial Electricity Authority and the Metropolitan Electricity Authority. The Company held stakes of 99.97% of their respective 1,000,000 baht registered capitals (the current registered capitals of GSR-1 are 21,000,000 baht, GSR-2 is 1,000,000 baht, GSP-1 is 100,000,000 baht, GSP-2 is 100,000,000 baht, BGP is 120,000,000 baht and SES is 20,400,000 baht. The Company held stakes in GSR-1, GSP-1, GSP-2, BGP, SES as 99.99% and in GSP-2 as 99.97%).
- On March 16, 2017, Gunkul Solar Roof 2 Co., Ltd. changed name into Gunkul Training Center Co., Ltd. with the purpose of education services, management of seminars, training management and other related to education.
- In August 2013, the Company established Gunkul Power Development Co., Ltd. to operate the solar rooftop power generation and distribution for supplying to the Provincial Electricity Authority and the Metropolitan Electricity Authority, as well as to operate businesses of constructing power plant and distributing equipment for electrical and other systems related to power plant construction. The Company held a stake of 99.99% of the 1,000,000 baht registered capital (The current capital is 50,000,000 baht and the Company holding shares in the ratio of 99.99%).
- In August 2013, WHA Corporation PCL, established WHA Gunkul Green Solar Roof 1 Co., Ltd. (WHA_GSR-1), WHA Gunkul Green Solar Roof 2 Co., Ltd. (WHA_GSR-2), WHA Gunkul Green Solar Roof 3 Co., Ltd. (WHA_GSR-3), WHA Gunkul Green Solar Roof 4 Co., Ltd. (WHA_GSR-4), WHA Gunkul Green Solar Roof 5 Co., Ltd. (WHA_GSR-5), and WHA Gunkul Green Solar Roof 6 Co., Ltd. (WHA_GSR-6), in which the Company held stakes of 25.01% of their respective 1,000,000 baht registered capitals, to operate solar rooftop power generation and distribution business for supplying to the Provincial Electricity Authority and the Metropolitan Electricity Authority. (Currently registered capital of WHA_GSR-1 is 11,500,000 baht, WHA_GSR-2 is 1,000,000 baht, WHA_GSR-3 is 14,500,000 baht, WHA_GSR-4 is 1,000,000 baht, WHA_GSR-5 is 1,000,000 baht and WHA_GSR-6 is 14,500,000 baht and the Company still holding shares in the ratio of 25.01%).
- In September 2013, WHA Corporation PCL established WHA Gunkul Green Solar Roof 8 Co., Ltd., WHA Gunkul Green Solar Roof 9 Co., Ltd., WHA Gunkul Green Solar Roof 10 Co., Ltd., WHA Gunkul Green Solar Roof 16 Co., Ltd., and WHA Gunkul Green Solar Roof 17 Co., Ltd., which the Company held stakes of 25.01% of their respective 100,000 baht registered capitals, to operate solar rooftop power generation and distribution business for supplying to the Provincial Electricity Authority and the Metropolitan Electricity

Authority. (Currently registered capital of WHA_GSR-8 is 100,000 baht, WHA_GSR-9 is 100,000 baht, WHA_GSR-10 is 15,500,000 baht, WHA_GSR-16 is 100,000 baht and WHA_GSR-17 is 16,000,000 baht and the Company still holding shares in the ratio of 25.01%).

- Year 2014
- On February 13, 2014, the Company had acquired 199,998 Common Shares in Greenovation Power Co., Ltd. ("GNP") from Impact Energy Asia Limited ("IEA") which represents 99.99% of GNP's registered shares of 200,000 shares at the total selling price of 432,000,000 baht. GNP do business as a Power Producer from wind energy resource and being a contract partner with Electricity Generating Authority of Thailand and has a Power Purchase Agreement (PPA) in capacity of 60 Megawatts (MW), the registered capital of 2,000,000 baht. (Currently registered capital is 1,485,000,000 baht and the Company still holding shares in the ratio of 99.99%).
 - On April 17, 2014, the Company had established a new subsidiary to carry out the manufacturing and distributing of Lighting Bulb, type LED named is GUNKUL-LED, the Company held stakes of 74.79% of their respective 10,000,000 baht, registered capitals (Current registered capital is 100,000,000 baht and the Company holding shares in the ratio of 99.99%).
 - On June 2, 2014, the Company had acquired of 31,563,000 Common Shares in Wind Energy Development Co., Ltd. ("WED") from Impact Energy Asia Limited Co., Ltd. ("IEA") which represents 30% of WED's registered shares of 1,052,100,000 shares at the total selling price of 373,211,000 that, totally holding 99.99% of registered capital of 1,052,000,000 baht (current capital: 1,575,000,000 baht and the Company holding shares in the ratio of 99.99%). WED do business as a Power Producer from wind energy resource which electricity generated will be sold to the Electricity Generating Authority of Thailand ("EGAT") and the Province Electricity Authority ("PEA") in accordance to 3 agreements in capacity of 60 Megawatts (MW) supporting (Adder) THB 3.50 per unit (Current registered capital is 1,575,000,000 baht and the Company holding shares in the ratio of 99.99%).
 - On June 16, 2014., the Company had established a new subsidiary to carry out the Generating Electrical Power and Engineering Procurement and Construction named Gunkul Solar Community Co., Ltd., in which the registered capital of 1,000,000 at par value of 100 baht (Current registered capital 10,000,000 baht and the Company holding shares in the ratio of 99.99%).
 - On September 18, 2014, the Company had signed Memorandum of Understanding (MOU) to corporate Solar Roof business with East Coast Furnitech Public Company Limited (ECF).
 - On December 17, 2014, Gunkul International (Mauritius) (GIM), which is a subsidiary of the Company to purchase shares of Sendai Okura Mega Solar Godo Kaisha ("GK Sendai"), which is incorporated in Japan by operating the solar power plant business with 31.75 Megawatts (MW) contract capacity (38.10 Megawatts

installed capacity) located in Miyaki, Japan. GK Sendai produces electricity from solar energy and sells the electricity to Tohoku Electric Power Co., Inc. ("Tohoku Electric") in Japan, the local utility, at JPY 36 per unit in feed in tariff scheme of a period 20 years concession in the ratio of 100% shareholders in the amount of JPY1.80 billion or approximately 504,000,000 baht. (Changed name: "Sendai Okura GD Daiichi Godo Kaisha")

- Year 2015
- On February 23, 2015, the Company has purchased the ordinary shares of Korat Wind Energy Company Limited ("KWE") from Quantitus Engineering Company Limited ("QE") which engaged in the business of generating electricity from wind energy for distribution to the EGAT of 50 megawatts, at 9,998 shares or equivalent to 99.98% of total registered shares of 10,000 shares. Total amount of the shares purchased was 432,000,000 baht, while the estimated construction and development budget was 4,249,000,000 baht and the total project value was 4,681,000,000 baht. (Current registered capital 1,107,000,000 baht and the Company holding shares in the ratio of 99.99%).
 - On March 9, 2015, Wind Energy Development Company Limited ("WED"), which is the one of the Company's subsidiaries, has invested in the wind turbine power plant project with the total project value at approximately 6,145,721,100 baht. WED has signed the contract in PPA in the capacity of 50 Megawatts (MW) wind turbine power plant from Electricity Generating Authority of Thailand ("EGAT") as well as the capacity of 8+2 Megawatts (MW) with 3.50 baht, adder from Provincial Electricity Authority ("PEA") for the period of 10 years.
 - On April 8, 2015, GUNKUL has signed the Memorandum of Understanding ("MOU") in jointly generating of solar cell on rooftop system with Chai Watana Tannery Group Public Company Limited ("CWT") whereas GWT and GUNKUL shall jointly establish a company in developing this project. GUNKUL shall have the shareholding in this new company at 25.01%
 - On June 23, 2015, the Company has informed the information technology of investment in the wind turbine power plant of Greenovation Power Company Limited ("GNP") in approximated amount of 6,325,000,000 baht. GNP operates its business in developing and constructing for Electricity Generating Authority of Thailand ("EGAT") under the capacity of 60 Megawatts (MW) electrical one agreement with 3.50 baht, adder for the period of 10 years. This power plant is situated in Huay Bong Sub-district, Dan Koon Tod District, Nakorn Ratchasima Province with the expected complete construction and commercially distribution within the first quarter of 2017.
 - On August 19, 2015, the Extraordinary General Meeting of Shareholders No. 1/2015 passed the following resolutions:
 - Ratified the Company in investing in the capacity of 60 Megawatts (MW) wind turbine power plant with Greenovation Power Company Limited with the total project value of 6,325,000,000 baht.

- Ratified the Company in investing in the capacity of 31.75 MW solar cell power plant; Sendai Okura Mega Godo Kaisha ("GK Sendai") (Changed name: "Sendai Okura GD Daiichi Godo Kaisha") in Japan with the total project value of 12,599,100,000 Yen or approximately 3,527,800,000 baht.
- Approved the Company in purchasing 67% of ordinary shares of Infinite Alternative Energy Company Limited ("IAE") which is a shareholder of Rang Ngern Solution Company Limited ("RNS"). RNS is the counterparty in the power transaction of the solar cell power plant and the capacity of 87 Megawatts (MW) project's total value is approximately 5,487,500,000 baht. (Current registered capital of IAE is 1,590,000,000 baht and RNS is 1,355,000,000 baht)
- Approved the Company in investing in the capacity of 33.50 Megawatts (MW) solar cell power plant; Kimitsu Okura Mega Solar Godo Kaishi ("GK Kimitsu") (Changed name: "Kimitsu Mega Solar Godo Kaisha") in Japan with the total project value of 13,057,800,000 Yen or approximate 3,656,200,000 baht by production and distribution of electricity from solar power to the Tokyo Electric Power Company (TEPCO) in Japan.
- Approved the Company in acquiring source of investment fund as the capital increase by issuing the newly ordinary share to the Company's existing shareholders in proportion to their respective shareholding (Right Offering) and issue the warrant certificate to the Company's existing shareholders who wish to exercise their right in purchasing the ordinary shares of the Company. These newly ordinary shares issuance for Right Offering shall be not more than 274,981,118 shares at the par value of Baht 1 per share. Details are as follows:
 1. Issuing not more than 183,320,745 newly ordinary shares at the par value of 1 baht per share to the existing shareholders of the Company in proportion to their respective shareholding (Right Offering) of 6 existing shares to 1 unit of warrants (disregarding the fraction). The offering price is 22 baht per share.
 In the event, that there are remaining amount of the newly issued ordinary shares after the issuance to the existing shareholders of the company, the company shall allocate such amount to the shareholders who express their intention in purchasing the newly issued ordinary shares apart from the proportion to their respective shareholding until the full amount is completely allocated, unless the remaining is the fraction which cannot be allocated or no more shareholder expresses personal intention in purchasing the newly issued ordinary shares.
 2. Issuing not more than 91,660,373 newly ordinary shares at the par value of 1 baht per share to the existing shareholders of the Company in proportion to their respective shareholding (Rights Offering) of 2 existing shares to 1 unit of warrants for the exercise of right of GUNKUL-W.

	<ul style="list-style-type: none"> - On November 4, 2015, the Company announced the establishment of GO Bioenergy Co., Ltd. to operate the electric energy from biomass. The Company's shareholding in this company is 74.90%, a while Outgrow Energy Consult Company Limited's shareholding is 25.10%. The registered capital is 34,300,000 baht. (Current registered capital is 34,300,000 baht) - The Company acquired the shares of Outgrow A Co., Ltd., Outgrow B Co., Ltd., Outgrow D Co., Ltd., Outgrow E Co., Ltd., Outgrow Wood Supply A Co., Ltd. and Outgrow Wood Supply B Co., Ltd. which are all doing a business about electricity from biomass power. - On November 12, 2015, the Company has purchased the ordinary shares of Gunkul LED Lighting Company Limited from the existing shareholders at 150,000 shares or equivalent to 15% of the current registered capital of 6,090,000 baht. Gunkul's total shareholding in this company is 899,999 shares or equivalent to 90% of total ordinary shares (current registered capital is 100,000,000 baht and the Company holding shares in the ratio of 99.99%).
Year 2016	<ul style="list-style-type: none"> - On January 21, 2016, the Extraordinary General Meeting Shareholders No.1/2016 passed a resolution to increase the authorized capital of the Company up to 41,500,000 shares valued at par value 1 baht to the Siam Commercial Bank, which is offering a private placement. The price per share was 22.84 baht per share. - On April 26, 2016, Annual General Meeting of Shareholders for 2016, resolved to change the par value per share of the Company from 1.00 baht per share to be 0.25 baht per share and an increase in the registered capital of the Company. To be support the stock dividend and to accommodate the exercise of the Warrants. The warrants to purchase the common shares of the Company 1 (GUNKUL-W). After the revaluation of capital stock shares. The new capital total 1,416,405,589 baht changed to 1,699,686,359 baht. Issuing new ordinary shares amount 1,133,123,080 shares at par value of 0.25 baht per share. Including the adjustment of the warrants to purchase common shares of the Company No. 1 (GUNKUL-W). As per the exercise Ratio 1 warrant : 1 common share to 1 unit : 4.8 common share, and the exercise price of 27.00 baht per share to 5.625 baht per share, and resolved to raise the issue and offering of debentures in the amount of 2,000 million baht. Therefore, the amount of 1,000 million baht, fine not exceeding the new limit is 3,000 million baht and not over 7 years. - On April 27, 2016, the Company filed a registration with the Department of Business Development, Ministry of Commerce to change the par value of one baht to be 0.25 baht. - On August 10, 2016, the Company announced the establishment, Gunkul Bio Energy Co., Ltd., to produce raw material for the biomass power plant, the Company held 99.94% of the registered capital of 500,000 baht (Current registered capital of 500,000 baht)

- On August 25, 2016, the board of Directors Meeting No. 6/2016 approved the Gunkul International (Mauritius) ("GIM"), a subsidiary of the Company. Transaction investment in the solar power plant located GD Utsunomiya (Changed name: "GD Solar Utsunomiya Godo Kaisha" "GK Utsunomiya"), Utsunomiya City, Tochigi Province, Japan. The capacity under power purchase of 66.78 Megawatts (MW), Installed of 72.80 Megawatts (MW), The manufacturer and distributor of solar power to the Tokyo Electric Power Company ("TEPCO") in Japan was awarded the concession to sold electricity to TEPCO in Japan, period 20 years. The rate of purchase power feed-in tariff (FIT) Yen 36 per unit, the total value of the project is approximately 24,017 million yen or approximate of 8,391 million baht.
- On October 12, 2016, the Board of Directors Meeting No. 7/2016, approval for the Company to buying preferred stock in the BMP Solar Company Limited ("BMP Solar"), which operates the solar power plants. A capacity of 8.00 Megawatts (MW) of 48,000 or 48.98% of the paid-up capital totaling registered of 98,000 shares (including ordinary shares total 50,000 shares and preferred shares of 48,000 shares), the Company will be entitled to dividend from operations and the rights to vote at 99.99%, which a turnover of 670 million baht, by the power plants of the Company are located at Tha Carter, Watthana Nakhon district, Srakaew Province. In order to gain power. Feed-in Tariff (FIT) 5.66 baht per unit, for a period of 5 years. (Current registered capital is 980,100 baht and the Company holding shares in the ratio of 48.98%).
- On November 29, 2016, the Extraordinary General Meeting of Shareholders No. 2/2016 passed a resolution as details:
 - Approved to Gunkul International (Mauritius) ("GIM"), a subsidiary entered into an investment in solar power plant projects in East Japan Solar 13 Godo Kaisha ("GK Iwakuni") Iwakuni City, Yamaguchi Province, Japan. Capacity of the project of 75.0 Megawatts (MW), (Size of capacity that, installed 90.0 Megawatts (MW) was awarded the concession to distribute electricity to Chungoku Electric Power for a period of 20 years at a rate of the power purchase and Feed in Tariff (FIT) Yen 32 per unit. The totally value of approximate 31,327.80 million yen or approximately 10,776.76 million baht
 - Approved to raise the issuing of debentures amount 3,000 million baht; therefore, the amount changing not more than 3,000 million baht, a new limit not over 6,000 million baht, the period within 7 years.
- Year 2017 - On April 21, 2017, the Annual General Meeting of Shareholders passed a resolution of shareholders to approve details as follows:
 - Approving the second adjustment of purchasing right for the exercise of warrant No.1 (GUNKUL-W) by adjusting an Exercise Ratio from 1 Unit: 4.8 Ordinary Share to 1 Unit: 5.6 Ordinary Share and adjusting an Exercise Price from 5.625 baht per share to 4.821 baht per share.

- Approving the capital increment for supporting the dividend payment and second adjusting right of purchasing for the exercise of warrant No.1 (GUNKUL-W) from THB 1,699,685,996.75 to be the new registered capital THB 1,982,967,060.25 at the par value of THB 0.25.
- Approving the issuance and offering of debentures in amount of 3,000,000,000 baht from the original amount not exceeding 6,000,000,000 baht, inclusive of new credit limited to 9,000,000,000 baht with age not over 7 years.
- On May 4, 2017, the Company established a subsidiary company, Gunkul Solar Power 6 Co., Ltd. ("GSP-6") in order to produce and sell electricity from renewable energy to sell to government agencies. The Company held 99.99% of the registered capital of 100,000,000 baht (Current registered capital of 100,000,000 baht and the Company holding shares in the ratio of 99.99%).
- On May 9, 2017, the Company established a subsidiary company, Gunkul Solar Power Co., Ltd. ("GSP") in order to produce and sell electricity from renewable energy to sell to government agencies. The Company held 99.99% of the registered capital of 560,999,100 baht (Current registered capital of 599,998,800 baht and the Company holding shares in the ratio of 99.99%).
- On May 30, 2017, the Company acquired 48,000 shares in BMP Solar Co., Ltd. ("BMP Solar"). The Company will be entitled to receive dividends from its operations and rights for voting in proportion to 99.99%. This power plant is located at Tha Kwian, Watthana Nakhon District, Sa Kaeo Province. The capacity is 8.0 megawatts with Feed-in-Tariff (FiT) 5.66 baht per unit for a period of 25 years. The Commercial Operation Date starts from April 29, 2016. (Current registered capital of 980,100 baht and the Company holding 48,010 shares in the ratio of 48.98%).
- On June 7, 2017, the Company signed a Memorandum of Understanding between BG Energy Solution Co., Ltd. and Gunkul Power Development Co., Ltd. to launch the Solar Rooftop project for its own use with the capacity of 4.84 MW at Ayudhya Glass Industries Limited.
- On August 16, 2017, the Company acquired 99,999 common shares in Gunkul LED Lighting Co., Ltd. from the existing shareholders or equivalent to 9.99% of the current registered capital in the amount of 4,095,000 baht. Gunkul's total shareholding in this company is 999,998 shares or equivalent to 99.99% of total ordinary shares (current registered capital is 100,000,000 baht).
(On February 21, 2018, Gunkul LED Lighting Co., Ltd. changed name into "Gunkul Energy Solutions & Lighting Co., Ltd." with a purpose to expand its business to provide integrated electrical system services)
- On August 23, 2016, the Company was employed by the Provincial Electricity Authority ("PEA") for the construction of 33 KV submarine cable to Koh Pra Thong, Phang Nga Province. The construction period is starting from the signing date of the contract 450 days.
- On September 30, 2017 is the date on which the remaining warrants to purchase the Company's ordinary shares No.1 (GUNKUL-W) have been set as listing status termination.

16. Nature of Business

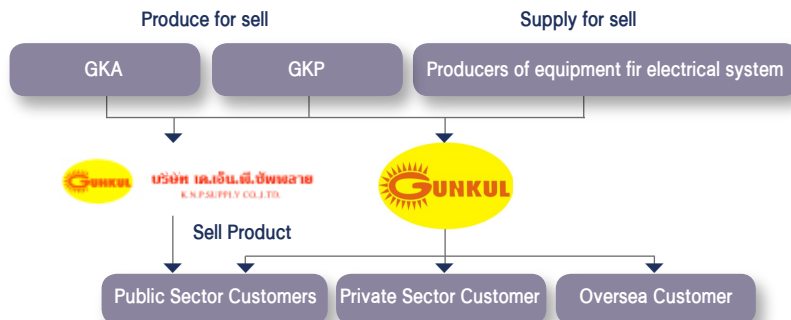
16.1 Nature of Product and Service

Details of the business operations of the Company and its subsidiaries as follows:

1. Business to produce, procure and supply equipment for electrical system in domestic and international.
2. Business to produce, procure and supply energy-saving products including appropriate alternative energy:-
 - 2.1 To product and supply lighting lamp type LED, BIPV Glass, Flexible Solar PV including appropriate alternative energy
 - 2.2 To product and supply solar cell module including supplying equipment related to the electricity production system of solar energy.
3. Business to produce and distribute electricity from renewable energy resources in local and international
 - 3.1 Solar Farm or Solar Ground
 - 3.2 Solar PV Rooftop
 - 3.3 Wind Farm
 - 3.4 Biomass Energy and Supply of raw materials for biomass power plants
4. Business to construct alternative energy power plant (Engineering Procurement and Construction)
5. Business to operation and maintenance

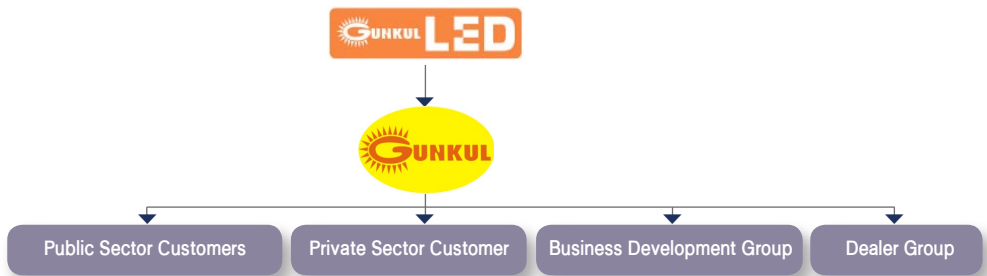
Diagram shows business conduct structure of the group of companies

- 1) Business to produce, procure and supply equipment for electrical system in domestic and international



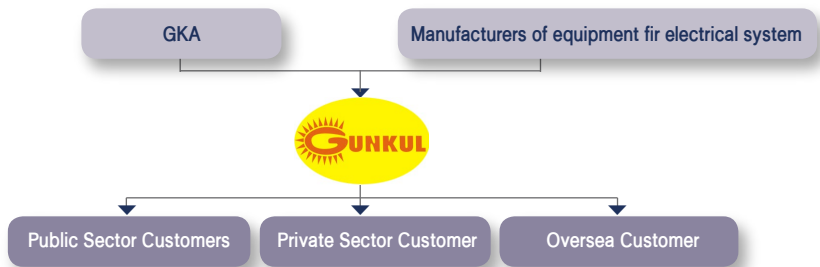
2) Business to produce, procure and supply equipment for energy-saving products including appropriate alternative energy

- To product and supply lighting lamp type LED, BIPV Glass, Flexible Solar PV including appropriate alternative energy. It is suitable for architectural or landscape improvement, electronic system renovation in the office or factory and consultation on supplying alternative energy systems to customers such as Solar Rooftop, Solar Floating, Solar Water Pump and Solar Air Conditioner system or Organic Rankine Cycle (ORC) system for Waste Heat Recovery etc.



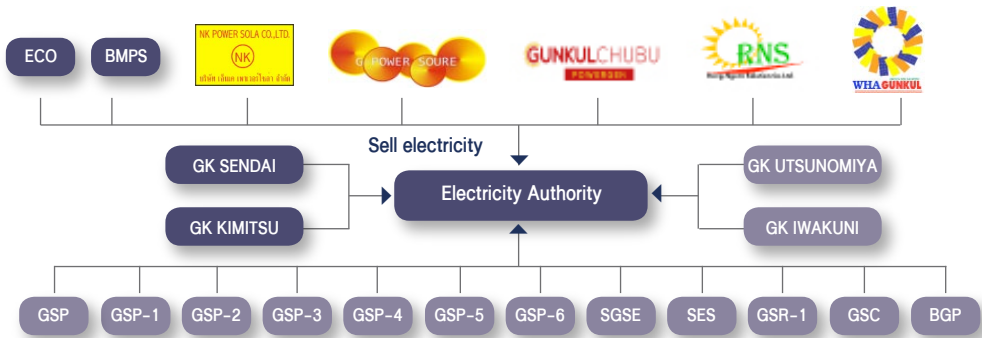
* In 2018, Gunkul Lighting LED Co., Ltd. changed its name to "Gunkul Energy Solutions and Lighting Co., Ltd." to expand its business of integrated power system services.

- To product and supply solar cell module including supplying equipment related to the electricity production system of solar energy.

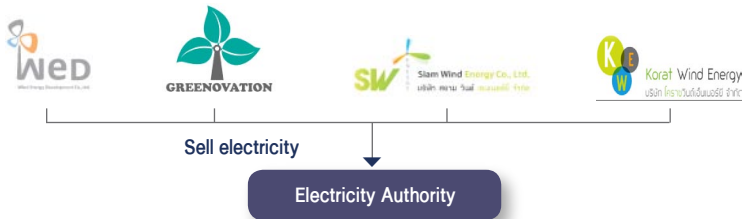


3) Business to produce and distribute electricity from renewable energy resources

- Solar Farm & Solar PV Rooftop

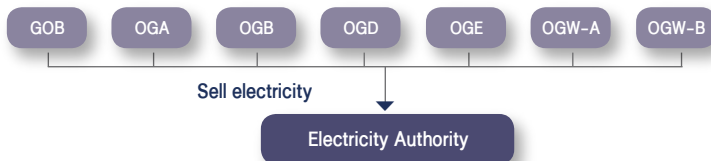


- Wind Farm

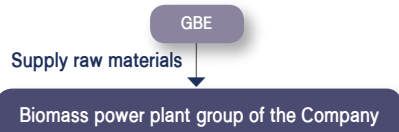


- Biomass Energy and Supply of raw materials for biomass power plants

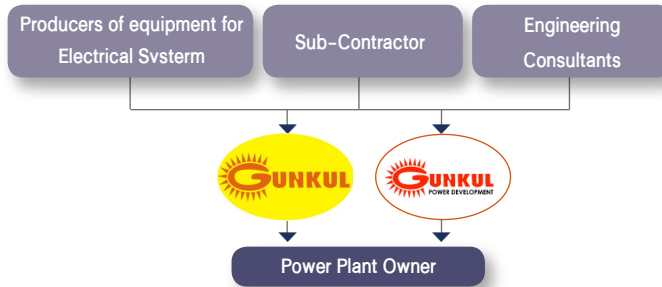
- o Biomass Power Plant



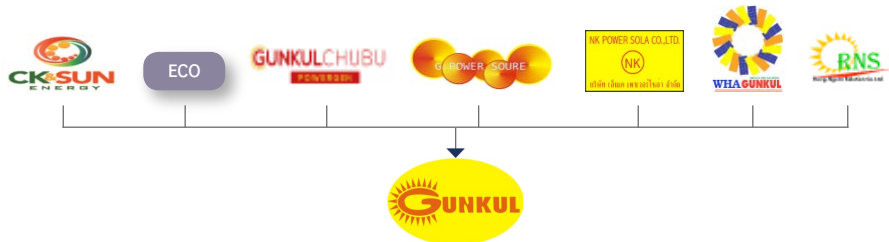
- o Supply of raw materials for biomass power plants



4) Business to construct alternative energy power plant



5) Business to operation and maintenance



1. Business to produce, supply and sell equipment for electrical system in domestic and international



Gunkul Engineering Co., Ltd Group (PCL), the leading supplier of equipment for power systems and renewable energy systems, covering in all stages of transmission and distribution of electricity from power plants to consumers with goods more than 5,000 items to meet the needs and characteristics of the different customer groups and both the household level to the macro level of government, the Group has expanded its business into the manufacture and sale of electricity from renewable energy as well. (See the diagram of the power transmission line and distribution system in the topic of Policy and business overview) All kind of goods which are produced from the subsidiaries and/or supplying by producers in Thailand and overseas who are acceptable on goods' quality and standard such as USA, Germany, Sweden, Japan, China and etc.

The company's products can be classified into five categories based on the usage as follows:

- 1) Protection and transmission system control equipment and distribution lines including power cut switch (Disconnecting Switch), load break switches, gas switches (SF6 Gas Load Break Switch), and air brake switch, transformer fuse cut-out, Surge Arrester, Live part cover and Grounding system.
- 2) Transmission and distribution lines equipment including cables (Cable), to hold the line pieces (Preformed) cable spacers (Cable Spacer), connector device (Connector), device on the cable (Cable Termination), a cable connection (Cable Splicing), electrical insulators (Insulator).
- 3) Tools and equipment including safety belts, electrical rubber gloves, industrial gloves, helmets, instrumentation and testing equipment.
- 4) Street lighting equipment, including street lamps, control switches (Photo Control Switch) and a street light control relays (Street Lighting Control Relay).

- 5) Group of equipment for the system of renewable energy, including wind turbines, solar energy equipment and solar cells, hydro turbine, generator, transformer, control equipment etc.

2. Business to produce, supply and sell equipment for energy saving including appropriate alternative energy

2.1 Produce and sell LED lighting products

Gunkul LED Lighting Co., Ltd. renamed to GUNKUL ENERGY SOLUTION & LIGHTING (GES) in 2018 in order to create a clear image and to support market expanding business. The customer base is a group of consumers who need to save energy or improve electrical system performance of the business in broader and deeper.

The customers are divided into 4 groups.

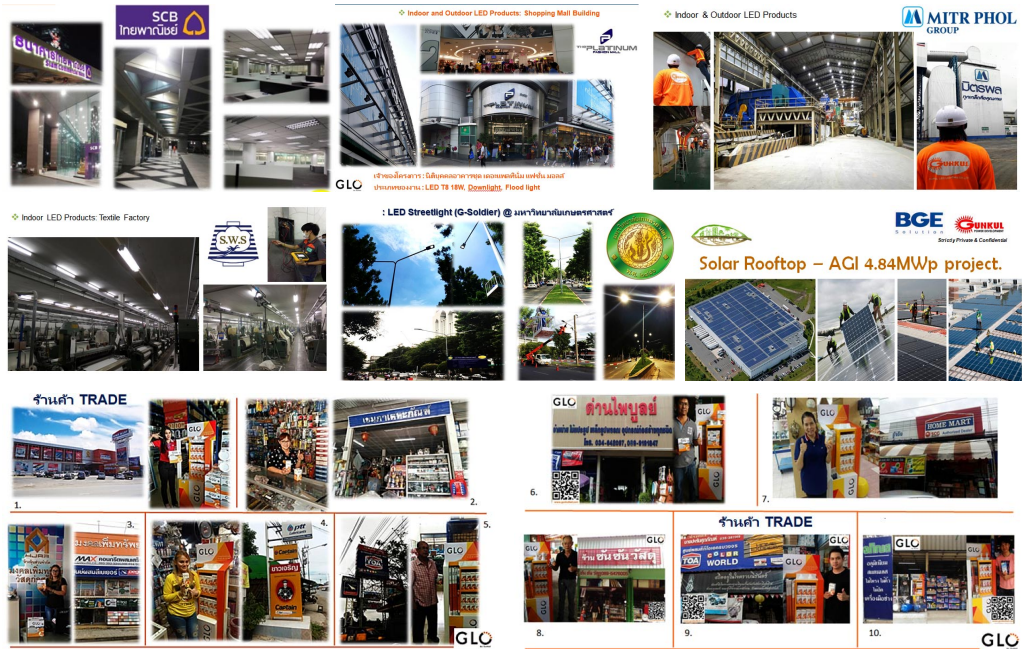
- Private Sector Customers
- Public Sector Customers
- Business Development Group
- Dealer Group or End User Level that supply Lamp and LED Lamp

Under the trademark “GLO”

The Company manufacture, supplies and distributes light bulbs and LED lamp both indoor and outdoor lighting including street lighting, flood light installation type by using solar cell power. And Batteries, BIPV Glass, Flexible Solar PV and batteries, BIPV Glass, Flexible Solar which is ideal for architectural or landscaping work, electrical system renovation in an office building or factory, consultancy on the management of alternative energy systems that suitable for customers including Engineering, Procurement and Commissioning and electric system or power plant such as, Solar Rooftop, Solar Floating, Solar Water Pump, Solar Air Conditioner or Organic Rankine Cycle (ORC) for Waste Heat Recovery etc.



With the manufacturing products that meet international standards and high quality. That is why it has been well received from project clients such as sugar mills factory group, steel production group, hospital group, bank group and warehousing service providers group including public sector customers, universities and dealer in Bangkok and provinces across the country.



The Company aims to develop and maximize its potential, increase competitiveness by focusing on serving customers with full range by focusing on energy saving with quality control by a team of experienced engineers and technicians for ensuring the customers that the Company can deliver reliable products and services with international standard and high quality to the customer.

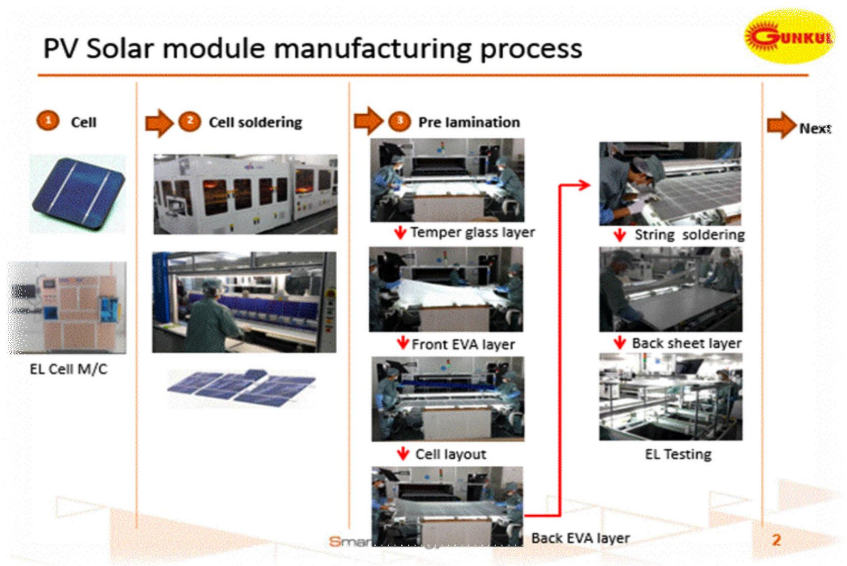
2.2. Produce and sell solar cell panels including the supply of equipment related to the solar power system

GK Assemblies Co., Ltd. and GK Power Products Co., Ltd. are the subsidiary of the Company which manufacture and sell electrical equipment related to all types of electrical systems. In 2017, these companies have enhanced its product innovation and production as detail follow;

1. Registration of factory testing department with Provincial Electricity Authority

The companies have filed for standard certification of testing room within the company to the standard control of PEA for being a part of the guideline to control the factory standard that is acceptable to customer of PEA. The company is one of only three approved manufacturers with a testing rooms certify standard for ensuring that the electricity purchased from the company will receive quality products and comply with international standards and PEA's standards.

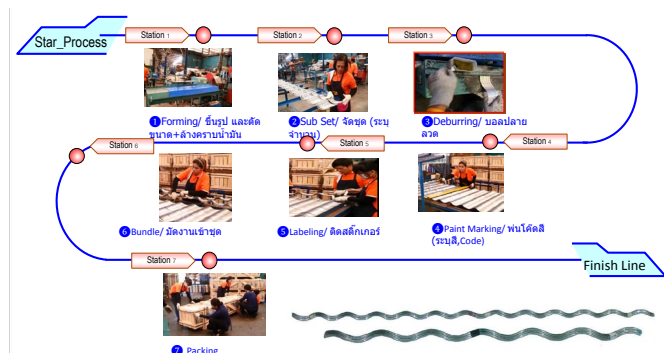
2. The Solar panel production according to TIS 1843 and TIS 2580



The company has increased the efficiency and technology of solar panel production by starting from the assembly of the factory in the production of mechanical machines with the use of advanced technology including verify the quality of the cell from the start in order to control the quality of work. It can also reduce waste during production process. The use of mechanical manufacturing technology is also consistent with the government's policy to drive Thailand towards Thailand 4.0. Moreover, the production of solar panels is also a good way to reduce the cost of solar panels in the country as well.

3. Development of Lightning Protection System (LPS)

For supporting the construction of a double track railway project and the city's rapid transit system, this type of product must have a good quality control and accepted by an international standard; IEC Standard and UL Standard. The Company has designed and controlled the production and passed the test. It is a product that the Grounding system user accept and favour to use it in order to create a public transport system for people in Thailand for having a better mobility journey.

4. Continuous improvement of production processes

In order to reduce costs in production within the Company by using the technology and machinery capital in production, it can reduce the cost more than 6 million baht and also care for employees not to be fatigue in work too. Overall, this improvement resulted in better efficiency production.



3. Business of Generating and Distributing Power from Renewable Energy Sources

3.1 Solar Farm or Solar Ground

The Group operates a business of generating and distributing power from renewable energy sources (RES) for supplying to government sector in response to the state policies to promote renewable energy power generation and consumption.

Foreseeing that the business related to renewable energy carries a good opportunity for development and investment for reasons of high growth potential, low risk as well as steady and sustainable profitability, the Group has expanded its scope of business from the supply and distribution of renewable energy equipment to the generation and distribution of RES power, Solar Farm or Solar Ground. The new business is undertaken by Gunkul Chubu Powergen Co., Ltd., G-Power Source Co., Ltd., Rang Ngern Solution Co., Ltd. and Eco Thai Energy Co., Ltd. which are subsidiary of the Company including investments in solar power projects in Japan, such as GK Sendai project, GK Kimitsu project, GK Utsunomiya project and GK Iwakuni project. In addition, the Company has a target on investment in other countries with investing potential in order to increase business opportunities and in 2018, the Company aims to invest in solar power plants in neighboring countries, which the company is investing in Malaysia and Vietnam. However, the Company is currently investing in Malaysia and Vietnam.

The Group entered the RES power generation and distribution business by investing in solar farms and applying for sale of electricity output to the Provincial Electricity Authority (PEA) under the PEA projects to purchase electricity from producers with a maximum capacity of 10 MW, very small power plants (VSPP). The Power Purchase Agreement (PPA) was signed with the PEA and adder subsidy rate for VSPP of RES production of 8 baht per kWh for a term of 10 years since the commencement of sale. From 2010 to 2014, the Group have then signed power purchase agreements (PPA) with the PEA for 10 projects with a combined capacity of 57.9 MW.

In 2015, the Company acquired shares in Rang Ngern Solution Co., Ltd., which received the power purchase agreement with the Provincial Electricity Authority in accordance with the project of purchasing electricity from solar power plant producer, Solar Farm, total amount 11 projects. The project, with a total capacity of 87 MW., in Feed-in-Tariff form (FIT) is priced at 5.66 baht per kilowatt for 25 years. In 2016, the Company also acquired shares in Eco Thai Energy Co., Ltd. which was trusted by the Samutsakhon Organic Fertilizer Cooperative Ltd., which selected as a project sponsor. It was also selected by a lottery as one of the projects that received 5 MW. power purchase agreement for 25 years in the form of a FiT fee of Baht 5.66 per unit. It also received a resolution from the Board of Directors of the Company to approve the acquisition of shares in BMP Solar Co., Ltd., which will be assigned the rights of the power purchase contract for solar power plant from BMP Energy Co., Ltd., in total 1 contract with a capacity of 8 MW. in the Feed-in Tariff form (FiT) rate of 5.66 Baht for 25 years contract. Therefore, the capacity that offered for sale to the Provincial Electricity Authority from solar power plants, Solar Farm or Solar Ground until now with the total amount 157.90 MW.

Details of the Group's solar farm projects offered to the PEA could be summarized as follows:-

Project	Capacity (MW)	Project Site (according to application)	Commencement of Output Sale
Gunkul Chubu Powergen Co., Ltd. "GCPG" (The company is a joint venture owned 51% of the share capital)			
1	3.0	Tambon Bannklui, Amphoe Chondaen, Phetchabun	January 2011
	4.4	Tambon Bannklui, Amphoe Chondaen, Phetchabun	October 2011
2	8.0	Tambon Srichula Amphoe Sichula, Nakhon Nayok	June 2013
3	8.0	Tambon Samyaek, Amphoe Wichianburi, Phetchabun	March 2013
4	4.5	Tambon Noenpor, Amphoe Sam-ngam, Phichit	March 2013
5	3.0	Tambon Subsamortod, Amphoe Buengsamphan, Phetchabun	May 2013
	30.9	The proportion of GUNKUL is 51% = 15.759 MW.	

Project	Capacity (MW)	Project Site (according to application)	Commencement of Output Sale
G-Power Source Co., Ltd. "GPS" (The company is a joint venture owned 40% of the share capital)			
6	6.5	Tambon Takeed, Amphoe Banphotphisai, Nakhon Sawan	March 2012
7	6.5	Tambon Tasang, Amphoe Banphotphisai, Nakhon Sawan	March 2012
8	6.5	Tambon Dongkorn, Amphoe Sankhaburi, Chainat	March 2012
9	6.5	Tambon Subsamortod, Amphoe Buengsamphan, Phetchabun	February 2013
	26.0	The proportion of GUNKUL is 40% = 10.4 MW.	
NK Powersola Co., Ltd. "NKP" (A subsidiary, the Company holds 99.99% of the registered capital.)			
10	1.0	Tambon Nongkum, Amphoe Bo-phloi, Kanchanaburi	November 2013
	1.0	The proportion of GUNKUL is 99.99% = 1.0 MW.	
Rang Ngern Solution Co.,Ltd. "RNS" (The company is a joint venture owned 67% of the share capital).			
11	8.0	Tambon Donsalam, Amphoe Huaykrajao, Kanchanaburi	December 2015
12	8.0	Tambon Lumrang, Amphoe Bo-phloi, Kanchanaburi	December 2015
13	8.0	Tambon Pangtru, Amphoe Tamuang, Kanchanaburi	November 2015
14	8.0	Tambon Yangnamklad, Amphoe Nongyaplong, Phetchaburi	December 2015
15	8.0	Tambon Nongchumpon, Amphoe Kaoyoi, Phetchaburi	April 2016
16	8.0	Tambon Kludluang, Amphoe Tayang, Phetchaburi	December 2015
17	8.0	Tambon Angthong, Amphoe Tubsakae, Prachuapkhirikhan	December 2015
18	8.0	Tambon Angthong, Amphoe Tubsakae, Prachuapkhirikhan	December 2015
19	8.0	Tambon Agnthong, Amphoe Tubsakae, Prachuapkhirikhan	December 2015
20	7.0	Tambon Tungkwang, Amphoe Muangpan, Lampang province	December 2015
21	8.0	Tambon Taopoon, Amphoe Song, Phrae province	April 2016
	87.0	The proportion of GUNKUL is 67% = 58.29 MW.	
BMP Solar Co., Ltd. "BMP" ⁽¹⁾ (A subsidiary, the Company holds 49.98% of the registered capital.)			
22	8.0	Tambon Takwien, Amphoe Watthana Nakhon, Srakaew	April 2016
	8.0	The proportion of GUNKUL is 49.98% = 3.918 MW.	
Eco Thai Energy Co., Ltd. "ECO" (The company is a joint venture owned 51% of the share capital).			
23	5.0	Tambon Bangkrachua, Amphoe Mueang Samut Sakhon, Samut Sakhon	December 2016
	5.0	The proportion of GUNKUL is 51% = 2.55 MW.	
Total	157.9	The total proportion of GUNKUL is = 91.917 MW.	

⁽¹⁾ The Company hold 48,000 shares in BMP Solar Co., Ltd., representing 48.98% of the paid-up capital of 98,000 shares, with the right to receive dividends from the operation and the right to vote 99.99%. Also, to hold increased ordinary shares after the company has already sold commercial electricity for 3 years. The shareholding ratio will increase from 48.98% to 99.99%. It is expected that it will enter into acquisition in April 2019.

The above projects, GCPG, GPS NK, ECO and RNS Tao Poon Project have obtained investment promotion certificates from the Board of Investment, in the form of an exemption of corporate income tax on net operating profit for 8 years since the date of sale income recorded. After the expiry date of the aforesaid corporate income tax exemption, the Company is still granted an allowance of 50% of the normal rate of corporate income tax for 5 years. The tax rates could be summarized as follows:-

Year	Tax Rate	
	Tax Exemption	Corporate Income Tax Payment
1 st - 8 th years	100%	0%
9 th - 13 th years	50%	10%
13 th year onward	0%	20%

For BMP projects and other projects of RNS, BOI has been granted a BOI privilege, in the form of an exemption of corporate income tax on net operating profit for 8 years since the date of sale income recorded. The tax rates could be summarized as follows:

Year	Tax Rate	
	Tax Exemption	Corporate Income Tax Payment
1 st - 8 th years	100%	0%
8 th year onward	0%	20%

In addition, the company also operates for the solar power plant projects in Japan which applied the electricity generating to Tohoku Electric Power Co., Inc. or Provincial Electricity Authority of Tohoku and Tokyo Electric Power Co., Inc. or Provincial Electricity Authority of Tokyo at the rate of 36.00 Yen per Kilowatt per hour (Feed-in-Tariff "FIT"), TEPCO Energy Partner or "TEPCO EP" at the rate of 36.00 Yen per Kilowatt per hour (Feed-in-Tariff "FIT") and Chugoku Electric Power Co., Inc. or "Chugoku Electric" at the rate of 32.00 Yen and 32.00 Yen per Kilowatt per hour (Feed-in-Tariff "FIT") by summarized as follows:

Project	Capacity (MW)	Project Site (according to application)	Feed-in-Tariff (FiT)	Commercial Operation Date Expectation
GK Sendai Okura Mega Solar Co., .Ltd. ("GK Sendai Okura Mega Solar") (Investment proportion 100.00%)				
1	31.75	Sendai, Miyaki	36.00 Yen per Kilowatt per hour	Q4/2018
Kimitsu Mega Solar Godo Kaisha Co., .Ltd ("Kimitsu Mega Solar Godo Kaisha") (Investment proportion 100.00%)				
2	33.50	Kimitsu, Chiba	36.00 Yen per Kilowatt per hour	Q4/2018
GK Solar Utsunomiya Co., .Ltd ("GK Solar Utsunomiya Godo Kaisha") (Investment proportion 100.00%)				
3	66.78	Utsunomiya, Toshiki	36.00 Yen per Kilowatt per hour	Q1/2022
East Japan Solar 13 Co., .Ltd ("Godo Kaisha East Japan Solar 13") (Investment proportion 100.00%)				
4	75.00	Iwakuni, Yamakuji	32.00 Yen per Kilowatt per hour	Q1/2022
Total	207.03			

3.2 Solar PV Rooftop to sell electricity to the system

At the meeting on 13 August 2013, the cabinet acknowledged the National Energy Policy Council's resolution dated 16 July 2013 approving the program on power purchase from rooftop PV system at a quantity generated at the overall installed capacity of photovoltaic panels of 200 MWp, 100 MWp of which for resident-type buildings and another 100 MWp for industrial and factory buildings. The commercial sale to the power network connection system is scheduled to commence within 2013, under a Feed-in Tariff allowance for a term of 25 years.

Joining the program, Gunkul Engineering PCL has invested in projects in various provinces across the country. Gunkul Power Development Co., Ltd. was then established to support the construction of solar PV rooftop. Details of investments and projects by area of state responsibility are as follows:-

Solar PV Rooftop Projects with the Provincial Electricity Authority

No.	Applicant	Installed Capacity (kWp)	Type of Business
1	Gunkul Solar Power 2 Co., Ltd.	538.56	99.99% owned by the Company
2	WHA Gunkul Green Solar Roof 17 Co., Ltd.	997.56	25.01% owned by the Company
3	Green Line Energy Co., Ltd.	997.56	Power plant construction
Total		2,533.68	

Solar PV Rooftop Projects with the Metropolitan Electricity Authority

No.	Applicant	Installed Capacity (kWp)	Type of Business
4	WHA Gunkul Green Solar Roof 1 Co., Ltd.	636.48	25.01% owned by the Company
5	WHA Gunkul Green Solar Roof 3 Co., Ltd.	832.32	25.01% owned by the Company
6	WHA Gunkul Green Solar Roof 6 Co., Ltd.	832.32	25.01% owned by the Company
7	Solar Energy Society Co., Ltd. (Phranakhon Nuea 1)	499.20	99.99% owned by the Company
8	Siam Gunkul Solar Energy Co., Ltd. (Donmueang)	873.60	99.99% owned by the Company
9	T S Power Energy Co., Ltd.	416.16	Power plant construction
10	T S Power Energy Co., Ltd.	997.56	Power plant construction
11	Gunkul Solar Roof 1 Co., Ltd.	241.92	99.99% owned by the Company
12	Gunkul Solar Roof 1 Co., Ltd.	22.40	99.99% owned by the Company
13	Mon RM Co., Ltd.	948.48	Power plant construction
Total		6,300.44	

3.3 Solar PV Rooftop for Self Consumption

In 2017, BOI has issued the Announcement of the Board of Investment No. 9/2017 on Investment Promotion Measures to improve production efficiency. The purpose is to change the machinery for energy saving and alternative energy use in order to reduce the impact on the environment. The promoted person is exempted from corporate income tax for a period of 3 years accounting for 50% of the investment including duty exemption for machinery. As a result, the industrial sector has become more active and enrolled in this project. Moreover, commercial building and other business groups with mass usage of electricity without support, also interested in installing solar panels as well by producing the renewable energy to use for self-employment within organizations or self-organizations. The Company is aware of the investment direction in the business group with a lot of potential and is not obliged to have a power purchase agreement with government agencies. It has decided to penetrate the solar installation business on the roof of the factory including commercial buildings, residential group, organizations and government agencies and other business groups that need to use large quantities of electricity. In addition, some customers have utilized land which they can use the land to make electricity projects on the ground for their own use within the organization as well. Currently, the Company has been trusted by many customers by selecting the Company as a project operator. The project has been completed and also has projects under construction with a detail as follows:

Solar PV Rooftop and Grounding for Self Consumption

Number	Participating Business Groups	Capacity (kWp)	Type of business	COD
1	Robinson Department Store, Phetchaburi Branch	999.58	Electricity Sale	June 2017
2	The factory building of Ayutthaya Glass Industry	4,840.00	Power Plant Construction	March 2017
3	Tesco Lotus Department Store, Phayakkhaphum Phisai, Mahasarakham	409.60	Power Plant Construction	July 2017
4	Central Department Store, Chiang Rai Branch	948.29	Power Plant Construction	May 2018
5	Central Department Store, Phitsanulok Branch	907.06	Power Plant Construction	March 2018
6	Surintomya chemicals (Thailand) Co., Ltd.	999.60	Power Plant Construction	December 2018
Total		8,104.53		



Tesco Lotus Department Store, Mahasarakham



Robinson Department Store, Phetchaburi

3.4 Solar Floating

The Company has studied the possibility of installing solar panels on the water in order to produce electricity and connect with the transmission line system to be used. There are many technologies that can bring solar panels and power systems to float on the water without impact on the electricity generation system. The suitable water sources should be reservoirs, dams or general reservoirs without waves or only little waves including can also maintain a water level without sudden change or rapid change. The benefits of electricity generation on water can also help reduce evaporation. It is suitable for storage ponds that require water for all year round and the evaporation of water also lowers the temperature under the solar panel which brings about the efficiency of solar power generating. This is a benefit to use the land over water resources and reduce the use of land can be developed in another way.

At present, the Company has implemented 1 Solar Floating power plant project with a capacity of 256 kilowatts.

Solar Floating Project

Number	Participating Business Groups	Capacity (kWp)	Type of business
1	Electricity Generating Authority, Sirindhorn Dam	256.00	Power Plant Construction
Total		256.00	



Image of a solar floating power plant project at Sirindhorn dam with a size of 256kw



3.5 Wind Farm

Although Thailand near the equator make to wind speeds average level low to moderate but since it is a natural source of energy, no energy cost. Thailand is continuing to focus on the development of wind energy by exploring the potential for wind energy sources. The research and development of wind speed to suit the wind potential of the country and promote the use of high efficiency wind turbine in either Domestic or overseas. The renewable energy plan for 20 years targeted supporting wind energy amount 3,002 MW in Year 2036



Recognizing the government policy to strengthen the national energy security alongside the green growth strategy, the Company sees itself as being a supportive part in the development of alternative energy power generation and thus contributing to Thailand's electricity security. It is therefore committed to develop wind-based power generation projects. Details of the wind farm projects and supply of power output applied for sale to the Provincial Electricity Authority (PEA) and the Metropolitan Electricity (MEA) could be summarized as follows:

Project	Capacity (MW)	Project Site (according to application)	Scheduled Date of Commercial Sale under the PPA
Wind Energy Development Co., Ltd. "WED" (A subsidiary of the Company holds 99.99% of the share capital)			
1	2.0	Tambon Huabong, Amphoe Dankhunthot Nakhon Ratchasima	March 2016
	8.0	Tambon Huabong, Amphoe Dankhunthot Nakhon Ratchasima	March 2016
2	50.0	Tambon Huabong, Amphoe Dankhunthot Nakhon Ratchasima	December 2016
	60.0		
Greenovation Power Co., Ltd. "GNP" (A subsidiary of the Company holds 99.99% of the share capital)			
3	60.0	Tambon Huabong, Amphoe Dankhunthot Nakhon Ratchasima	March 2018
	60.0		
Korat Wind Energy Co. Ltd. "KWE" (A subsidiary of the Company holds 99.99% of the share capital).			
4	50.0	Tambon Nongnamsai, Amphoe Sikhio Ratchasima province	May 2018
	50.0		
Total	170.0		

The above projects have obtained investment promotion certificates from the Board of Investment, in the form of an exemption of corporate income tax on net operating profit for 8 years since the date of sale income recorded. After the expiry date of the aforesaid corporate income tax exemption, the Company is still granted an allowance of 50% of the normal rate of corporate income tax for 5 years. The tax rates could be summarized as follows:-

Year	Tax Rate	Remaining Tax Payment
	Tax Exemption	
1 st - 8 th years	100%	0%
9 th - 13 th years	50%	10%
13 th year onward	0%	20%

3.4 Biomass power plant including the supply of raw materials for biomass power plants

Thailand is an important agricultural country in the world. The majority of the country is an agricultural population with an agricultural diversity. They also have the right climate including fertility of the land. For example, the central part of the country has farming more than 50% of the total area etc. The by-product of agriculture is an unused material, so the return of the agricultural materials to bring benefits and generate income for farmers. They can be used as fuel in biomass power plants. In addition, the government now has a policy to increase green space for the country by 20%, so it is planned to promote economic afforestation. The Company also sees the business of biomass power plants. This requires a reliable supply of raw materials throughout the life of the project, thus promoting the rapid growing of trees for fuel in biomass power plants, which will be in the form of encouraging farmers to cultivate and harvest for selling to the Company. This can generate income for farmers to earn more stable. It also adds another green space according to government policy.

The Company has signed a memorandum of cooperation with the Faculty of Forestry, Kasetsart University to study the feasibility of sustainable tree planting in low fertility soils. In order to develop low fertility land that can't grow crops. To turn to grow fast growing trees instead that has the ability to grow in the soil with low fertility. Including fast growing trees also have the qualities to improve soil fertility.

The target of purchasing electricity from the biomass power plant project under the PDP2015 plan (2015-2022) with electricity demand from biomass power plants is about 570 MW. However, now there are 2,690 MW. of installed and operated biomass power plants which sells only 1,515 MW. of installed power. Therefore, the Company can see the business opportunity that can be continued for the Company.

4. Power Plant Construction Business



The government policy to promote power generation from alternative energy together with the Company's capabilities in the production of alternative energy power, the distribution of products related to power plant operations and the engineering services provide the Company a firm step into the business of constructing alternative energy power plants.

Due to active promotion of alternative energy utilization by government agencies in effort to reduce global warming, the Group views that businesses related to alternative energy are of great potential for development and investment. Furthermore, generation of power based on alternative energy, though being a fresh idea, has shown a promising start and strong growth in the future. The Company has provided construction services for power plant projects of its affiliates, subsidiaries and other companies as follows:-

Project Owner	No. of Projects	Size (MW)	Status
1) G-Power Source Co., Ltd.	4	26.0	Completed
2) Gunkul Chubu Powergen Co., Ltd.	5	30.9	Completed
3) NK Powersola Co., Ltd.	1	1.0	Completed
4) C.K. and Son Energy (Thailand) Co., Ltd.	1	8.0	Completed
5) Solarta Co., Ltd.	1	8.0	Completed
6) Bangchak Solar Energy (Nakhon Ratchasima) Co., Ltd.	1	12.5	Completed
7) Bangchak Solar Energy (Chaiyaphum 1) Co., Ltd.	1	12.5	Completed
8) Solar PV Rooftop Power Plant Project to sell electricity	13	8.8	Completed
9) Wind Energy Development Co., Ltd.	3	60	Completed
10) Eco Thai Energy Co., Ltd.	1	5.0	Completed
11) BMP Solar Co., Ltd.	1	8.0	Completed
12) Greenovation Power Co., Ltd.	1	60	Under Construction
13) Korat Wind Energy Co. Ltd.	1	50	Under Construction
14) Solar PV Rooftop Power Plant for Self Consumption Projects	5	8.1	Completed
15) Solar PV Rooftop Power Plant for Self Consumption Project	1	0.99	Completed
16) Solar Floating Power Plant Project	1	0.256	Completed
Total		300.0	

5. Power Plant Maintenance Services

The Company has earned the trust of its business alliance as well as other operators to be the provider of post-construction maintenance services for their solar farms. The services under operation and maintenance agreements with these clients include controlling and monitoring the efficiency of operations and sale of the solar farms. At present, the Company renders maintenance services for 14 companies 34 power plant projects of a total capacity of 163.37 MW, as follows:-

Solar Farm

	Project Owner	Capacity (MW)
1.	C.K. and Son Energy (Thailand) Co., Ltd.	8.0
2.	G-Power Source Co., Ltd.	26.0
3.	Gunkul Chubu Powergen Co., Ltd.	30.9
4.	NK Powersola Co., Ltd.	1.0
5.	Rang Ngern Solution Co.,Ltd.	87.0
6.	Eco Thai Energy Co., Ltd.	5.0
7.	BMP Solar Co., Ltd.	8.0
	Total	165.9

Solar PV Rooftop

	Project Owner	Capacity (MW)
1.	WHA Gunkul Green Solar Roof 1 Co., Ltd.	636.48
2.	WHA Gunkul Green Solar Roof 3 Co., Ltd.	832.32
3.	WHA Gunkul Green Solar Roof 6 Co., Ltd.	832.32
4.	WHA Gunkul Green Solar Roof 17 Co., Ltd.	997.56
5.	Gunkul Solar Power 2 Co., Ltd.	538.56
6.	Solar Energy Society Co., Ltd. (CPAC Roof)	499.20
7.	Siam Gunkul Solar Energy Co., Ltd.	873.60
8.	Gunkul Solar Roof 1 Co., Ltd.	241.92
9.	Gunkul Solar Roof 1 Co., Ltd.	22.40
10.	Solar Energy Society Co., Ltd. (Robinson Phetchaburi)	999.58
11.	Prosper Engineering Co., Ltd. (TESCO LOTUS Maha Sarakham)	409.60
	Total	6,883.54

16.2 The Company's revenue structure is divided into business structure

The company's customers are divided into 3 groups: Public Sector Clients. The Private Clients and Internationally Clients, each group has a structure as follows;

Type of income	2015		2016		2017	
	Million baht	%	Million baht	%	Million baht	%
1. Income from production, supply and distribution of equipment for the power systems and renewable energy						
1.1 Supplying for distribution	3,346.59	75.03	791.97	24.68	521.74	10.94
1.2 Production for distribution	425.67	9.54	559.42	17.43	679.30	14.25
2. Income from production and distribution of electricity from renewable energy						
– Manufacture and sale of electricity from solar energy	51.16	1.15	867.93	27.05	1,535.56	32.21
3. Income from construction of renewable energy plants	566.76	12.71	909.5	28.34	1,962.58	41.17
4. Income from operation and maintenance	70.12	1.57	80.07	2.50	68.09	1.43
Total revenue	4,460.30	100.00	3,208.89	100.00	4,767.27	100.00

The revenue of the company by customers

Income	2015		2016		2017	
	Million baht	%	Million baht	%	Million baht	%
1. Public Sector Clients						
1.1 Revenue from distribution equipment of electrical system and renewable energy system	259.09	5.81	504.89	15.73	304.19	6.38
1.2 Revenue from electricity sales	51.16	1.15	867.93	27.05	1,533.22	32.16
2. The Private Clients						
2.1 Revenue from distribution equipment of electricity system and renewable energy system	3,554.09	79.68	894.33	27.87	930.13	19.51
2.2 Revenue from the power plant	566.76	12.71	909.5	28.34	1,962.58	41.17
3. Internationally Clients	29.20	0.65	32.24	1.01	37.15	0.78
Total revenue	4,460.30	100	3,208.89	100.00	4,767.27	100.00

16.3 Industry overview and competition

In 2016, Thailand economy expanded mainly due to the stimulation of government policies such as tax breaks from domestic tourism, tax deductions on consumer purchases, etc., as well as BOI investment promotion policies that, encourage foreign investment in the country. In addition, policies to accelerate government disbursements and extra spending additional of the budget such as, in government infrastructure, Water Management Project, Rail Transport Development Project and the Land Transport System Development Project. Expected a public spending and government investment will be increased. In addition, the government has announced the Thailand 4.0, a model of economic development. The purpose is to drive and reform the country to the same direction. This will lead to a value-based economy or innovation-driven economy. Based on the idea of production "commodities" into innovative products and switching from industrial propulsion to mobile technology, creativity and innovation of Thailand. Also, stimulate private spending and private consumption is expected to recover from the previous year.

For 2017, more infrastructure investment was made from the public sector. The budget of over a billion baht is the construction of the multiple railway lines, motorway construction, connecting to the industrial areas with transportation routes. This will cause the distribution of progress along those paths. There are industrial plants located at the critical points appropriate to the transportation strategy. As a result, the country needs more electricity. The net peak of demand for electricity in the system of Electricity Generating Authority of Thailand (Net Peak Generation Requirement) in 2017 at 30,300 Megawatts (MW) which was higher than last year's high net power demand. As a result, the government must set policies and plan to supply enough energy sources for the country's economic growth. The imbalance of natural gas use in power generation is as high as 70% and the policy to promote the construction of coal power plants in the southern region in order to meet the demand for electricity at the peak demand level. With the environmental factors of the population in the area, the construction was delayed. It focuses on the construction of power transmission system and power station. To carry the electricity from excess supply sources such as in the Northeast to distribute in the South. In the policy of promoting tourism and improving the scenery of large tourist cities in the four provinces, the policy framework for the Provincial Electricity Authority is responsible for the development of a power transmission system. In 2017 and 2019, the budget for the construction of power transmission lines and power substations to support government policies was in excess of Baht 30,000 million, which affected the situation and competition in the high voltage equipment market, construction of high-voltage transmission lines and power stations. Therefore, the demand for budget is higher than the number of competitors in the supply side. It is considered that in the period of 2017 – 2019, the business sector has benefited if compared with the past.

In 2017, the industrial and competition in renewable energy from the policy of limiting the number of solar power plants. Due to the oil prices dropped from \$110 per barrel to \$50-60 per barrel. As a result, the price of natural gas, which is the main cost of electricity generation in Thailand, is about 70%. Need to accelerate or promote the use of renewable energy in last year. However, the PDP 2017-2030 plan of the Ministry of Energy is still focused on promoting the use of alternative energy in all proportions at 25% of electricity generation for Thailand. However, under the reliance on obtaining a lower PPA from the above causes. It has been found that the cost of installing solar power plants on roofs and on the ground is lower than the cost of electricity produced per unit compared to the purchase of electricity from the Provincial Electricity Authority and the Metropolitan Electricity Authority at an economical level. If it is installed for self-consumption decrease or save up to 12-15%. This has resulted in more demand from the private sector, which aims to improve the energy consumption of the business by focusing on providing various types of services.

1. The Company is the investor, installs and acts as a distributor of electricity produced by the solar roof installation of the customer. The discount rate for electricity distribution and the payback period of the project target to transfer of such assets to customers at the end of the project.
2. The company is the contractor to install electricity from solar panels installed on the roof. The customer is responsible for all of this investment.

From the above case, the demand for solar roof installation has been increasing since 2017, and if the customer requests to invest all of them, 5 - 6 competitors will be listed. The company as a manufacturer and distributor of solar systems. It also provides integrated, cost-effective installation and maintenance services. As a result, the Company is highly competitive with its competitors in the same market. For the same reason, if the customer requests to invest in the construction and distribution of discount electricity. The company will consider the appropriateness of the risk of compliance with the power purchase agreement. The impact of the industry on customers is considered to be a long-term source of funding.

For the Industrial and competition of the renewable energy industry in 2017, The Company is interested to invest in Japan, Malaysia, etc.

Japan

The company plans to invest in a 200 MW (4 plants of solar-power plant in 2017. The company has been signed contract at 36 yen for 3 projects and 32 yen for 1 project. In the past few years, the price of electricity purchased in the power purchase agreement in Japan decreased at the price of 24 yen, but the cost of construction of the power plant has declined in a smaller proportion. As a result, the rate of return on equity (EIRR) decreased. The investment in the construction of power plants in Japan is improved. The companies expect to sell electricity at a lower rate and distribute 2 projects in 2018 with a total of 80 MW.

The results of a large solar power plant construction in Japan take 2 – 3 years. It may affect return on assets at discounted rates. This may have a negative impact on the return on assets, due to the investment in the shareholders' equity required to complete the project and take more than 2 years to await the commercial operation. The company has set up a commercial electricity distribution frame. The company has set a policy of investment in Japan by accelerating the construction and focus on investing in new projects that have already sold commercial electricity. To reduce the impact of time frame and gain more positive investment assets.

Malaysia

In 2017, Malaysia has promoted the policy to use of renewable energy, especially the type of solar power plant. Previously, Malaysia has supported by create a Power Purchase Agreement (PPA) of lower than 5 MW. There is an investor of power plants in Malaysia around 100 MW. However, the Malaysian government recognizes the potential of the country and the cost of construction of power plants dropping dramatically. The cost of solar energy per unit is reduced to a competitive level compared to other types of electricity. As a result, the Malaysian government aims to promote more electricity from solar power by increasing the size of the power plant and the number permission to apply for a power purchase agreement.

The company has joined with local partners in the development countries. By submitting the Power Purchase Agreement at 30 MW in Terengganu, Malaysia. The completion and approval of the Board of Directors' meeting on February 21, 2018 is the first step for Gunkul Engineering Public Company Limited to invest in the solar power plant project. According to the information provided to all shareholders.

Source: www.bot.or.th, www.eppo.go.th, www.egat.com, <http://www.drborworn.com/>

16.3.1 Industry conditions

• **Overview of the Electricity System in Thailand**

The industry of electrical power and system production in Thailand can be divided into 3 main groups, details as follows;

1) Power producers

Manufacturers of electrical systems in Thailand can be divided into 6 groups, i.e. the Electricity Generating Authority of Thailand, major independent power producers (IPP), small power producers (SPP), very small power producers (VSPP), other producers including government agencies such as the Department of Energy and Energy Conservation that produce electrical power from small hydropower dams and the import of power from Internationally.

The Electricity Generating Authority of Thailand ("EGAT") serves as the country's largest power producer, the largest purchaser of electrical power produced by other manufacturers, as well as the importer of electricity from neighbouring countries, namely Laos and Malaysia. EGAT determines the amount of power, each power plant has to supply to national transmission system to meet the electricity demand in each period.

2) Power suppliers

The Electricity Generating Authority of Thailand is the supplier of electrical power to 2 state enterprises, i.e. the Metropolitan Electricity Authority ("MEA") and the Provincial Electricity Authority ("PEA") that are responsible for distribution of electricity to industrial sector, business sector and household sector around the country. EGAT supplies electrical power directly to some customers as well.

In electricity transmission from power plants to MEA and PEA requires, the voltage must be regulated to reduce any power loss during long-distance transmission of electricity. Then MEA and PEA transmit electricity to users through the voltage transmission system in Bangkok, Nonthaburi and Samutprakan.

For PEA is responsible for electricity transmission to areas other, except the 3 provinces on above. In electricity transmission to end users, the voltage must be reduced to level suitable for using.

3) Consumers

Consumers consist of industrial sector, business sector and residential users, etc.

The electrical systems associated with the Group's private sector clients, generally diversified various in the construction of high power, public transport and the electrical power industry. However, when considering only large projects from an overview of the private sector. That will be seen that, large private sector investment projects are involved or supported by the public sector. Especially in relation to investment in public utilities, the government initiated the investment. The government plans to stimulate the economy. The emphasis is on investment in public infrastructure such as investment in mass transit systems.

By the electric train project. Both Metro and Underground. With a total investment of over 800,000 million baht within 20 years, has resulted in the private sector. Related to such investments. More investment for the group. These investment projects look at the opportunity to distribute electrical equipment related to the transmission of electricity to rail systems such as lightning protection devices. Cable Termination Device and wiring harness, grounding equipment. Also other equipment that, related to the transmission of electricity to the electric rail system of the project.

- Overview of the Electricity Industry in the Republic of the Union of Myanmar

Electricity demand of the Republic of the Union of Myanmar (Myanmar) is increasing. Currently, Myanmar has a total capacity of approximately 5,390 megawatts, comprising 3,255 megawatts of electricity, 120 megawatts of coal, 1,920 megawatts of power, and 95 megawatts of diesel.

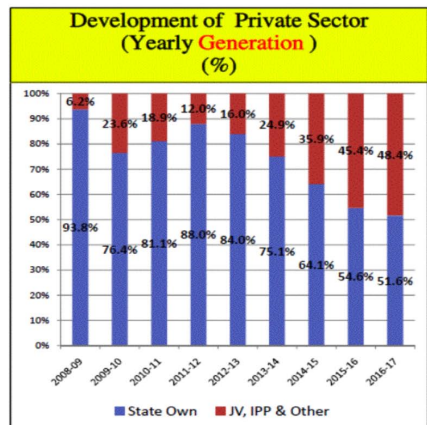
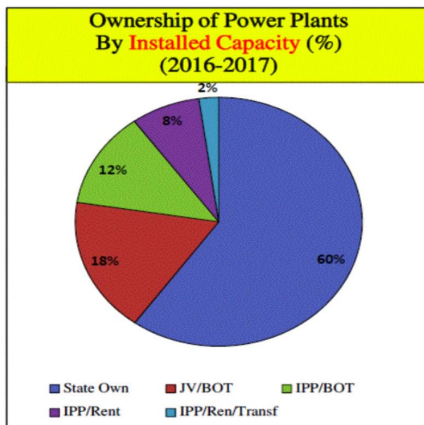
Installed Capacity of Power Plants (2016-2017)					
Type of Plant	Coal	Hydro	Gas	Diesel	Total
Capacity (MW)	120	3,255.18	1,919.9	94.30	5389.37
Energy Mix by Capacity	2.23 %	60.4 %	35.6 %	1.75 %	100%

Power Generation (2016-2017)					
Type of Plant	Coal	Hydro	Gas	Diesel	Total
Generation (GWh)	9.59	9,743.85	8,052.43	61.12	17,866.99
Energy Mix by Generation	0.05 %	54.54 %	45.07 %	0.34 %	100 %

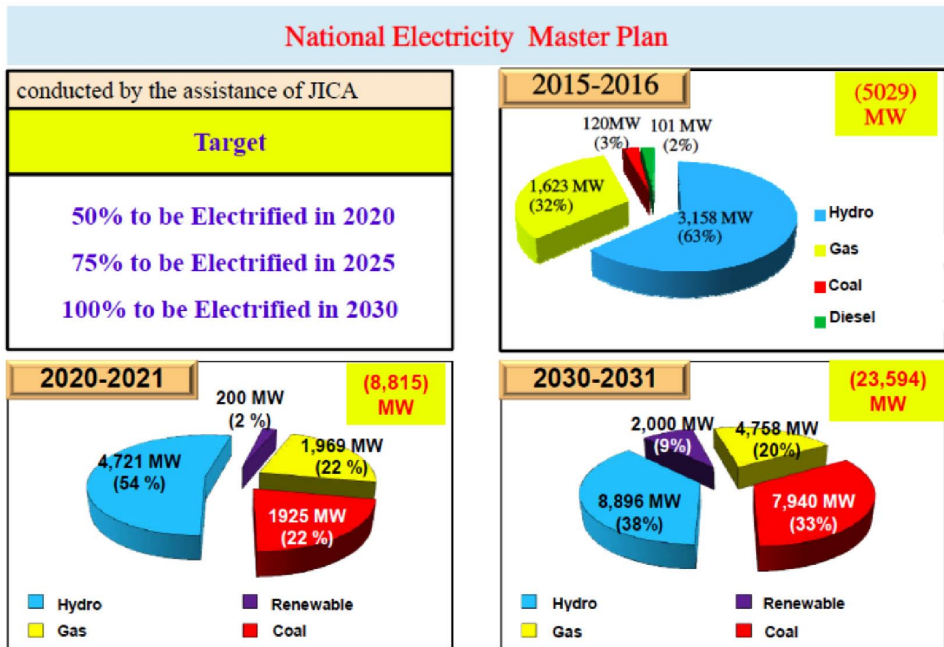
Transmission Lines and Substations (2016-2017)				
Voltage (kV)	Transmission Line		Substation	
	Nos. of Line	Line Length (mile)	Nos.	MVA
230	63	2,777.860	37	5,120.00
132	41	1,361.648	23	1,592.50
66	117	2,923.514	217	3,595.55
Total	221	7,063.022	277	10,308.05

Source : <http://www.myanmarinvestmentforum2017.com>

The case of incremental is the policy of the Ministry of Electricity and Energy to encourage private and foreign investors to invest in power plants. At present, 48 percent of the electricity produced in Myanmar comes from private power plants.



The Myanmar's government is not only interested in the development of thermal power plants and hydro power plants, but also interested in the development of solar and winds power plants. In 2030, the government purpose to have wind power and solar power with a capacity of 9% of the total capacity of 23,594 Megawatts (MW).



Source : <http://www.myanmarinvestmentforum2017.com>

Gas power plant

Gunkul Engineering Public Company Limited, has entered into a gas-fired power plant project 25 Megawatts (MW) in the Republic of Myanmar since 2013, with the investment from local partners. Gunkul held 51% of the shares of the power plant at Hlawga District, Yangon City. That is long distance from Yangon International Airport around 20 Km.

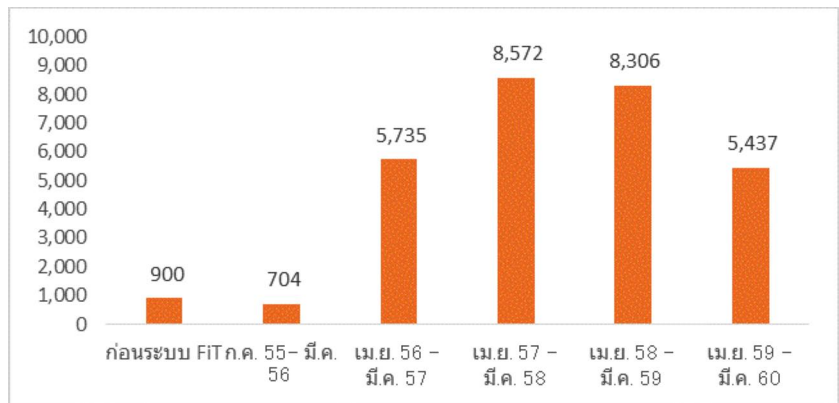
The Gas-fired power plant. There is a power purchase agreement with Ministry of Electricity and Energy of Myanmar. This is a power purchase type "Take or Pay" Duration 30 years. Currently, Gunkul is in the process of requesting the Myanmar Investment Committee (MIC) to transfer the power purchase agreement and other related contracts to the joint venture. Gunkul has been granted the privilege of becoming a foreign company investing in Myanmar.

- **Overview of the electrical system of Japan**

Currently, Japan has measures to save energy from all sectors. As a result, electricity consumption in Japan has been continuously decreasing from 2010 to 2015. The Japanese government expects a steady demand for electricity in the future. In 2030, the demand will increase to 980,800 million kWh per hour. This represents an increase of 2,572 million kWh per hour in 2026 or an average increase of only 0.02% per year.

After the damage to the Fukushima nuclear power plant. The government is turning to more power generation from renewable energy. The goal is to provide electricity generated from renewable energy at 22-24 percent. Produced by solar energy 7% or 68,656 million kWh per hour. To increase the number of power plant operators from renewable energy. The Japanese government has adopted purchase of Feed in Tariff ("FiT") Using to replace the Renewables Portfolio Standard ("RPS") system, resulting in a production increase from 900 Megawatts (MW) before the policy announcement 28,753 Megawatts (MW), 32 times within a period of 4 years and 9 months.

Chart 1 Capacity



Source : Report on Alternative Energy Trends by Department of Fuels, September 2017

Although the demand for electricity in Japan will not much grow. But the government aims to increase the share of renewable energy production at an increased rate. That is also seen that the overall renewable energy market is still in a state of an expansion.

Electricity Generating Industry Trends and electrical systems in Japan

Although Japan's demand for electricity is likely to remain stable. But the government continues to support the plant by setting a target for renewable sources of energy in the future. That also has the opportunity to invest in renewable energy power plants. Solar power plants and other types of alternative power plants.

However, as the number of licensed and unlicensed power plants exceeds more 50,294 Megawatts (MW) on March 2017 which decreased from 60,845 Megawatts (MW) on May 2015. In addition, the amount of commercial power plants that will be sold between April 2016 – March 2017 decreased by 2,869 MW from commercial power plants during April 2015 – March, 2016 at 8,306 megawatts, with a decrease in the price of electricity. As shown in Table 1 below, the company forecasts that future solar power generation will be more challenging.

Table 1 Purchase Price for Licensed Power Plant in each fiscal year.

FIT (JPY/kWh)	FY12	FY13	FY14	FY15	FY16	FY17
Solar Energy (Bigger 10 KW)	40	36	32	28	24	21

However, the company still sees an opportunity to invest in Japan. Because the company specializes in a business environment. The company will begin to consider alternative investments in renewable energy. In particular, the type of energy that the permitted production volume does not meet the government's stated goals such as, Biomass energy. In this investment, the Company will be consider from government policy.

Source: Reference document by the Ministry of Economy, Trade and Industry.

- **Outlook for power generation industry and electrical system in Thailand**

Ministry of Energy together with Electricity Generating Authority of Thailand (EGAT) jointly prepared the Thailand Power Development Plan for 2015 – 2036 (PDP2015, Revision 3) as a major plan in developing the power generation in Thailand. To be more consistent with current situation. That plan, the Energy Regulatory Commission (NESDB) has reviewed and commented on May 6th, 2015 before proposing to the National Energy Policy Council to approve the meeting No. 2/2015 on May 14th, 2015 and the Cabinet (Cabinet) approved the resolution of the NEPC on June 30th, 2015.

PDP2015 plan, must be aligned with the national economic development direction. Developed and estimated by the Office of the National Economic and Social Development Board

(NESDB), the long-term economic growth is projected at 3.94 percent per year. And in terms of integration with the relevant energy plan. Expected results of optimization under the energy conservation plan. This will result in a reduction in electricity use of approximately 89,672 million units (GWh) in 2036. There are also plans to develop renewable energy and alternative energy. Focus on the development of the renewable energy to full potential in each area. It will promote the generation of electricity from waste fuel, biomass and biogas. Also including the other renewable energies such as solar wind, solar power transmission systems, and power distribution systems of the 3 power plants. To support the promotion of alternative energy on a local basis. As well as developing on Smart Grid system to improve production efficiency. Electricity from renewable energy based on this policy, the PDP2015 Plan for Fuel Consumption is set out in 2036 as follows:

Fuel types	2014 Percent	2026 Percent	2036 Percent
Buy hydroelectric power internationally	7	10-15	15-20
Clean technology coal (including lignite)	20	20-25	20-25
Renewable energy (including hydropower)	8	10-20	15-20
Natural Gas	64	45-50	30-40
Nuclear	-	-	0-5
Diesel / fuel oil	1	-	-

Source : Office of Energy Policy and Planning Ministry of Energy

The NESDB forecasts that, the GDP growth rate for the years 2014 - 2036 will average 3.94 percent per year. Each 0.03 per year and the application of the Energy Conservation Plan (EEDP). The target is to reduce the use of electricity in 2036 at 89,672 million units, and consider the framework of the Renewable Energy and Alternative Energy Development Plan (AEDP) for the power sector in 2036, which will generate electricity from 19,634.4 Megawatts (MW) of renewable energy Electricity Demand Forecast Used for PDP2015 Plans. When combining the results of the Energy Conservation Plan and the Renewable Energy and Alternative Energy Development Plan for the period of 2014 to 2036, 2.67 percent per annum. In 2036, the country's total net energy demand and peak electricity demand were estimated at 326,119 million units and 49,655 Megawatts (MW) as respectively.

Year	PDP 2010 Rev3		PDP 2015		Changes	
	Peak Generation Requirement (MW)	Electric Energy (Million Units)	Peak Generation Requirement (MW)	Electric Energy (ล้านหน่วย)	Peak Generation Requirement (MW)	Electric Energy (Million Units)
2016	31,809	210,619	30,218	197,891	-1,591	-12,728
2026	46,003	304,548	40,791	267,629	-5,212	-36,919
2030	52,256	346,767	44,424	291,519	-7,832	-55,248
2036	-	-	49,655	326,119	-	-

Source : Office of Energy Policy and Planning Ministry of Energy

From the above stated hypothesis, Thailand Power Development Plan for the year 2015 - 2036 (PDP2015) can be summarized that, at the end of the year 2036, the electrical capacity shall be 70,335 MW, comprising of current electrical capacity at the end of 2014 of 37,612 Megawatts (MW), new electrical capacity of 57,459 Megawatts (MW) and deduction of the retired capacity during the year 2015 - 2036 total 24,736 Megawatts (MW).

Electrical Capacity during the year 2015 - 2036

• Total capacity as of December 2014	37,612 MW
• Total added capacity during the year 2015 - 2036	57,459 MW
• Total retired capacity during the year 2015 - 2036	24,736 MW
• Grand total capacity at the end of the year 2036	70,335 MW

Total added capacity during the year 2015 - 2036 of 57,459 MW, can be divided as follows:

Renewable Energy Power Plant	21,648 MW
• Domestic power supply	12,105 MW
• Foreign power supply	9,543 MW
Pumped-storage Power Plant	2,101 MW
Co-generation Power Plant	4,119 MW
Combined Cycle Power Plant	17,478 MW
Thermal Power Plant	12,113 MW
• Coal / Lignite Power Plant	7,390 MW
• Nuclear Power Plant	2,000 MW
• Gas Turbine Power Plant	1,250 MW
• Foreign power purchase	1,473 MW
Total	57,459 MW

Source: Office of Energy Policy and Planning Ministry of Energy

Government's policy in renewable energy investment promotions in the year (2016 – 2017) focused in the overall social problem solutions, the problem of garbage disposal. It is a very important issue. Due to the high cost of waste disposal. Including the waste disposal system generated by waste incineration. Current problems include: Community waste problem and the agricultural output, etc., with strategies to promote bioenergy, such as energy from biomass and biogas. The current potential that can produce about 500 Megawatts (MW) of electricity and 2,500 Megawatts (MW) of biomass. That is also coordinated with the Ministry of Agriculture and Cooperatives' Zoning Policy. To increase the planting area of sugar cane and palm. And increase cassava yield from 3.5 tons per rai per year to 7 tons per rai per year. This can increase the fuel's potential for generating 1,500 Megawatts (MW) of electricity. Zone alignment is very important in the development of renewable energy projects in the biotech sector. To prevent the shortage of resources to generate electricity. It may affect the operator. At present, the government is trying to promote and encourage the emergence of renewable bioenergy projects. Also considered a very important group. That will increase the proportion of electricity produced by renewable energy. From the current 8 percent to 20 percent of the country's total electricity demand in 2036, the total renewable energy capacity will be 19,634.4 Megawatts (MW), as shown in the following table.

Alternative Energy Development Plan (AEDP) for the year 2036 (Unit : MW)

Year	Solar Cell	Wind Turbine	Hydro Power	Municipal Solid Waste	Biomass	Biogas	Energy Crops	
2014	1,298.5	224.5	3,048.4	65.7	2,547.8	311.5	-	7,490.4*
2036	6,000.0	3,002.0	3,282.4	500.0	5,570.0	600.0	680.0	19,634.4*

Remarks * Installed capacity

Source : Energy Policy and Planning Office, Ministry of Energy

With regarding to the government's Alternative Energy Development Plan (AEDP) for the year 2015 – 2036 in order to substitute the fossil at 30 percent within the year 2036, this Power Development Plan has included total renewable energy power plant with the electrical capacity of 19,634.4 Megawatts (MW). This electrical capacity is considered as installed capacity and shall provide 17,678.9 Megawatts (MW) which consists of the current electrical capacity system at the end of 2014 at 5,872.1 Megawatts (MW) deducted by the retired capacity of 298.1 Megawatts (MW) which resulted in the new electrical capacity of 12,104.9 Megawatts (MW). The new electrical capacity from renewable energy during the year 2015 – 2026 total 8,101.2 Megawatts (MW) and in 2027 – 2036 shall be 4,003.7 Megawatts (MW) respectively:

Category (Unit : MW)	During the year 2015 – 2026	During the year 2027 – 2036
Solar Cell	3,292.5	1,077.6
Wind Turbine	1,643.7	910.2
Hydro Power	191.0	86.9
Biomass	2,122.6	1,363.9
Biogas	199.1	108.2
Municipal Solid Waste	373.2	56.0
Energy Crops	279.1	400.9
Total	8,101.2	4,003.7

Source: Energy Policy and Planning Office, Ministry of Energy

The government's policy aims to use renewable energy and alternative energy between 2015 and 2036 (AEDP) to replace 30 percent of fossil fuels in 2036. The proportion of renewable energy will increase from 30% to 40%. The Department of Alternative Energy Development and Efficiency (DEDE) has responded to this policy and will revise the PDP 2015 by focusing on the promotion of solar panels installed on roofs and waterways. DEDE is currently researching the impact of installing solar power systems. This has an impact on the country's capacity forecast for the reserve power. Also, the system of transmission lines, which may be affected by the flow of electricity back into the system. For the target of 20% renewable energy generation in 2036, it is estimated at 1.95 megawatts. In case of the 40% increase, renewable energy will be increased to 37,000 megawatts. The first revised AEDP Plan is being prepared by the revised AEDP Plan. It is anticipated that the production plan will be adjusted as follows:

Table is shown Alternative Energy and Alternative Energy Development (AEDP) in 2036 under implementatin : Megawatts

AEDP	Solar Cell	Wind Turbine	Hydro Power	Large Hydroelectric Power	Municipal Solid Waste	Industrial Waste	Biomass	Biogas	Energy Crops	Total (MW)
Increased	6,500	2,900	-	-	550	-	3,900	550	2,900	17,300
New Plans	12,500	6,000	376	2,900	1,050	50	9,550	1,150	3,600	37,176

The country's peak demand for electricity (MW) in 2017, lower than expected at 30,303.4 megawatts, is lower than 2016 at 30,972.73 megawatts or less than 2%. With electricity reduced in 2017, it is expected to be due to slowing economic growth. Including the use of public electricity, Industrial and energy saving measures of government agencies, promoted by DEDE in 2017

Thailand imports or purchases electricity through the Electricity Generating Authority of Thailand, with more than 5,400 megawatts currently under development, some of which are either under development or in progress. And all imports will increase to more than 11,000 megawatts. Under the latest power development plan of the country. Power plants that sell electricity to most of Thailand. It is a hydroelectric power plant in the Lao People's Democratic Republic (Lao PDR). Mostly, the transmission system for neighboring countries is separated from the domestic power transmission system. Electricity from These projects must be able to deliver electricity both within Thailand and can also be exported to other neighboring countries via Thailand's electricity network.

According to historical data Power plants built outside of Thailand tend to have lower environmental standards compared to power plants built in Thailand. This affects the environmental sustainability of Thailand. Implementation of environmental standards at the level applicable to projects in Thailand. Extending to imported energy sources will reduce the environmental impact of these projects. It can also reduce domestic and international resistance to the development of these power generation projects. It would be better to cancel the electricity trading system directly from the electricity network of Thailand. And transform it into another system that extends wider cooperation framework, such as interconnection between networks and networks, or trading between generators or free trading. Although the proposed electricity trading system may cause Operation difficulties of the Thai side. But it is a great opportunity for Thailand to increase the choice of sources of energy to produce diverse energy from neighboring countries in the region. And it can also export electricity when it exceeds demand.

Source: Assessment of Thailand's Energy Security, 2016

Overview of the business

- **Manufacturing, supplying and selling of electrical equipment**

The growth trend of the company's business. That is directly related to the expansion of the country's power transmission and distribution system, which depends on the amount of electricity demand and the amount of electricity produced in Thailand. Including government policies for the development and expansion of the country of electricity system. The various agencies associated, such as the Electricity Generating Authority of Thailand and the Office of Energy Policy and

Planning. Ministry of Energy, will forecast future demand for electricity in Thailand. And the framework of the power development plan. For information on investment planning, development projects. To support the growing demand for electricity in the future. Based on the development plan data and expanded the power system during the National Economic and Social Development Plan No. 12 (2017-2021), has 3 agencies include such as Electricity Generating Authority of Thailand, Metropolitan Electricity Authority and Provincial Electricity Authority with plans for investment, construction, development of transmission lines and the power stations. Plan to upgrade and expand the distribution system. Including the plan to change the electrical wiring of underground power lines in Bangkok area. And in major cities in the provinces. With a total investment of over billions bath. That demonstrates the continued importance of the government in investment in power transmission and distribution systems. As a result, the trend of electrical equipment business in Thailand is likely to continue for many years, according to such policies. In addition to the development of transmission and distribution systems. Equipment business for power system also has the opportunity to grow from Transportation and Infrastructure Development Project. Public transport in the metropolitan area includes metro construction projects in Bangkok and vicinities.

The government has a plan underway No. 12 of National Economic and Social Development Plan (2017-2021).

- **Manufacturing, supplying and distributing equipment for renewable energy systems**

Growth trend of equipment business for renewable energy system of the company. There is a direct relationship with the promotion of alternative energy investments by the public sector. At the meeting of the National Energy Policy Council (NEPC) on May 14th, 2015, a summary of the support for the solar farm project for the period 2016-2017 detail as follows: 1) open to purchase 100 Megawatt of the solar free-roaming pilot projects (Solar Rooftop), divided into 50 Megawatts of power for PEA and 50 Megawatts for MEA. Both are divided into 10 Megawatt for household quarters and 40 Megawatt for business buildings. But there will be no electricity supply to the system of electricity. 2) Ground-based solar panels for government agencies and agricultural cooperatives totaling 800 Megawatts, divided into 400 Megawatts for government and 400 Megawatts for agricultural cooperatives. There separately to 2 phase, which the first phase is set to no more than 600 Megawatts. This is divided into 300 Megawatts for government and a 300 Megawatt for agricultural cooperative, which has been selected in phase one. Due to the law has not been to participate in the project. Agricultural cooperatives are still eligible for the project.

Eligible agricultural cooperatives are eligible to participate in the project and through the first phase of the lottery, total 67 projects are under construction, with 281 Megawatts for installed. For Phase #2, the project was launched in May 2017, with the purchase of 119 megawatts of agricultural cooperatives and a total of up to 100 megawatts of electricity at 4.12 Baht per unit with a condition of contract 25 years. There were 27 cooperatives selected equal to 119 megawatts and 11 government agencies selected equal to 52.52 megawatts. In addition, the government announced the purchase of small power plants (SPP) Hybrid for 17 cooperatives at 300 megawatts. Moreover, the government plans to get a large-scale power plant (VSPP) for biomass and biogas from power plants and semi-industrial wastewater in 2018. It is expected to purchase at least 269 megawatts. From 2018 onwards, there is a chance to invest in the renewable energy sector from 2017.

In addition, the Board of Investment (BOI) has announced policies to support investment in order to implement production to be more efficiency in 2017 according to the Board of Investment (BOI) announcement 9/2017. Renewable energy or reduce the impact on the environment. By offering tax incentives to eligible beneficiaries in accordance with regulations such as industrial groups, warehouses and large buildings. The roof of the factory can be equipped with solar panels. And the electricity produced is used in the plant itself, to reduce the electricity consumption from the electricity. At present, there are many industrial plants and warehouses that are interested to joining in the project.

As a result of this policy, the equipment business for renewable energy systems will be expanded. In addition, the design of a large wind turbine installation project, electricity supply parallel to the distribution system. To be included the development plan of the power system, during the last development from 2015 - 2036. Therefore, from the promotion and support of the public sector renewable energy business. As a result, the trend for renewable energy equipment business is likely to continue to grow in the future. With government leadership and support in investment.

- **Manufacturing and distribution of electricity from renewable energy**

Trends in the production and distribution of electricity from renewable energy in Thailand Overview of Renewable Energy for Thai Electricity, the trend is growing. There are important public supporters who want to drive more renewable energy. To replace fossil fuels with 20% of final energy consumption. The government has supported the use of renewable energy. To get to the target by setting the rate of purchase electricity in various forms. Started by the system to raise electricity purchase price of electricity from renewable energy (Adder), which the Thai government

has been introduced under the plan for renewable energy development in 2007 to present and support in the form of Feed-in Tariff (FiT). The term of the power purchase agreement is 20-25 years to more encourage investment in renewable energy. For example, solar energy, garbage and wind energy. However, the government's various procurement rates are just main of factor that, calculates return on investment. And there are other key factors that returning calculation include the government's investment, promotion policy. And financial conditions from financial institutions etc.

Trends in the production and distribution of electricity from renewable energy in Thailand. There is a tendency in the same direction as the equipment business for renewable energy. That will rely heavily on government investment. As a rule, electricity from renewable energy. The cost of electricity generation is higher than that other types of power generation, especially solar power, which costs as high as 8-10 baht per unit.

Making the investments in commercial electricity production and distribution with renewable energy is not worth in the investment. Therefore, the majority of the electricity generated from renewable energy in the past. That is characterized by the production of wastes such as waste husk or bagasse at a lower cost. And produced with very low power to be used within the relevant industry. That is not commercially available for sale at all. However, with the current government support, even with the change in the purchase rate of the Adder system, to the former Feed in Tariff as well. The electricity generated by renewable energy continues to power generators and businesses. Interested in investing in renewable energy. The purpose is to invest in production for distribution to government entities, which are targeted to generate electricity from renewable energy.

Trends in the generation and distribution of electricity from renewable energy are likely to continue to grow as demand for electricity continues to be increase. The peak demand for electricity in 2016 is 29,618.8 Megawatts, up from the previous year at 8.30% and is likely to increase due to the expansion of economic activity and hot weather. Therefore, the government still needs to issue a policy to support the growing demand for electricity.

For the business of producing and distributing solar electricity, Considering from Thailand Electricity Development Plan 2015-2026, it was found that Thailand's electricity production target. Will generate 40% of electricity from solar energy from the total 8,101.2 Megawatts of solar energy or 3,292.5 Megawatts. Thailand is also a country with high potential for generating electricity from solar energy. Because Thailand is close with the center of formulas. Therefore, most areas in the country are continuously sunlight throughout the year. Based on such factors, the manufacturing business. And the distribution of electricity from solar power in Thailand is likely to continue to grow in the future.

In 2017, the Energy Regulatory Commission (NPC) have plans to open 1,189 Megawatts (MW) of government policy, divided into 4 projects:

1. Industrial Waste Energy Plant, target 50 Megawatts (MW)
2. Community Waste Energy Plant, target of Production capacity 120 Megawatts (MW)
3. Biomass power plant with FiT Bidding system, with the target of 300-400 Megawatts (MW)
4. Ground-based solar power plant projects for government sectors and agricultural cooperatives. (Phase II solar farm) with a capacity of 519 Megawatts, 400 Megawatts for government and 119 Megawatts for agricultural cooperatives.

Trends in the production and distribution of electricity from renewable energy in Vietnam.

The company is also interested in renewable energy businesses in Vietnam, on focusing on solar energy and wind energy. This is a renewable power plant that, the Company expertise in development and construction. The currently, Vietnamese government estimates that the country's energy consumption will increase to 234.6 terawatts in 2020 and increase to 506 terawatts within 2030. That plans to have a capacity of 850 Megawatts of solar power plants in 2020 and 4,000 Megawatts and 12,000 Megawatts in 2030.

- **Business of construction of renewable energy power plants**

The government encourages the generation of electricity from renewable energy. Including the potential of Thailand to generate electricity. There are both local and international companies who are interested in investing in renewable energy. The construction of a renewable power plant of the company, will grow up and increase the number of renewable power plants. And as mentioned on above. Renewable energy production in Thailand is still in early stages and will grow in the future in accordance with the plan to develop Thailand's power generation 2015-2036.

16.3.2 Competition

- **Businesses of manufacturing, supplying and selling equipment for electrical system and renewable energy system**

The Company's main clients are government sectors, state enterprises and large private companies. In general, customers will set criteria for qualifications of the operators who attend project biddings as well as consider the potential and experience of each bidder in supplying equipment for projects. The Company's management estimates that there are 8-10 operators considered as bidding competitors, some of them have assorted product categories. However, no operators have competitively full-range products as the Company and its subsidiaries. Being

supplier and distributor of a wide variety of products, the Company therefore has these operators as its business partners.

Furthermore, electrical system is one of the country's main infrastructures. The government thus recognizes the importance of continual investment every year. As a result, the total market value of the business has been growing steadily in line with the government's investment policy. In the meantime, there are a few new operators entering the business because they must rely on funding and the ability to supply products that meet customers' requirements both in terms of quality and quantity. The competition in this business is therefore not severe.

The Company's group is renowned for product quality and variety. Being in business for over 30 years has contributed to the Company's expertise in procuring quality products from various trade partners both locally and abroad. The Company's manufacturing plants enable it to provide quality products under better cost control and thus outperform other operators who do not own manufacturing plants with flexibility of stocks that can be readily supplied to customers. The Group also seeks to fulfil varying needs of customers by focusing on product quality and constant research and development. Products manufactured by the Group's plants are not only listed with the Ministry of Industry and certified for industrial standards, thereby making the Group to have good relationships and win the trust of customers who have given the Group all-time patronage.

- **Business of producing and selling electricity**

Investing in projects of commercial production of solar-based electricity, private companies is bound by terms and conditions of electricity purchase agreements to produce and sell all the electricity to agencies related to electricity. As the Company gains revenue from selling all electricity produced to PEA, there is no competition in its electricity sale business.

The entry into such businesses, entrepreneurs or persons who invest in electricity for distribution to the Electricity Authority. Primary qualifications required by the Electricity Authority and the Ministry of Energy must be met. And technical information will need to be considered to approve the contract with the Electricity Authority. In conjunction with the business. Entrepreneurs will have to spend relatively high capital to build power plants for electricity. Which of the various factors. As a result, competition in the solar power generation and distribution industry isn't very strong. That is pleasant to the company more than 235 Megawatts of commercial solar power can be successfully completed.

The Company is under the construction of 2 wind turbine power plants with the electrical capacity of 110 Megawatts and the plants shall be completed during the year 2017 - 2018. Thus,

the Company recognized the importance of wind turbine acquisition from the manufacturer who is keen in service, warranty and efficient in generating suitable energy by considering the average wind speed in each project location. In addition, the Company is well-prepared in fundraising from the capital market, business alliances as well as credit from financial institutions who always give good support to the Company.

The Company present, to be operation commercial power distribution of the wind power plant of Wind Energy Development Co., Ltd., with a total capacity of 60 Megawatts (MW) in March and December 2016, respectively. This resulted earnings from higher earnings. Under the process of development a 110 Megawatt (MW) of power plant. That is projected that it will be able to generate 60 Megawatts of electricity in Q1/2017, and 50 Megawatts in Q2/2018.

Currently, the company aims to expand its investment in other types of renewable energy plants. In addition, to electricity from solar and wind power. And with the potential of biomass in Thailand that, has the potential to generate electricity from biomass. The government plans to develop power generation (PDP 2015) with high demand for electricity from biomass. At present, the target of purchasing electricity from biomass power under the PDP 2015 plan is approximately 5,570 Megawatts (MW). Therefore, we focusing on a channel to expand the generation of renewable energy that, expected to grow higher. Currently, the purchase of electricity from biomass power plants has been modified from the existing form of Adder at 30 satang per unit. Is a form of Fit-in-Tariff. Which gives higher purchasing power and a 25 years sponsorship, resulting in better payback of biomass power plants. However, the management of biomass power plants. That still depends on the raw materials entering the competing power plants in terms of price and quantity purchased in certain areas. Including transportation from raw materials to biomass power plants. So the company Therefore, we have studied and researched suitable energy crops. To create a planted area itself. To reduce the risk of reliance on raw materials from other sources. This has the advantage over competitors.

In addition, the company. There is a clear policy to invest in alternative energy in the internationally. To gain more power purchase agreements. Taking into account the return on investment and the stability of long-term income such as, investment in solar power in Japan, Malaysia and Vietnam and the company is confident that, the investment in renewable energy abroad. That will increase significantly over the next 3 years to achieve the goal of owning offshore power plants of at least 400-500 Megawatts (MW) within 3 years. Presently, the company has invested in a total of 241.1 Megawatts of solar power plants in Japan under development. Expected to be commercially available in 2018 with 2 projects and also has 2 projects for 2021.

- **Business of construction of renewable energy power plants**

Currently, several construction companies have entered the bidding. The Group has the first experience in constructing of solar power plants in Thailand. So the company has the power to negotiate with manufacturers of solar panels, wind turbines and other equipment used in power plants quite a lot. And the company also develops products and equipment used in renewable energy plants in the Group's own factories, thus giving the Company another competitive advantage in terms of cost of construction of renewable power plants. The problem of the contractor from abroad will have to hire the company. Subcontracting in Thailand has a higher cost. Endowed with the company can also provide various types of power plant construction services, such as BOI, Permit of Factory Operation (RorGor.4) , Coordination with Electricity Authorities and related government sectors, etc. to owners of renewable power plants. This makes the owner of the power plant more convenient when using the service of the company.

- **Business of Private Power Purchase Agreement (Private PPA)**

At present, Industry, Department Store, Private Sector are more interesting to the purchase of solar panels installed on the roof. The company plans to expand its presence in the market. Moreover, with the experiences of solar panels installment on the roof. As well as the products selection using the power plants construction is standard quality, performance guaranteed of standard power plants, so the company has more competitive advantage.

17. Risk Factors

17.1 Dependence on client risks

17.1.1 Risks of dependence on government sector clients

Major and important clients of the Company and its subsidiaries in government sector include the electricity-related agencies such as the Provincial Electricity Authority, the Metropolitan Electricity Authority and the Electricity Generating Authority of Thailand in terms of business to distribute high pressure electrical equipment and business to procure and construct the power plant and transmission line.

- **Business to distribute high pressure electrical equipment**

The revenue from sales to these customers is based on the government's budget for the development of production capacity and supply. If there is a change of the cabinet that results in alteration of electricity investment policy or any delay in approval of procurement for various projects, the Company's revenue in relation to these clients may be affected. Moreover, procurement processes of the government agencies are carried out mostly by competitive bids that sometimes involve many bidders. If the Company does not win the bids, it will lose revenue from these clients.

So it can be said that the risks arising from the change of investment policy in the government power sector is quite low. As for the bids for government projects, they tend to be carried out separately according to product groups. The Company's products are not only of great variety, but also accredited by ISO 9001 quality standards. Many of them are registered with the Ministry of Industry as well as guaranteed by the tests of independent institutes, both domestically and internationally. Some of its products are certified by the Office of Industrial Standards (TIS) as well. The Company is therefore at an advantage when competing in bids for supply of products to the government agencies and state enterprises, which generally promote and encourage the procurement of products accredited and certified by the Ministry of Industry. For this reason, the chance of the Company to be selected in a project bid of any type is quite high as well.

- **Business to procure and construct the power plant and transmission line**

Investment in electricity capacity development and supply is regarded as investment in basic public infrastructure that grows continually in the past few years and continually in the next 3 years. Due to the unbalance of electricity production and usage in each region of a country: in south the electricity production as a contract at 3,059 MW and demand of electricity usage at 2,467 MW. In case that any large power plant in south stop working only 1 station in peak time; China Power Plant, that has a capacity at 710 MW will reduce electricity production to 2,349 MW (3,059 – 710) which will cause an insufficient electricity. Also, a promotion of coal power plant production in south to be a reserve capacity is not obviousness yet. Thus, a policy of reserve capacity transfer through transmission system or distribution system from other regions is still necessary for south area. Although, an obviously construction plan of transmission line in other regions and has started to open an auction already in the past year. Also, there have more budgets in the auction of transmission line in this year and next year as well. In this slow down economic condition that has not yet recovered from World economic condition, might result in a necessary of capacity reservation and rapidity in expand a large high voltage transmission line type 230 – 500 Kv. In terms of the Company's station and transmission line construction, it is considered as a risk to rely on a government customer; in case that, the projects are not completed by the due date of the plan.

17.1.2 Risk of dependence on large clients

In 2017, the company sold products to approximately PEA offices in different areas for the value of 304.19 million baht or equal to 6.38% of the company's sale income and private sector for the value of 930.13 million baht or equal to 19.51% according to consolidated financial statements.

Major customers of the company are regular customers who have maintained contact and business with the company for a long time and have a good relationship. Maintaining good standards of goods and services quality for over 30 years, the company is confident that it will continue to gain trust of customers. However, the company has a policy to reduce risk of dependence on any particular customer in each market, by constantly seeking new customers in order to expand customer base and to create more business opportunities and development of new products such as development of energy-saving LED light bulbs for distribution to the government sector and private sector, the LED lamps classified under the consumer products with a high market value. The lighting products are available in all buildings. Also, it is a product that has been promoted by the government for purchasing to replace instead of the traditional lamp that uses more electricity or power.



17.2 Risk of exchange rate fluctuation

As the nature of business of the group involves export and import from foreign countries, including invest in renewable energy in foreign countries. The Group might be affected by the fluctuation of exchange rates. It might have gains or losses on exchange rates. In order to reduce a fluctuation effect, the Company has the proceeding as follow:

- Make a balance between revenue and expense or debt which is a foreign currency to be natural hedge.
- Manage foreign currency deposit.
- Do the forward currency trading contract.
- Use financial derivatives in order to have a right to trade foreign currency with an appropriate exchange rate.

In addition, the company has implemented the exchange rate policy to serve as a guideline for foreign exchange management of the Group to be effective and perform in the same direction.

17.3 Possible risks to the power generation and supply business

17.3.1 Risk of power generation performance

The ability to generate electricity of a solar power plant depends on two main parts, i.e. the quality of the solar panels and the amount of losses incurred in the electricity generation system. To prevent such risks, the Group uses solar panels from the top well-known companies which is regarded as one of the best manufacturers of quality solar panels recognized around the world.

Present, the Company has successfully realized its potential and proficiency in solar farm construction, developed the engineering team and subcontractors, as well as meticulously selected key equipment related to solar farm construction from manufacturers who have delivery capability, proper after-sale services and warranty. As a result, the Company can reduce risks from dependence on large contractors in power plant construction, thus being a big step forward in the greater enhancement of managerial competitiveness, cost controlling and efficiency of power plant construction.

After the completion of solar farms, the Company's joint venture partners and other operators have placed trust in the Company with the signing of operation and maintenance agreements for power plants amount 172.78 MW and making commercial sales. This enables the Company to comprehensively control and monitor the capacity of power supply and efficiency of solar farm operations, thereby mitigating risks from guarantee of minimum supply quantity of each project.

For wind power plant, the Company has chosen high potential technology from the top well-known and experienced companies. Moreover, the Company has recorded wind speed in continuous space for 4 years; in order to consider a possibility of electricity production from wind power before investing.

For biomass power plant, the Company is in between development and promotion of energy crops plant from agricultural sector with the experienced adviser, in order to have fuel for continuously producing electricity and controlling cost. Also, in order to reduce a competition to fight over fuel with other traders.

17.3.2 Risk of power supply

The Group has signed a power purchase agreement with PEA for distribution of power at the amount specified in each contract. The contract is a Non-Firm type for reasons that in the generation of solar-base power, the amount of power generated each time cannot be specifically controlled. There are two groups of contracts: Adder and Feed-in-Tariff. According to the adder agreement, the PEA will purchase all electricity produced by quantities specified for each project. The contract is five years from the date of signing the contract and automatically continues for a period of five years. The PEA does not have the right to terminate the agreement. For FiT agreement, the contract term is 25 years at fixed price throughout the contract period. In case of the company comply with the conditions stated in the contract, It is considered that the company has no risk from the inability to generate and supply electrical power. In addition of being a partner with government department, the company will certainly receive a quite high payment.

For wind power plant, the risk in power generation is similar to solar power plant which is a Non-Firm type because of an unstable wind speed which caused by season factor. However, as the average of wind rate from each projects that the Company has installed wind measurement towers for 4 years. The result is that the areas are perfect for commercial power plant construction with the party, Provincial Electricity Authority and Electricity Generating Authority which have a high stability. It is considered that there has no risk from power generation.

For biomass power plant, the duration of the contract is around 20 – 25 years and a Non-Firm type which has no penalty in case that unable to generate power. Also, with a Feed-in-Tariff purchase form (FIT) that has a stable purchase price throughout the life of the project which can plan a properly management. Moreover, a buyer is still Provincial Electricity Authority, so there has no risk from power generation as well.

17.4 Risks of economic and political factors

After the government of General Prayut Chan-o-cha started the administration in the year 2014, it can be seen that Thailand's overall economic situation was improved with high confidence from both domestic and international investors. The government has set various policies in stimulating the economy as the report of Office of the National Economic and Social Development Board (NESDB) indicated that the economy in the year 2016 expanded at 3.3 percent when compared to 2.8 percent in the year 2015. Both government and private sectors' investment projects indicated favorable adjustment in the second and third quarter of 2016 while the expectation of Thailand's economy in the year 2017 shall be expanded to 3.9 percent or increased to 0.5 percent which comes from continuously upward trend of government expense, especially the investment project of transportation infrastructure by rail, road and water. It is expected to start the project in 2017; such as, double track railway project, passenger ships between east to west and urban trains. Moreover, the Company has a major customer, State enterprise that has a lot of budget support. Including, the equipment that the Company produce and distribute will be relevant to government infrastructure investment projects. Therefore, our business is likely to grow as a result of the increased public investment. In addition, the economic outlook for the year 2018, farm income will improve in line with global market commodity prices. This will be a boost to a consumption of private sector recovery. In addition, the economic partner countries are likely to have a better expansion. Also, the Thai baht trend is likely to weaken continuously which expected to affect the volume of export orders. Meanwhile, service exports are expected to continue to expand as foreign tourist arrivals expand on the domestic stability. It is expected that in 2018 the baht will depreciate to 34 baht per US dollar. The appreciation of the baht will be a good advantage to the company in terms of importing goods from abroad and affecting by the power plant projects in abroad. However, other currency In Asia is likely to appreciate as well as Thai baht. Therefore, the appreciation of Thai baht has not impact on the company's projects.

Moreover, energy policy is one of the significant policies in which the government is concerned about as the Energy Policy and Planning Office has passed the resolution in the Thailand Power Development Plan for the year 2015 – 2036 (PDP2015) in focusing the stability of power distribution by spreading fuel in energy generation, reducing natural gas dependability, adding the proportion of energy generation from clean coal technology, increasing foreign power supply, adding the proportion of energy generation from renewable energy, developing transmission and distribution system in order to support the development of renewable energy, joining in ASEAN Economic Community (AEC), arranging Energy Efficiency Development Plan (EEDP) and Alternative Energy Development Plan (AEDP) to be in the same timeframe with the PDP2015. In the future, these plans shall greatly support the Company's business

growth in manufacturing and distributing equipment for transmission and distribution system, manufacturing and distributing energy-saving equipment (LED) and developing renewable and alternative power plants.

Source: <http://www.thaigov.go.th/>

On February 17, 2017, the National Energy Policy Council (NEPC), chaired by General Prayut Chan-o-cha, Prime Minister, approved the purchase of electricity from renewable energy in the form of feed-in tariff (FiT) for Small Power Producer (SPP Hybrid Firm) (10-50 MW) and Very Small Power Producer (VSPP Semi-Firm) (less than 10 MW).

Small Power Plant Hybrid Firm

With the target of purchasing 568 MW of electricity, it can use more than one type of fuel, unallocated and energy storage system (ESS), only Firm and EGA type contract. Power generation 100% during Peak and not over 65% during Off-peak which may be lower than 65%. This is in line with EGAT's stipulation, without using fossil fuels for power generation, except for the start-up phase. With the same electricity meter and installed Unit Monitoring (UMM), with appropriate penalty if the electricity can't be delivered under the contract, including having a fuel supply plan and a plan to develop new fuels more in common areas, such as energy crops, etc. Scheduled Commercial Operation Date (SCOD) will be happen by 2020. The purchase of electricity is in form of Competitive Bidding by using FiT rate for competing with all fuel types. The project that will supply power in 2560 has the purchase rate at 3.66 baht per unit.

Very Small Power Plant Semi-Firm

The purchase of electricity from Very Small Power Producer Semi-Firm will be used only for new power plants, biomass, biogas (waste water/ waste) and biogas (energy crops) that can use energy storage system and must be a 6 months Firm type contract. (Power generation 100% during Peak and not over 65% during Off-peak which may be lower than 65%. This is in line with EGAT's stipulation). The month is expected to be used up to 4 months (March – June) and for the remaining 6 months it will be a Non-Firm contract by prohibiting use of fossil fuels to generate electricity, except for the start-up phase. Also, must have a fuel supply plan and a plan to develop new fuels more in common areas, such as energy crops, etc. Scheduled Commercial Operation Date (SCOD) will be happen by 2019. The purchase of electricity is in form of Competitive Bidding by using FiT rate divided by all fuel types.

- Biomass fuels at a rate of 4.24 – 4.82 baht per installed capacity unit.
- Biogas fuels (Wastewater / waste) at the rate of 3.76 baht per installed capacity unit.
- Biogas (energy crops) at the rate of Baht 5.34 per installed capacity unit.

FiT Premium is available at 0.30 – 0.50 Baht per unit for the electricity sales in Firm type with duration not exceeding 6 months. For the projects in the three southern border provinces and 4 districts in Songkhla Province will get another 0.50 baht per unit for Fit Premium.

At first, with the electricity purchasing from the small power producer project (SPP Hybrid Firm) at 300 MW, and then open to purchase in the third quarter of 2018, the company expected to bid in the very small power producer project (VSPP Semi-Firm) at 269 MW. By assigning to the Energy Regulatory Commission and the Department of Alternative Energy Development and Efficiency to quantify the electricity purchased by region according to the potential of each area and propose to the Energy Policy Administration Committee to approve before the power purchase announcement as follow the next step.

The results of the meeting of the National Energy Policy Committee, which approved the promotion of renewable electricity generation in the FiT for SPP Hybrid Firm and VSPP Semi-Firm, on February 17, 2017. Regarding as a policy from the public sector, there are significant changes to the Energy Industry. That must be prepared to accommodate the changes in the above-mentioned policies that, give rise to the following factors:

1. Development readiness to enter the full biomass and biological plant business.
2. Availability of sufficient raw material for electricity of the generation.
3. Prepare to plan and develop energy crops as the key raw materials for biomass and biogas plants.
4. Availability of preparation of co-operation areas with semester and communities surrounding the power plant area to ensure the availability and benefit of all parties.
5. Availability of personnel preparation and specialists in biomass and biogas plants.
6. Preparedness and Participation in Bidding to Acquire of the PPA in Competitive Bidding type.
7. The availability of space for construction of the power plants and the construction for the commercial distribution of electricity (SCOD) as scheduled. In this case of the power purchase agreement.
8. Availability of funding sources for the project in particular, project loans to supporting construction and capital for renewable energy management.
9. Availability of risk management in biomass and biogas power plant management. To be support of electricity generation, it's possible to distribute electricity at 100%, capacity for some periods, such as Peak season, due to fines if not feasible.
10. The readiness to manage the fluctuation of the price of raw materials, that is not stable according to the state Changing demand and supply each year.

All above is a main risk due to the economic and political factors that, led to the government's policy setting in the purchase of electricity from renewable energy. This is a major risk in the affected business sector, affecting and influencing are the company's strategy and policy. Next to the field of distribution and production of electrical equipment. The construction of power plants, transmission lines and power stations. Electricity production and distribution including the maintenance of power plants. Which needs to be adjusted, according to government's policies and measures of the Energy Regulatory Commission.

17.5 Risks of investing in solar power plant in Japan

17.5.1 Risks from the policy amendment

In case of the development of renewable energy projects submission and the project fails to proceed. Japanese Government has been changing policy to ensure that the company able to distribute the electricity and specify the future policy.

In order to decrease the risk, the Company has consulted the expert lawyer to implement the policy amendment. Refer that, the company proceeding the project management risks are monitored closely by the developer and the project developer is followed up in detail to ensure that the project is successful.

17.5.2 Risk from natural disasters

Due to, Japan is located on the boundary of the Ring of Fire, it causes frequent natural disasters such as earthquakes. An earthquake in the sea can also cause a tsunami. And there are also seasonal typhoons that, make it necessary for Japan to manage the potential impact of these natural disasters.

The Company manages the risk of natural disasters by do the insurances. The value of insurance, the company referring to a study conducted by Kyoritsu Insurance Brokers of Japan Co., LTD, a specialist in insurance to ensure that coverage is reasonable with the damage that happen.

17.5.3 The risk of project delay

The launch of the solar power project depends on many factors, such as the implementation of the relevant license, power plant construction, sources of funds and all related contracts that concern with the standards of funding. In case of the project couldn't be carried out, this will affect the delays in the commercial operation. The investors need more investment from the expected funding.



Risk management for construction projects, the company has closely monitored the construction progress. By receiving a weekly reports from the contractor and arrange the construction site meetings to consider the realities of the project, as well as receiving feedback from the contractor every month. Therefore, the company is able to realize the problem and plan to resolve it from the initial stage.

For the project under development, the company has been monitoring the progress of the project development periodically. The contractor will consult with the bank as a source of funds to ensure that the company receives a loan from the bank.

In order to manage the risk and motivate the project developer to achieve their target, the company has signed to provide support until the electricity distribution. The profit of the developer of the power plant project will be based on the success of the project. The developers will overview the development of the project in four areas:

1. To provide expertise of the solar power plants contractor, evaluate and considerate to meet the company goals.
2. To recruit the expertise of Japanese staff to control and maintenance of the power plant electricity distribution completely. .
3. To manage the project of power plant construction and to be completed in accordance with the deadline and in accordance with the target period for commercial distribution.
4. To manage and control the operating costs in line with the investment budget and completed within the specified time frame.

Therefore, the company has been monitored the progress of risk management and reviewed by the project developer the meet the project complement.

17.5.4 Risk from Uncertain Power of Electricity Produced

The company has divided the risk into 2 types:

1. The risk of less than expected solar intensity

Due to solar power plants use the solar energy as a main factor in generating of electricity. The lower the intensity of light affect to the lower the amount of electricity produced. The project has lower revenue from electricity sales estimated.

In order to reduce this risk, the Company hired a technical advisor to calculate the average light intensity and bring the estimated and comparable values based on information from industry experts to reduce the risk.

2. Risks due to cell deterioration

The cell panels are the primary device for converting solar energy into electricity. By degraded cell panels, it provides the ability to convert sunlight into a drop of electricity. Even in the same light intensity. The power plant has decreased. That will result in revenue from sales and distribution of electricity.

In order to reduce this risk, the company has contracted with the contractor is responsible for maintaining the guaranteed value for the project at the initial stage. As the company can obtain the standard results throughout the program when deteriorated panels are detected.

17.5.5 Risk of dependence on a complete contractor (EPC Contractor)

Due to the construction of solar power plants, that requires expertise in technology. Experience in construction ability to supply materials and operational personnel all processes need to be coordinated, so the company hires a complete contractor to effectively control the work. And the contractors have the flexibility to accomplish their goals.

However, hiring a complete contractor risks of the project. If the contractor is unable to proceed. So, the company manages the risk from selecting a contractor that will be the company that, has been accepted by the bank in Japan. The one of the conditions is that the company has experience in construction for a long time. The Company has also entered into a contract with the Company. An indemnity can be claimed for damages covered by the terms of claim compensation in accordance with industry standards.

17.5.6 Risk of Limited Power Purchase (Curtailment)

The limiting purchase of electricity, the company electricity sales can be reduced in volume, resulting in revenue from the sale of electricity. The policy on limiting the amount of electricity purchased in Japan can be categorized into 3 main policies, namely limiting the amount of electricity purchased in unlimited quantities. Limiting the purchase of electricity at 360 hours per year. And limiting the amount of electricity purchased at 30 days per year.

Due to the company that is not possible to predict the time. It will be limited to the purchase of power from an unlimited on the supply system. The company manages the risk by investing in projects that limit the amount of electricity purchased at 360 hours per year or 30 days per year only. To the company is possible to estimate the revenue from the distribution of electricity correctly.



17.5.7 Risk from fluctuation of exchange rate

Investing Consideration in a solar power plant project in Japan, for the Company is a fixed-rate of power purchase agreement. The Company considers that, the recognition of income in the Yen currency and the re-payment of a loan from a project loan in the same currency. It is considered as a protection of foreign exchange risk at 85% of project investment from using the same currency. The risk for investments in shareholders' equity at the rate of 15% will be the conversion of the financial statements from Yen to Baht, which will affect to the accounting records only. But without any effect on operating profit or loss in anyway.

17.6 Risk Risk Factors for Solar Power Plant Investment in Malaysia

17.6.1 Risk from the delay in launching the project

The launch of solar power projects process in Malaysia has similar development processes with Japan, which requires a process of license permission, power plant construction, sources of funds and all related contracts that meet the standards of funding. However, power purchase agreements with Malaysia government will have shortened duration of commercial electricity distribution (SCOD) from Japan and strict regulation, In the case of the electricity couldn't be delivered on time, there will be a risk of termination from power purchase agreement.

For risk management, the company is closely monitoring the progress of construction and arranges the construction updates meeting every month.

In order to manage the risk, the company has signed to provide support until the process of electricity distribution. The profit of the developer of the power plant project will be based on the success of the project. The developers will overview the development of the project in four areas:

1. To provide expertise of the solar power plants contractor, evaluate and considerate to meet the company goals.
2. To recruit the expertise of Malaysian staff to control and maintenance of the power plant electricity distribution completely. .
3. To manage the project of power plant construction and to be completed in accordance with the deadline and in accordance with the target period for commercial distribution.
4. To manage and control the operating costs in line with he investment budget and completed within the specified time frame.

Therefore, the company has been monitored the progress of risk management and reviewed by the project developer the meet the project complement.

17.6.2 Risk of lightning

Malaysia has a record of frequent lightning in their country. This may affect the power system which is the risk of natural disasters that couldn't be controlled.

The company has been researched all the factors that could have affected the lightning, hiring the expertise to design a lightning protection system, including other protective equipment. To prevent lightning that will impact on the project.

In addition, the company manages the risk from natural disasters by covering all risk, which covers the damage from lightning as well as reasonable coverage with the the potential damage.

17.6.3 Risk from fluctuation of exchange rate

Investing Consideration in a solar power plant project in Malaysia, for the Company is a fixed-rate of power purchase agreement. The Company considers that, the recognition of income in the Yen currency and the re-payment of a loan from a project loan in the same currency. It is considered as a protection of foreign exchange risk at 85% of project investment from using the same currency. The risk for investments in shareholders' equity at the rate of 15% will be the conversion of the financial statements from Ringgit to Baht, which will affect to the accounting records only and without any effect on operating profit or loss.

18. Capital Structure and Shareholders

18.1 Capital

1) Common Stock

As of December 31, 2017, the Company had registered capital of THB 1,982,967,060.25 and had paid-up capital of THB 1,854,655,373.25 divided into 7,418,621,493 shares at par value of THB 0.25.

2) Warrants to purchase new ordinary shares of the Company

On August 19, 2015, as the Extra-Ordinary General Meeting of Shareholders No. 1/2558, the issuance of warrants to purchase ordinary shares of the Company No. 1 (GUNKUL-W) not exceeding 91,660,129 units at a par value THB 1.00 to the existing shareholders of the Company, the right to purchase new shares in proportion to the shares held by individual shareholders in the ratio of new shares allocated to existing shareholders 2 shares to 1 warrant unit the right to purchase one common share at the price of THB 27.00 per share exercise price and the exercise ratio may change in accordance with the conditions of adjustment and last up to two years from the date of issuance of the Warrants (date October 1, 2015). The date of the warrants 2 years of age and the last exercise date will coincide with the maturity date of the warrants which falls on September 29, 2017 (due on September 30, 2017 is a holiday), by the warrants will cease to be listed securities on the next working day.

As of March 31, 2016, 55 shareholders exercised the warrants at a par value THB 1.00; therefore, the number of unexercised warrants is 91,660,074 units.

On April 26, 2016, as the Annual General Meeting 2016 passed the approval resolution to change Company's par value from the par value of THB 1.00 to be THB 0.25 and approved the adjustment of purchasing right for the exercise of warrant No.1 (GUNKUL-W) due to the changing of par value of the Company. As 1 unit of warrant will be entitled to purchase 4.8 ordinary shares at the price of THB 5.625 per share.

As of December, 2016, none of the shareholders expressed their intention to exercise additional rights. Therefore, there are 91,660,074 units remaining unexercised warrants.

According to the resolution of the Annual General Meeting of Shareholders for the year 2017 held on April 21, 2017, passed the approval resolution to second right adjustment for the warrants to purchase ordinary shares of the Company No. 1 (GUNKUL-W) as 1 unit of warrant will be entitled to purchase 5.6 ordinary share at the price of THB 4.821 per share.

In October 2017, the Company registered the increase in paid-up capital from the exercise of warrants (GUNKUL-W) in September 2017 amounting to 10,016 units, representing 56,088 ordinary shares. In the amount of THB 270,400 the paid-up capital of the Company increased by THB 14,022. The remaining warrants (GUNKUL-W) are 91,650,058 units have expired on September 30, 2017.

3) Bill of Exchange

As of December 31, 2017, the Group's outstanding debt from bill of exchange totaling THB 530 million with several financial institutions by a duration between 3-6 months.

4) Bond

As of December 31, 2017, the Company has outstanding balances from issuing senior bond with unsecured total THB 4,045.50 Million. The redemption schedules are in October 2018, in October 2019, and in May 2020.

18.2 Shareholders

Top ten major shareholders of the Company as of January 22, 2018, the latest closing date of share registration book is as the following.

No.	Shareholder Name	Share (s)	Percentage (%)
1.	Dhumrongpiyawut Family Group		
1.1	Gunkul Group Company Limited	3,693,859,400	49.792
1.2	Mr. Gunkul Dhumrongpiyawut	309,592,726	4.173
1.3	Miss Naruechon Dhumrongpiyawut	359,328	0.005
Total Number of Shares Holding by Dhumrongpiyawut Family Group		4,003,811,454	53.970
2.	Siam Commercial Bank Public Company Limited	232,400,000	3.133
3.	UOB KAY HIAN (HONG KONG) LIMITED - Client Account	216,355,253	2.916
4.	Bualuang Long-Term Equity Fund	158,730,500	2.140
5.	CPYI CLT	139,983,900	1.887
6.	Thai NVDR Company Limited	131,600,327	1.774
7.	Raffles Nominees (PTE) Limited	70,864,080	0.955
8.	Mr. Prakin Sricharoen	69,745,151	0.940
9.	Mr. Suraphong Triamchanchai	65,966,405	0.889
10.	Bualuang Long-Term Equity Fund 75/25	63,209,900	0.852
Total		5,152,666,970	69.456

Gunkul Group Company Limited is the holding company with paid-up capital of 110,000,000.00 baht as of January 22, 2018. Major shareholder is Dhumrongpiyawut family with 99.64% stake in Gunkul Group.

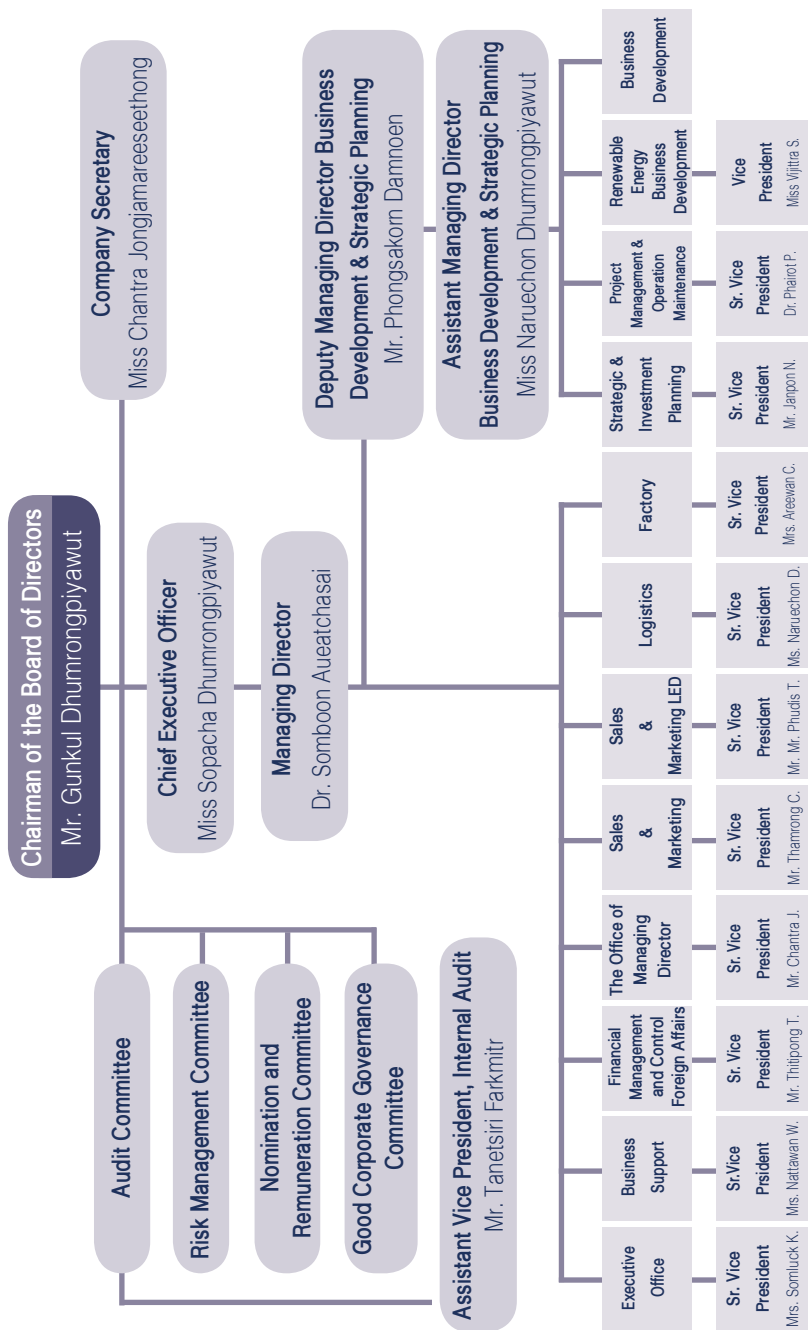
No.	Shareholder Name	Share (s)	Percentage (%)
1.	Dhumrongpiyawut Family Group		
1.1	Mr. Gunkul Dhumrongpiyawut	465,000	42.273
1.2	Miss Naruechon Dhumrongpiyawut	211,000	19.182
1.3	Miss Sopacha Dhumrongpiyawut	210,000	19.091
1.4	Master Arpakorn Dhumrongpiyawut	210,000	19.091
Total Number of Shares Holding by Dhumrongpiyawut Family Group		1,096,000	99.636
2.	Mr. Chaloepon Srichaen	3,000	0.273
3.	Miss Nanpapatr Piyapootinun	1,000	0.091
Total		1,100,000	100.000

18.3 Dividend Payment Policy

The Company has dividend payout ratio of at least 40% of net profit of the Company only (unconsolidated basis) in which net profit is after deducting corporate tax, legal reserve and other reserves. However, the Company may pay dividend less than mentioned above if necessity i.e. more working capital required, aggressive expansion plan, or else. The board resolution on dividend payment is needed to propose to shareholders' meeting for approval, except interim dividend in which board can go ahead and report to shareholders later.

The Company's subsidiaries also has dividend payout ratio of at least 40% of net profit after deducting corporate tax, legal reserve and other reserves. There are another four factors, cash flow analysis, financial status, liquidity and expansion plan, taking into account on how much dividend to pay.

19. Management Structure



The Company's management structure comprises of board of directors, subcommittees and executives in which board of directors comes from independent directors, non-executive directors and executive directors. Independent directors represent one third of board of directors.

19.1 Board of Directors

As of December 31, 2017, board of directors comprised of nine persons as follows;

Name list	Position
1. Mr. Gunkul Dhumrongpiyawut ¹⁾	<ul style="list-style-type: none"> Chairman of the Board of Directors (Non-Executive Director)
2. Dr. Djitt Laowattana ¹⁾	<ul style="list-style-type: none"> Independent Director / Chairman of the Audit Committee
3. Pol.Maj.Gen. Visit Sukarasep	<ul style="list-style-type: none"> Independent Director / Audit Committee Chairman of the Nomination and Remuneration Committee
4. Dr. Chongrak Rarueysong	<ul style="list-style-type: none"> Independent Director / Audit Committee Chairman of the Good Corporate Governance Committee
5. Miss Sopacha Dhumrongpiyawut	<ul style="list-style-type: none"> Director / Chief Executive Officer Member of the Risk Management Committee
6. Dr. Somboon Aueatchasai	<ul style="list-style-type: none"> Director and Secretary of the Board of Directors Executive Director / Managing Director
7. Miss Naruechon Dhumrongpiyawut	<ul style="list-style-type: none"> Director / Executive Director
8. Mr. Chaloepon Sritharoen	<ul style="list-style-type: none"> Director / Executive Director
9. Mrs. Areewan Chaloepondan	<ul style="list-style-type: none"> Director / Executive Director
10. Miss Chantira Jongjamareeseethong	<ul style="list-style-type: none"> Company Secretary

¹⁾ Non-Executive Directors having experience in work related to the Company's business and the Subsidiary.

Authorized Directors

Authorized director who can sign documents that will have impact to the Company is Mr. Gunkul Dhumrongpiyawut or Miss Sopacha Dhumrongpiyawut or Miss Naruechon Dhumrongpiyawut gives signature together with another signature from Mr. Somboon Aueatchasai or Mrs. Areewan Chaloepondan or Mr. Chaloepon Sritharoen and then gets the Company's stamp.

Or Mrs. Areewan Chaloepondan, Mr. Chaloepon Sritharoen and Mr. Somboon Aueatchasai all sign their names and get the Company's stamp.

Scope of Authority and Responsibility of Board of Directors

(Cited by "Board of Directors Charter", Revision Date on 22 November 2016 and Reviewed Date on 25 December 2017)

The Board of Directors has the following authority and responsibility:

- 1) To perform the duty in accordance with the laws, objectives, regulations of the company and resolution of the board of directors as well as the resolution of the meeting of shareholders with responsibility, care and integrity as a prudent person who will undertake his business under the same conditions for the maximum benefits of the company.
- 2) To determine vision, mission, strategy, business direction, policy, target, direction of the operating plan and budget of the company, to supervise, oversee, monitor and examine compliance with the policy, plan and budget provided and to assess the performance of the management consistently.
- 3) To determine the charter and major policy of the company, such as Major business policy (business ethics and good corporate governance), Charter of the board of directors and charter of the subcommittee, Policy, authority, duty and responsibility of the chairman of the board of directors of the company and chairman of the executive board and managing director, Policy, measure on transaction made with unrelated company/person, measure on transaction made with related company/person and table of authority, Financial policy, Financing policy, Fund management policy, Risk management policy, Policy on examination and internal control of the company, Anti-corruption policy and related policy and Other policy related to corporate governance of the company.
- 4) Decision on the following investments, such as Approval/decision on the budget, Approval/decision on the investment project of the company and Supervision of the project in accordance with the plan arranged.
- 5) To supervise, oversee and monitor the operation of the company, To ensure that the target is achieved or exceeded in accordance with the strategy of the company provided, To determine the corrective measure if there is any problem or difficulty to accomplish or exceed the target provided, To determine measure and practice on good corporate governance to manage sustainability, social responsibility and anti-corruption, including other related measures and practices, To comply with anti-corruption measure and other related measure and to take responsibility on implementation of anti-corruption measure and other related measures.
- 6) To prepare general information report and financial report of the company to report and disclose to shareholders and stakeholders or general investors correctly, completely, timely and fairly and in accordance with the laws provided.
- 7) To review whether the financial reporting system, internal control system and risk management system of the company is adequate and suitable or not to ensure confidence in correctness,



completeness and reliability of information and to reduce risk of fraud and to prevent any illegal act.

- 8) To acknowledge the key audit report of the audit committee and the subcommittee, including the internal control division, the auditor and consultants of the company and to determine the improvement and corrective measure if the defect found is significant and to manage and handle the related transaction in accordance with the criteria provided under the laws
- 9) To appoint the person with qualifications and without possession of character forbidden by related laws to become the director of the company in case of vacancy of directorship by other reason except expiry of the term.
- 10) To appoint the subcommittee and its chairman such as the audit committee, the risk management committee, the recruitment and remuneration committee, the good corporate governance committee, the executive board or the other subcommittee and to appoint the secretary of the board of directors and the secretary of the company to support the duty performed by the board of directors.
- 11) To determine remuneration and to appoint the senior executive of the company and to arrange the process to develop the executive of the company through the succession plan.
- 12) To appoint any director or directors or any person to undertake any act for the board of directors of the company while such assignment shall not assign the assignee to approve the transaction the such person or the person with possible conflict of interest or possible conflict of business interest in any nature with the company or the subsidiary company.

However, for the transaction that the director or the person with possible conflict of interest or conflict of business interest in any nature with the company or the subsidiary company, the director of the company who has the conflict of interest in such matter is not allowed to vote on such matter unless such following matters have been approved by the meeting of shareholders.

1. The matter that the laws and the regulations of the company have required the resolution of the meeting of shareholders.
 2. The transaction that the director of the company has the conflict of interest and is indicated by the laws or the requirements of the Stock Exchange that it is required to be approved by the meeting of shareholders.
- 13) To arrange the annual performance of the board of directors, each individual director, every subcommittee and the chief executive officers of the organization. In addition, such assessment will be used to undertake the development and improvement and to be used as data for determination of the policy for continuous development of the organization.
 - 14) To review the policy related to good corporate governance and charter of the board of directors, vision, mission or strategy of the company annually.

- 15) To prepare the activity report of the board of directors for disclosure in the annual report of the company while such report will be signed by the chairman of the board of directors of the company.
 1. Overall opinion or comment that the board of directors has learned from the duty performed in accordance with the charter.
 2. Other transactions that the board of directors has agreed that the shareholders and the general investors should learn within the scope of authority, duty and responsibility assigned by the shareholders.
 3. Number of meetings of the board of directors and attendance to the meetings of the directors of each director, including remuneration received by each director.
- 16) To perform the duty of the board of directors, the independent opinion may be sought from the other independent professional consultant when it is necessary at the expenses of the company.

Role, Authority, Duty and Responsibility of the Chairman

(Cited by "Role, Authority, Duty and Responsibility of the Chairman, Chief Executive Officer and Managing Director",
Revision Date on 22 November 2016 and Reviewed Date on 25 December 2017)

- 1) The Chairman of the board of directors and the Chief executive officer are required to be different persons.
- 2) To call for a meeting of the board of directors of the company and the meeting of shareholders and to chair the meeting of the board of directors of the company and the meeting of shareholders in compliance with the regulations of the company.
- 3) To cast a decisive vote if the votes are on par in the meeting of the board of directors of the company.
- 4) To take a role to control the meeting efficiently in accordance with rules and regulations of the company and to support and provide an opportunity to the directors of the company to express their opinion independently.
- 5) To encourage and support the board of directors of the company to perform its duties at full capacity within the scope of authority, duty and responsibility and in accordance with the good corporate governance principles.
- 6) To take responsibility as a leader of the board of directors of the company to supervise, monitor and look after the management of the board of directors of the company and other sub-committee to achieve the objectives and plan provided.
- 7) To supervise the policy and guidelines on strategic work of the management and to provide recommendations and support to the business undertaken by the management.
- 8) To be a leader and role model on business conduct and ethics of the company and to promote, supervise and monitor the management with respect to sustainable principle, social responsibility and to comply with the anti-corruption measures and guidelines.

19.2 Executives

As of December 31, 2017, there were 27 executives as follows:

Name list	Position
1. Miss Sopacha Dhumrongpiyawut	• Chief Executive Officer
2. Dr. Somboon Aueatchasai	• Managing Director
3. Mr. Phongsakorn Damnoen	• Deputy Managing Director, Business Development & Strategic Planning
4. Miss Naruechon Dhumrongpiyawut	• Assistant Managing Director, Business Development and Strategic Planning
	• Senior Vice President, Logistics
5. Mrs. Areewan Chaloeindan	• Senior Vice President, Factory
6. Mrs. Somluk Kanuenghet	• Senior Vice President, Executive Office
7. Mr. Thamrong Chankraithong	• Senior Vice President, Sales & Marketing
8. Mr. Phudis Triwilaskul	• Senior Vice President, Sales & Marketing-Energy Solution and Lighting
9. Mr. Thitipong Techaratanayuenyong	• Senior Vice President, Financial Management & Overseas Control
10. Mr. Phairot Phanukan	• Senior Vice President, Project Construction Management & Operating Maintenance
11. Mrs. Nattawan Wongchan	• Senior Vice President, Business Support
12. Mr. Janpon Ngamaroonchote	• Senior Vice President, Strategic Planning and Investment
13. Miss Chantra Jongjamareeseethong	• Senior Vice President, Office of Managing Director & Investor Relations
14. Mr. Chaloepon Srichaen	• Vice President, Sales & Marketing
15. Ms. Vijitra Saengpredekorn	• Vice President, Renewable Energy Business Development
16. Ms. Suttirat Tangnorakul	• Vice President, Business Support Department (Accounting)
17. Mr. Sarawut Masrong	• Vice President, Factory
18. Ms. Kullawee Saenchaiakorn	• Assistant Vice President, Financial Management & Overseas Control
19. Mr. Tanetsiri Farkmitr	• Assistant Vice President, Internal Audit
20. Mr. Thanapat Wonghirulchayathorn	• Assistant Vice President, Business Support Department (Technology)
21. Ms. Warinthip Rosarpitak	• Assistant Vice President, Strategic Planning and Investment
22. Mr. Tridti Boonyayone	• Assistant Vice President, Renewable Energy Business Development
23. Mr. Wiwat Chanprasit	• Assistant Vice President, Business Support (Financing)
24. Mr. Kittisak Peanpanich	• Assistant Vice President, Logistics
25. Mr. Werayuth Chamwong	• Assistant Vice President, Factory (Product Development & Process Improvement)
26. Mr. Suwit Rajdeam	• Assistant Vice President, Factory (Production)
27. Mr. Mitree Thaworncheep	• Acting Assistant Vice President, Sales & Marketing

Role, Authority, Duty and Responsibility of the Chief Executive Officer

(Cited by "Role, Authority, Duty and Responsibility of the Chairman, Chief Executive Officer and Managing Director", Revision Date on 22 November 2016 and Reviewed Date on 25 November 2017)

The board of directors of the company has assigned the chief of executive officer to be the leader in management and administration of the company within the scope and authority as follows;

- 1) To manage the business of the company, to supervise and control the overall operation in accordance with the objectives, rules, policies, regulations, requirements, orders, business strategies, targets and operating plans, financial targets, budgets and resolutions of the meeting of the board of directors of the company and/or resolutions of the meeting of shareholders.
- 2) To prepare and submit the business policy of the company, including plan and budget to the board of directors of the company for approval and to report the progress in accordance with the plan and budget approved by the board of directors of the company.
- 3) To undertake or determine the management authority to ensure that the operation is undertaken in accordance with the policies, plan and budget approved by the board of directors of the company efficiently and effectively based on the internal control concept systematically and consistent risk management.
- 4) To determine the organization structure, management method and to select, train employ and dismiss the employees and to determine the wage, salary, reward, bonus and welfare for the employees.
- 5) To direct, contact, command, undertake and sign in the juristic act, agreement, order, notice or any letter used to contact with other agencies or persons to ensure that the work of the company is accomplished efficiently and effectively.
- 6) To have authority to provide the authority to the substitute and/or assign the other person to undertake the specific work for him through substitution and/or assignment within the scope of authority in accordance with the power of attorney and/or in accordance with the regulations, requirements or orders made by the board of directors of the company or the company.
- 7) To be a leader and role model on business conduct and ethics of the company and to promote, supervise and monitor the management with respect to sustainable principle, social responsibility and to comply with the anti-corruption measures and guidelines.
- 8) To have the authority, duty and responsibility assigned or in accordance with the policy assigned by the board of directors of the company.

The assignment of authority, duty and responsibility to the chief executive officer is not the assignment or substitution to allow the chief executive officer or the assignee of the chief executive officer



to approve any transaction that he or the person with the conflict of interest or with possible conflict of interest with the company or the subsidiary company (according to the definitions provided in the notification of the Securities and Exchange Commission) while the approval on such transaction is required to be proposed to the board of directors of the company and/or the meeting of shareholders (as applicable) to consider and make an approval on such transaction in accordance with the requirements of the company or related laws unless it is an approval on the transaction which is the regular business transaction of the company in accordance with the policies and criteria approved by the board of directors of the company.

Role, Authority, Duty and Responsibility of the Managing Director

(Cited by "Role, Authority, Duty and Responsibility of the Chairman, Chief Executive Officer and Managing Director", Revision Date on 22 November 2016 and Reviewed Date on 25 December 2017)

The board of directors of the company has assigned the Managing Director to manage the company within the scope and authority as follows;

- 1) To supervise, control and monitor the business undertaken and/or the general management of the company.
- 2) To undertake or perform the work in accordance with the policies, plans and budgets approved by the board of directors of the company, the executive board and the other sub-committee.
- 3) To be the assignee of the company to undertake the business management of the company in accordance with the objectives, regulations, policies, rules, requirements, orders, resolutions of the meeting of shareholders and/or resolutions of the meeting of the board of directors of the company and/or the executive board and the other sub-committee for the interest of the company while such approval authority is the approval on regular business transaction within the amount not exceeding the amount specified by the board of directors of the company.
- 4) To monitor and assess the operating results of the company consistently to prevent risks from both internal and external factor.
- 5) To have authority to undertake any transaction and to represent the company before the other people in the business related and beneficial to the company.
- 6) To have authority to assign a substitute and/or assign any person or persons to undertake any act as deemed suitable while such substitution and/or assignment shall be within the scope of authority in accordance with the power of attorney made by the company and/or in accordance with regulations, requirements or orders of the director and/or the executive board while the company is able to change, cancel or amend such authority.
- 7) To have authority to issue orders, regulations, notifications, memorandum to ensure that the work is performed in accordance with the policies and interest of the company and to maintain discipline or order of work in the organization.

- 8) To approve the appointment of any advisor necessary for the operation of the company.
- 9) To undertake any work to support the operation of the company within the policies and authority provided by the board of directors of the company.
- 10) To be a leader and role model on business conduct and ethics of the company and to promote, supervise and monitor the management with respect to sustainable principle, social responsibility and to comply with the anti-corruption measures and guidelines.
- 11) To perform any other task assigned by the board of directors of the company and/or the sub-committee.

The assignment of authority, duty and responsibility to the managing director is not the assignment or substitution to allow the managing director or the assignee of the managing director to approve any transaction that he or the person with the conflict of interest or with possible conflict of interest with the company or the subsidiary company (according to the definitions provided in the notification of the Securities and Exchange Commission) while the approval on such transaction is required to be proposed to the board of directors of the company and/or the meeting of shareholders (as applicable) to consider and make an approval on such transaction in accordance with the requirements of the company or related laws unless it is an approval on the transaction which is the regular business transaction of the company in accordance with the policies and criteria approved by the board of directors of the company.

Succession Plan and Talent Management Policy

(Cited by "Policy: Succession Plan and Talent Management", Edited Date on 22 November 2016 and Reviewed Date on 25 December 2017)

1. Regulations and criteria on succession plan

The criteria and regulations of the company on recruitment of personnel are arranged to undertake the key executive management of the company appropriately and transparently to ensure that the executives of the company have qualifications, skills, experience and professional competence through the Recruitment and Remuneration Committee and/or the committee appointed to recruit/select and arrange the succession plan in accordance with the level of the employees as follows.

1.1 Managing director and Chairman of the executive board

To recruit/select and arrange the succession plan while the Recruitment and Remuneration Committee will prepare the succession plan in the level of managing director and Chairman of the executive board for presentation to the board of directors of the company for consideration. To recruit and select the executives of the company, the



Recruitment and Remuneration Committee will monitor the succession plan when the executive posts in the level of the Chairman of the executive board/managing director are vacant or the person in the such post is unable to perform his duty. The company will arrange the system that the similar executive or the deputy post will take care of such post until the recruitment and selection of person with qualifications in accordance with the criteria of the company has been completed and such person shall possess the vision, knowledge, competence, experience suitable to the organization culture and the Recruitment and Remuneration Committee will recruit the persons for submission to the board of directors of the company for approval and appointment such suitable person to take such post.

Primary qualifications of the managing director and the chairman of the executive board

1. Graduated with at least bachelor degree
2. Experience in the management in the level of the line director or upper
3. Leadership and long-term vision
4. Competence in strategic planning and organization management
5. Careful decision and problem solving with consideration of the maximum benefits of the organization

1.2 Executive level from the deputy line supervisor to the vice managing director

If the executive level from the deputy line supervisor to the vice managing director is vacant or the person in such post is unable to perform the duty, the company will propose the person selected to be the successor to the executive board and/or the Human Resource Committee appointed. The succession plan of the executive level of the company is as follows.

- 1) To analyze the business operation of the company in terms of policy, investment plan and expansion plan.
- 2) To assess the human resource availability in congruent with the strategy of the company, both short-term and long-term.
- 3) To determine the human resource availability through development of human resource or recruitment of personnel to replace the leaving employees.
- 4) To arrange the recruitment plan and employee training and development plan in advance of retirement or early resignation of the employees.
- 5) To determine the qualifications and competencies including desirable knowledge, skill, personality and attitude of the employee in such post and to prepare the individual; development plan.

- 6) To select, assess performance and potential of the employees to ensure suitability.
- 7) To employ the test and assess the personnel to determine the potential of the employees.
- 8) To identify the successor through assessment and analysis of performance and potential of the employees with advance notice to the employees for acceptance and learning the job and to determine the spare successor.
- 9) To develop and assess the employees anticipated to be the successor to ensure development and performance as expected. If the anticipation has failed, follow the procedures.
 - To select and plan the new successor or
 - To develop the spare successor (if any) or
 - To recruit and select the persons outside the organization

When the successor has complete qualifications to assume the job with higher responsibility and there is vacancy or new post, he will obtain the promotion and acting post in accordance with the policy of the company on job structure, criteria on adjustment of daily worker to monthly worker, promotion, higher post or approval the chairman of the executive board and the managing director.

2. Regulations and criteria on talent management

“Talent person” means the employee with special capability, performance, skill/capacity and outstanding qualification recruited and selected from employees in the organization and recruited from outside.

Criteria on selection of talent employees from employees in the organization is based on high performance – KPIs/PIs and high competency considered from performance in the past three years while the assessment grade is required to be Good – Excellent and the core competency of the organization is required to be at least B only in accordance with the following core competency: Analysis/assessment of problem, Communication, Focus on customer services, Follow-up and Teamwork/cooperation provided.

In addition, the other qualifications required for the talent employees from recruitment and selection in the organization and new recruitment are Leadership, Responsibility, Creativity and Principle and transparent management.

Development of talent persons

When the talent employees have been recruited and selected in accordance with the qualifications jointly determined by each division/line, background, training and performance records shall be prepared to promote the talent persons for better talent, efficiency of such person and the organization based on the model and criteria on development of talent persons like development of general personnel in the organization as follows.

1. Training Need Survey to determine the need of each unit and the individual need suitable to each job.
2. On the Job Training to determine the need of the individual undertaking the duties of the unit and to determine the measurement process whether in terms of written test or practice.
3. Off the Job Training whether it is the special training or the simulated model and case study.

When the post is available and the qualifications have satisfied the post with greater responsibility, the promotion will be made to an acting post in accordance with the policy of the company on job/position structure, criteria on adjustment from daily worker to monthly worker, promotion, promotion to a new post or approval from the Chairman of the executive board and managing director.

19.3 Authorization for Credit Limit

(Cited by "Policy: Transaction measures with the related and non-related persons and table of approval authority", Revision Date on 29 December 2016 and Reviewed Date on 23 February 2018)

The policy of "Transaction measures with the related and non-related persons and table of approval authority" is prepared to serve as an operational framework and guideline regarding the approval authority in the organization in order to manage fairly and transparently and prevent conflicts of interest. It indicates 2 types of the authority which are the transaction with the related and non-related persons, so that the internal management shall be transparent under the clear operational framework.

- (1) Transaction measures with the non-related persons
- (2) Transaction measures with the related persons

Transaction Measures with the Non-related Persons

The Board of Directors indicates "The Table of Approval Authority of Transaction Measures with Non-related Persons" with regard to the asset purchasing/selling/transferring (gain or disposal), purchasing of product/material and service to conduct the regular business, making an agreement of trade obligation and making a loan/guarantee contract which causes the financial obligation with the non-related person, to use as a corporate framework.

Transaction measures with the related persons

In case of a transaction with a person which may cause the conflict of interest, the Board of Directors has set up the policy to ensure the transparency and justice equally for all shareholders based on the following principles;

- The transaction shall gain the approval from the Directors and Executives with the careful, honest and transparent consideration, by which the interested person does not participate in the decision.
- The transaction is conducted with consideration of the Company's benefits like the transaction with the outsider.
- The Company establishes the monitoring and following-up system to ensure that the transaction is in compliance with the process.
- The transaction information is disclosed completely and correctly in the proper time.

The Company's policy on the transaction categorizes the transactions as follows;

- The regular business and regular business promotion between the Company and its subsidiaries / affiliates and Directors, Executives or the related person which gains the approval in principles from the Board of Directors shall be conducted by the Management, if the transaction has the trade agreement in the manner that the respectable person would agree with his counterpart in the same situation with the trade bargain leverage not influenced by the fact that he is the Director, Executive or the related person. The Board of Directors indicates "The Table of Approval Authority of Transaction Measures with the related persons" to use as a corporate framework.

The Company shall make the transaction summary report to propose in the meeting of the Audit Committee and the meeting of the Board of Directors every quarter.

- Other transactions aside from the above-mentioned regular business and regular business promotion such as the short-term rent or lease of immovable property, transaction in relation to the asset or service (for example the investment or sale of the financial investment in the business) or the offer or reception of the financial assistance.

The Company's policy specifies the approval authority in compliance with the principle of Stock Exchange of Thailand. The Board of Directors indicates "The Table of Approval Authority of Transaction Measures with the related persons" to use as a corporate framework. As the major transaction between the parties, Board of Directors decides that the policy must be considered and approved by the Board of Directors prior to entering into the transaction.

The Company shall make the transaction summary report to propose in the meeting of the Audit Committee and the meeting of the Board of Directors every quarter.

The Board of Directors shall comply with the Securities and Exchange Act B.E. 2535, regulations, notifications, orders or requirements of Stock Exchange of Thailand. Additionally, it shall comply with regulations regarding the related transaction and the gain / disposal of the key assets of the Company or its subsidiaries / affiliates, so that the transaction does not bring about the conflict of interest and cause the utmost benefits for all shareholders. In this regard, the Company shall disclose the details of transactions in the annual information declaration (Form 56-1), the Company's annual report and the notes to financial statement which shall be audited by the Company's auditors.

19.4 Company Secretary

Board of directors' meeting (13/2008) dated on October 27, 2008 approved appointment of Miss Chantra Jongjamreeseethong as Company Secretary, effective since October 27, 2008. Such person has education, knowledge including graduated accounting, experience and responsibility to do secretary job with aim to make things done in line with rules & regulations and corporate governance.

Scope of Authority of Company Secretary

1. Being the secretary of the Board of Directors. To coordinate the meetings of the Board of Directors. and the shareholders meeting of the company compliance with good corporate governance principles and regulatory compliance, Company regulations, Good practice and relevant laws such as the Securities and Exchange Act Public Limited Company Act, 1992.
2. To oversee the disclosure of information of the Company in compliance with the regulations of the Stock Exchange of Thailand, the Securities and Exchange Commission and other regulators associated.
3. Provide initial advice to the Board of Directors and corporate executives. To comply with the company regulations, Rules and Regulations of the Securities and Exchange Commission including the requirements of the Stock Exchange of Thailand. Including new regulatory compliance functions. Related to the company
4. Prepare and keep significant documents like director register, board of directors' meeting letter, board of directors' report, company's annual report, shareholders' meeting letter, shareholders' meeting report and conflict of interest report by directors and executives
5. Supervise board activities for the directors to perform their duties effectively and effectiveness, also make the most benefit to the company.
6. Coordinate the compliance of the Board of Directors and shareholders meeting.
7. Perform other duties assigned by the Board of Directors.

In addition, with focus on corporate governance, the Company sent Miss Chantira Jongjamreeseethong to take Company Secretary Program (28/2008) and Effective Minute Taking-EMT Course (12/2008) held by Thai Institute of Directors (IOD) and other courses for supporting to the Board of Directors and also related courses to support good corporate governance continuously.

19.5 Remuneration of Committee and Directors

19.5.1 Cash Remuneration

(1) Remuneration for Directors and Meeting

The Company has clear and transparent policy on remuneration for directors. Remuneration committee will consider and propose directors' remuneration to board of directors and then to shareholders' meeting for approval. Remuneration paid here is competitive compared to that with other listed companies in energy sector.

Policy: Remuneration Determination for all Committees

(Cited by "Policy: Determination on the Remuneration of All Committees", Rdited Date on 29 December 2016 and Reviewed Date on 25 December 2017)

"Remuneration determination policy for all committees" is prepared to serve as a framework and guideline in remuneration determination for each committee including senior executives. The remuneration determination criteria shall reflect the experience, duties and scope of role and responsibility of the committees. It shall be under the rate comparable to the prevailing practices o the same industry and/or the director remuneration survey, so that the rate and components of the remuneration can retain the required qualified committees.

Principles, consideration criteria and components of remuneration

1. Principles and consideration criteria

The Board of Directors assigns the Nomination and Remuneration Committee to propose the remuneration of all committees to the Board of Directors for their approval. Then, the proposal shall be considered in the shareholders' meeting for the approval under the following criteria;

- Role, scope, authority and responsibility of Board of Director and each committee.
- The collective and individual performance of the committees.
- The operational performance of the Company, based on the type and size of the Company's business.
- The remuneration survey, in comparison with other companies in the same industry.

2. Components of remuneration

To reflect the duties, responsibility and mission of the committees, the components of remuneration determination are composed of the followings;

- Meeting attendance fee
- Annual remuneration
- Bonus or other similar remunerations

3. Remuneration Determination Process

The Board of Directors sets up the remuneration determination process to comply with the principle of good governance based on transparency and accountability. The consideration process is as follows;

- 1) The Nomination and Remuneration Committee considers and determine the remuneration in accordance with the principle.
- 2) The Nomination and Remuneration Committee proposes the remuneration rate to the Board of Directors for the approval.
- 3) The Board of Directors approves and proposes the remuneration rate to the shareholders' meeting for the approval.
- 4) The shareholders' meeting approves the remuneration rate.

Remuneration for the Board of Directors, sub-committee both the Executive Directors and Non-Executive Directors comprises of Remuneration Fee, Yearly Remuneration Fee and Bonus Remuneration Fee which approved by the Board of Directors' Meeting No. 2/2560 held on February 22, 2017, and approved by the Annual General Meeting of Shareholders 2017 on April 21, 2017, details are as follows:

Remuneration

Position	Board of Directors	Audit Committee	Good Corporate Governance Committee	Risk Management	Nomination and Remuneration Committee	Management Committee
1. Chairman	22,000	22,000	15,000	15,000	15,000	7,500
2. Member	18,000	18,000	12,000	12,000	12,000	5,000
3. Secretary of Committee	6,000	6,000	6,000	6,000	6,000	-

Remark : In case the independent directors have been appointed as Chairman of the Board. To be eligible for payment of meeting fee only one location in each of the top position.

Yearly Remuneration Fee

Position	Board of Directors	Audit Committee	Good Corporate Governance		Nomination and Remuneration	
			Governance Committee	Risk Management	Committee	Management Committee
1. Chairman	750,000	240,000	100,000	100,000	100,000	500,000
2. Member	300,000	200,000	100,000	100,000	100,000	200,000
3. Secretary of Committee	50,000	50,000	25,000	25,000	25,000	-
4. Company Secretary	100,000	-	-	-	-	-

Remark : In case the independent directors have been appointed as Chairman of the Board., to be eligible for payment of annual compensation only one location in each of the top position.

Bonus Remuneration Fee

Position	Board of Directors	Audit Committee	Good Corporate Governance Committee	Risk Management Committee	Nomination & Remuneration Committee	Executive Committee
1. Chairman of the Board	Criteria of Bonus Payment					
2. CEO	1. Not exceeding 1 percent of total comprehensive income attributable to Equity holders of separated financial statement of the Company.					
3. Chairman of Any Committee	1.1 <u>Deduct</u> Gain from foreign exchange before tax					
<u>Except</u>	1.2 <u>Deduct</u> Gain from asset divestment before tax					
Chairman of the Board and CEO	1.3 <u>Deduct</u> Revenue or profit from special income before tax					
4. Managing Director	1.4 If director is in committee more than one committee, the bonus payment from the committee that receive the highest payment.					
5. Executive Directors	2. Calculation:					
6. Director of Any Committee	2.1 Fixed bonus payment in amount of THB 1,500,000 for Chairman of the Board of Director.					
<u>Except</u>	2.2 Total bonus of each committee					
Executive Directors	Total amount from No. 1 - Total amount from No. 2.1 is equal to balance of bonus which will be paid the Director by considering the number of attendance from meeting of each committee divided by total number of meeting from every committees as shown in formula as follows:					
$A = (\text{Total amount from No. 1} - \text{Total amount from No. 2.1}) \times \text{Number of attendance from meeting of each committee}$						
Total number of meeting from every committees						
2.3 Individual Bonus for each committee						
$\text{Individual Bonus} = \frac{\text{Total bonus of each committee (A)}}{\text{number of member in each committee}}$						

Remark: the maximum of the all compensation payment is set as follows:

1.	Chairman of the Board of Directors	Maximum Payment	THB	3,500,000
2.	CEO	Maximum Payment	THB	2,500,000
3.	Chairman of any committee	Maximum Payment	THB	1,500,000
	(Except: Chairman of the Board of Director and CEO)			
4.	Managing Director	Maximum Payment	THB	1,000,000
5.	Executive Directors	Maximum Payment	THB	800,000
6.	Director of Any Committee	Maximum Payment	THB	400,000
	(Except: Executives Director)			

And if a director holds more than one position. To pay from the calculation of the sum of all types of compensation. Both meeting allowance the annual compensation and bonuses. That must not exceed the ceiling rate or the maximum amount of each of the highest positions for which the director is located. If the director has more than one position that pay only from the ceiling of the highest position.

The limit for all types of compensation and all positions, total amount shall not more than 18,000,000 baht

In 2017, The Board of Directors and sub-committees have scheduled meetings throughout the year, usually on a quarterly which an annual meeting schedules are announced to all directors in advance and might have a special meeting as necessary. The agenda setting clear and sent notice of the meeting and the agenda for the Board of Directors at least 7 days, and the meeting prior to the Board of Directors have the adequate information before the meeting. Chairman of the Board of Directors made responsible for allocating sufficient time to present the document and information management is an important issue for discussion by the quarterly meeting, almost directors attended the meeting, unless urgent business. Also in February, 2017, the Board of Directors held a meeting between non-executive directors by having a wide open agenda to provide feedback on control management issues, risk management and other matters related to corporate governance, both inside and outside the organization in order to make the process transparent and fair, aiming at international standards.

For 2016 and 2017, the directors' remuneration totaled 7,264,000.00 Baht and 8,599,500.00, respectively. Details of the remuneration and attendance of each director are summarized as follows:

Summary of Compensation, Number of Meetings and the Number of Attendance of Each Board / Committee

In 2016 and 2017, the directors' remuneration totaled Baht 7,264,000.00 and Baht 8,599,500.00 respectively, details of remuneration and attendance of each director, summarized as follows:-

Total number of years in current tenure (December 31, 2017)								
No.	Name List	Starting Date Position	Board of Directors	Audit Committee	Risk Management Committee	Nomination and Remuneration Committee	Good Corporate Governance Committee	Executive Committee
Directors and sub-committees								
1.	Mr. Gunkul Dhurongpiyawut	August 10, 2009 ²⁾	8 years 5 months					
2.	Dr. Djitt Laowattana ¹⁾	August 18, 2014 ³⁾	3 years 5 months	3 years 5 months				
3.	Poi. Maj.Gen. Visit Sukrasap ¹⁾	August 10, 2009 ²⁾	8 years 5 months	8 years 5 months		8 years 5 months		
4.	Dr. Chongrak Ranueysong ¹⁾	July 3, 2015 ³⁾	2 years 6 months	2 years 6 months			2 years 6 months	
5.	Miss Sopacha Dhurongpiyawut	August 10, 2009 ²⁾	8 years 5 months		8 years 5 months			8 years 5 months
6.	Dr. Somboon Aueatchasai	June 9, 2010 ³⁾	7 years 7 months					7 years 7 months
7.	Miss Naeuechon Dhurongpiyawut	August 10, 2009 ²⁾	8 years 5 months					8 years 5 months
8.	Mrs. Areewan Chaloemdan	August 10, 2009 ²⁾	8 years 5 months					8 years 5 months
9.	Mr. Chaloepon Srichareon	August 10, 2009 ²⁾	8 years 5 months					8 years 5 months
10.	AVM.Dr.Pian Totarong ¹⁾	November 9, 2012		5 years 2 months				
11.	Mr. Somchai Trairataniptom ¹⁾	June 22, 2015 / February 25, 2013 ⁶⁾		2 years 7 months 3 years 2 months	4 years 11 months			
12.	Mr. Thitipong Techaratanayuenyong	November 12, 2014			5 years 2 months			
13.	Mr. Decha Chooligorn ¹⁾	November 9, 2012			2 years 2 months			
14.	Mr. Hathai Uthai ¹⁾	November 12, 2015			8 years 5 months			
15.	Mrs. Somluk Kanueghet	August 10, 2009				4 years 11 months		
16.	Mr. Phongthep Thitapan ¹⁾	February 25, 2013						
Directors resigned during 2017, receive compensation								
- No -								
Directors resigned during 2016, receive compensation								
- No -								

Summary of Compensation, Number of Meetings and the Number of Attendance of Each Board / Committee (continued)

Attendance of sub-committees																
The number of months Holding positions			Board of Directors		Audit Committee		Risk Management Committee		Nomination and Remuneration Committee		Good Corporate Governance Committee		Executive Committee ⁵⁾			
No.	Name List	2016 (Month)	2017 (Month)	2016 (9 Times)	2017 (9 Times)	2016 (5 Times)	2017 (6 Times)	2016 (6 Times)	2017 (4 Times)	2016 (4 Times)	2017 (2 Times)	2016 (6 Times)	2017 (4 Times)	2016 (30 Times)	2017 (22 Times)	
Directors and sub-committees																
1.	Mr. Gunkul Dhumrongpiyawut	12	12	9/9	8/9											
2.	Dr. Jitt Laowattana ¹⁾	12	12	9/9	9/9	5/5	6/6									
3.	Pol. Maj.Gen. Visit Sukarasep ¹⁾	12	12	9/9	8/9	5/5	6/6			4/4	2/2					
4.	Dr. Chongrak Rarueysong ¹⁾	12	12	9/9	9/9	5/5	6/6					6/6	4/4	30/30	22/22	
5.	Miss Sopacha Dhumrongpiyawut	12	12	9/9	9/9			6/6	4/4					30/30	22/22	
6.	Dr. Somboon Aueatchasi	12	12	9/9	9/9									30/30	22/22	
7.	Miss Naruechon Dhumrongpiyawut	12	12	9/9	9/9									30/30	22/22	
8.	Mrs. Areewan Chabemdan	12	12	9/9	9/9									30/30	22/22	
9.	Mr. Chalorpon Srichaoren	12	12	9/9	9/9									30/30	22/22	
10.	AVM.Dr. Pian Totarong ¹⁾	12	12				6/6	6/6	3/4							
11.	Mr. Somchai Trairatanapirom ¹⁾	12	12				6/6	6/6	4/4			6/6	4/4			
12.	Mr. Thilipong Techaratanyuenyong	12	12				6/6	6/6	4/4							
13.	Mr. Decha Chooligorn ¹⁾	12	12							4/4	2/2					
14.	Mr. Hathai Uthai ¹⁾	12	12							4/4	2/2					
15.	Mrs. Somluk Kanuenghet	12	12							4/4	2/2					
16.	Mr. Phongthep Thitapan ¹⁾	12	12									6/6	4/4			
Directors resigned during 2017, receive compensation																
- No -																
Directors resigned during 2016, receive compensation																
- No -																

Summary of Compensation, Number of Meetings and the Number of Attendance of Each Board / Committee (continued)

No.	Name List	Annual compensation of 2015 ⁴⁾		Annual compensation of 2016 ⁴⁾	
		Meeting allowance, Annual compensation, Bonus (if applicable)	Total Compensation	Meeting allowance, Annual compensation, Bonus (if applicable)	Total Compensation
		Board of Directors ³⁾	Sub-Committee	Board of Directors ³⁾	Sub-Committee
Directors and sub-committees					
1.	Mr. Gunkul Dhummongpiyawut	660,000.00	-	920,000.00	-
2.	Dr. Djitt Laowattana ¹⁾	353,000.00	340,000.00	459,000.00	368,000.00
3.	Pol. Maj.Gen. Visit Sukarasep ¹⁾	353,000.00	435,000.00	441,000.00	436,000.00
4.	Dr. Chongrak Rarueysong ¹⁾	353,000.00	460,000.00	459,000.00	463,500.00
5.	Miss Sopacha Dhummongpiyawut	353,000.00	625,000.00	459,000.00	653,500.00
6.	Dr. Somborn Aueatchasi	448,000.00	210,000.00	560,000.00	205,000.00
7.	Miss Naruechon Dhummongpiyawut	353,000.00	210,000.00	459,000.00	205,000.00
8.	Mrs. Areewan Chaberdan	353,000.00	210,000.00	459,000.00	205,000.00
9.	Mr. Chalorpon Siricharen	353,000.00	210,000.00	459,000.00	205,000.00
10.	AVM.Dr.Pan Totarong ¹⁾	-	175,000.00	-	142,500.00
11.	Mr. Somchai Trairatanaprom ¹⁾	-	220,000.00	-	292,000.00
12.	Mr. Thitipong Techaratanyueng	-	165,000.00	-	194,000.00
13.	Mr. Decha Chooligorn ¹⁾	-	90,000.00	-	124,000.00
14.	Mr. Hathai Uthai ¹⁾	-	90,000.00	-	124,000.00
15.	Mrs. Somluk Kanuenghet	-	135,000.00	-	161,000.00
16.	Mr. Phongthep Thitapan ¹⁾	-	110,000.00	-	146,000.00
Directors resigned during 2017, receive compensation					
-	No -				
Directors resigned during 2016, receive compensation					
-	No -	3,579,000.00	3,685,000.00	4,675,000.00	3,924,500.00
				7,264,000.00	8,599,500.00

¹⁾ Being an independent director / director who is not affiliated with or is an executive of any company.

²⁾ On August 10, 2009, GUNKUL transformed into a Public Company. The date was registered with the Department of Business Development for the first Board of Directors to be the Company's director.

³⁾ The date of being registered as director of the company shall be reported to the Department of Business Development.

⁴⁾ The Company will pay annual compensation once a year. The annual remuneration for 2016 will be paid in 2017 and for annual remuneration in 2017, the Company will pay all in 2018. The annual compensation that is included in the "Compensation" table is the annual compensation for the year 2017 paid in 2018.

⁵⁾ The annual meeting allowance and annual remuneration that the Executive Committee receives from attending the meeting and holding the position of Executive Director in 2016, 5 Executive Directors and Executive Directors who are Executive Directors do not wish to receive the meeting allowance totaling 770,000.00 Baht. In 2017, 5 executive committee members do not wish to receive the meeting allowance totaling 577,500.00 Baht

⁶⁾ The date of holding a position of the Good Corporate Governance Committee and a position of the Risk Management Committee, respectively.

(2) Remuneration for Management Executive

In 2016, the Company had 22 executives, 5 were executives and directors and 17 were executives only.

In 2017, the Company had 27 executives, 5 were executives and directors and 22 were executives only. Remuneration payment is as follow;

(Unit : Baht)

Remuneration to management	Executives and Directors				Executive Only			
	Year 2016		Year 2017		Year 2016		Year 2017	
	No. of persons	Remuneration	No. of persons	Remuneration	No. of persons	Remuneration	No. of persons	Remuneration
Total salary	5	23,014,412.29	5	20,347,500.00	17	30,703,195.17	22	35,500,430.00
Total bonus	5	7,207,000.00	5	8,966,554.93	17	16,246,607.50	22	18,397,114.61
Total	5	30,221,412.29	5	29,314,054.93	17	46,949,802.67	22	53,897,544.61

19.5.2 Non-cash remuneration

- None -

19.6 Personnel

- Total employees of the Company and subsidiaries as of December 31, 2017. The total number of employees is 728 persons, classified by type and employee level, as of 2014, 2015, 2016, and 2017, details are as follow;

Number of Employees		Number of Employees Each Year			
		Y2014	Y2015	Y2016	Y2017
Total Employees		552	635	709	728
Monthly employees		415	526	583	598
Daily employees		137	109	126	130
Number of Employees Classified by Employment Category					
Permanent Employees		482	553	599	611
Contract Employees		70	82	110	117
Number of Employees Classified by Sex					
Male		331	390	433	448
Female		221	245	276	280

Number of Employees		Number of Employees Each Year			
		Y2014	Y2015	Y2016	Y2017
Number of Employees Classified by Employment Level					
	Executive	17	25	25	26
	Manager	34	48	56	53
	Head Dept./Unit	74	77	78	75
	Starter-Middle level Employee	195	291	312	345
	Operational Employee	232	194	238	229

2. Employee remuneration

- In 2017, cash remuneration of employees of the Company and subsidiaries comprised of salary, bonus and provident fund with combined amount of 306,407,179.12 baht

Unit : Baht	Year 2016	Year 2017
Salary	262,180,555.10	238,349,317.58
Bonus	24,511,401.16	57,332,840.64
Provident Fund	9,340,319.19	10,725,020.90
Total	296,032,275.45	306,407,179.12

- As the policy of remuneration for employees, the company has a policy to pay compensation in accordance with the results of operations each year, also consider the performance evaluation capabilities (Competency) of individual employees and performance (KPIs) of each segment to be consistent with the results of operations for both the short and long term and also the provident fund has been set up since 2008 to provide long-term employee benefits.
3. Labor dispute over the past three years
- None -
4. Personnel development policy

The Company has policy to develop staff with aim to support them to grow in the organization and require staff to work happily so they can create productivity which is good to company for sustainable growth.

The Company sets human resources development plan by using competency and KPIs as data to set training course to improve working skill. Followings are training courses provided to various levels of staff;

- Management Company wants management to clearly understand corporate management, vision, and strategy, so they can set up integrated corporate strategy for company resulting in competitive advantage by providing training courses on planning, strategy and management for top executives.
- Dept. Head Company wants to create skill on preliminary management and job responsibility so head of department can fulfill corporate strategic plan and use this skill to manage controlee. Training courses involve leadership, teamwork and basic management skill to head of department so they can apply to use with employees.
- Employee Company wants employees to have knowledge and understand their roles and responsibility so they can improve their performance. Training courses focus on operating skill and working environment like primary work, presentation suggestion and rules and regulations.

The company's policy of continuously development for employees' knowledge and capability is main mission of corporation to stand up for increasing their skill and to be professional in their jobs.

On management structure policy, the Company group has policy to promote on annual basis for capable employees in accordance with career path policy. In addition, the Company group also supports employees to participate in sustainable quality development like expressing opinions to develop work and having skill test.

For directors and top executives of the Company and the Group, The Committees and the Company continuously support them to participate training courses held by Thai Institute of Directors (IOD) and others to improve understanding of roles, responsibility and skill in management as being company directors and executives that continuously knowledge will be most useful for the company's improving.

20.

Details of the Board of Directors and Executives

20.1 Details of Directors and Executives

1. Mr. Gunkul Dhumrongpiyawut

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Director with Authority to sign on behalf of the Company (10th August 2009) ⁴⁾ (8 Years 5 months)
(Non-Executive Director) / Chairman of the Board of Directors

Age (Year) 63

Educational Qualifications

- The Honorary Doctor of Art, Rajamangala University of Technology Phra Nakhon in 2016
- Honorary Master of Engineering, Western University in 2010
- Leader Program 15/2012, Capital Market Academy
- Director Certification Program (DCP) 111/2008, Thai Institute of Director (IOD)
- Director Accreditation Program (DAP) 70/2008, Thai Institute of Director (IOD)
- Managing Finance for Business Owners by Peter Ho
- Secrets to Doubling Your Sales, Productivity & Profits Programme

Training in 2017 - Train the Trainer of Anti-Corruption

Training in 2018 - The Rule of Law for Democracy (RLD. 6) Constitutional Court

Share Holding Percentage ³⁾ (%) 4.173

Relationship Husband of Miss Sopacha Dhumrongpiyawut and Father of Miss Naruechon Dhumrongpiyawut

Working Experience during the Past 5 Years

2012 - Present	Chairman of the Board of Directors	Gunkul Engineering Public Company Limited
2009 - Present	Director	Gunkul Engineering Public Company Limited
1982 - 2012	Chief Executive Officer	Gunkul Engineering Public Company Limited
2017 - Present	Director	Great Miracle Asset Group ⁶⁾
1991 - Present	Director	Gunkul Group Company Limited
1996 - Present	Director	Gunkul Marine Line Company Limited
2000 - Present	Director	Gunkul Engineering (2000) Company Limited
1994 - Present	Director	G.M. Supply and Construction Company Limited
2015 - 2017	Director	Siam Gunkul Power Company Limited
2009 - 2013	Director	Gunkul Powergen Company Limited

2. Dr. Djitt Laowattana

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Director (Independent Director) (18th August 2014) ⁵⁾ (3 Years 5 months) / Member of the Audit Committee (18th August 2014) ⁵⁾ (3 Years 5 months) / Chairman of the Audit Committee

Age (Year) 56

Educational Qualifications

- Bachelor of Engineering (Hons) King Mongkut's, University of Technology Thonburi
- Precision Mechanics Kyoto University Japan
- Ph.D., Carnegie Mellon University, USA.,
(With two US patents: (1) Curve Controlling Apparatus for Endoscopic Conduits (2) A Mechanism for Assembly of Non-Axisymmetric Rigid Parts)
- Certificate in Management of Technology and Innovation, Massachusetts Institute of Technology (MIT), USA.
- Finance for Non-Finance Director, Thai Institute of Director (IOD)
- Understanding the Fundamental of Finance Statement, Thai Institute of Director (IOD)
- Director Certification Program (DCP) 93/2007, Thai Institute of Director (IOD)
- Roles of Chairman Program 19/2008, Thai Institute of Director (IOD)
- Audit Committee Program 29/2009, Thai Institute of Director (IOD)
- Monitoring the System of Internal and Risk Management, MIR 7/2009, Thai Institute of Director (IOD)
- Monitoring Fraud Risk Management, MFM 1/2009, Thai Institute of Director (IOD)
- Monitoring Financial Reporting, MFR 9/2009, Thai Institute of Director (IOD)
- Monitoring Internal Audit Function, MIA 7/2009, Thai Institute of Director (IOD)
- Regulatory Skills for Directors and Senior Management of Enterprises and Public Organizations, 3/2010, Public Director Institute (PDI)
- Financial Institutions Governance Program, FGP 3/2011, Thai Institute of Director (IOD)
- Leader Program 15/2012, Capital Market Academy

Training in 2017 - AC Hot Update Seminar for the Audit Committee

Training in 2018 -

Share Holding Percentage ³⁾ (%) 0.023

Relationship None

2. Dr. Djitt Laowattana (continued)

Working Experience during the Past 5 Years

2015 - Present	Chairman of the Audit Committee	Gunkul Engineering Public Company Limited
2014 - Present	Director (Independent Director)	Gunkul Engineering Public Company Limited
2014 - Present	Member of the Audit Committee	Gunkul Engineering Public Company Limited
2014 - 2015	Chairman of the Good Corporate Governance Committee	Gunkul Engineering Public Company Limited
2012 - Present	Technology Consultant	Siam Commercial Bank Public Company Limited
2010 - Present	Director	Thai Engineering Company Limited
2005 - Present	Confucius scholars the "brainchild".	Thai TV3
2004 - Present	Consultant	Robotics Society Thailand
2002 - Present	Chairman of the Technical Committee	ABU RoboCon (Thailand)
2010 - 2011	Company Director and Audit Committee	TOT Public Company Limited
2009 - 2011	Director, Risk Management Director And Executive Director of Information Technology.	Government Saving Bank
2008 - 2009	Assistant to Director	National Electronics and Computer Technology Center
2008 - 2011	Director of the hard disk drive.	National Science and Technology Development Agency
2008 - 2011	Director and Member of Audit Committee	KTB Computer Services Company Limited
2007 - 2008	Director / Chairman of the Finance Committee	TOT Public Company Limited
2007 - 2008	Director	ADC Company Limited
2007 - 2008	Consultant	Minister of Information and Communications Technology.
2006 - 2007	Director	Thai National Grid Center
2006 - 2012	Director	National Research Council of Thailand (NRCT)
2006 - 2007	Director	Bangkok Crstal Company Limited

3. Pol.Maj.Gen. Visit Sukarasep

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Director (Independent Director) (10th August 2009) ⁴⁾ (8 Years 5 months) / Member of the Audit Committee (10th August 2009) ⁴⁾ (8 Years 5 months) / Chairman of the Nomination and Remuneration Committee

Age (Year) 62

Educational Qualifications

- Bachelor Degree in Public Administration, Royal Police Dadet Academy
- Management Course for Higher Rank Police 28
- Course for Superintendent 31
- Director Accreditation Program (DAP) 78/2009, Thai Institute of Director (IOD)

Training in 2017

- Nomination Committee Best Practice Guideline Course
- AC Hot Update Seminar for the Audit Committee

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2012 – Present	Chairman of the Nomination and Remuneration Committee	Gunkul Engineering Public Company Limited
2009 – Present	Director (Independent Director)	Gunkul Engineering Public Company Limited
2009 – Present	Member of the Audit Committee	Gunkul Engineering Public Company Limited
2014 – 2015	Commander	Chumporn Provincial Police Station, Chumporn Province
2013 – 2014	Commander	Ranong Provincial Police Station, Ranong Province
2013 – 2013	Commander	Administrative and Civil Affair Division, Royal Thai Police
2006 – 2012	Deputy Commander	Administrative and Civil Affair Division, Royal Thai Police
2005 – 2006	Superintendent	Administrative and Civil Affair Division, Royal Thai Police
2000 – 2005	Superintendent (Disciplinary Development)	Disciplinary Division, Royal Thai Police
1998 – 2000	Deputy Superintendent (Penalty Solicitor)	Disciplinary Division, Royal Thai Police
1992 – 1994	Chief of Police	Nongyasai District Provincial Police Station, Supanburi Province

4. Dr. Chongrak Rarueysong

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Director (Independent Director) (3rd July 2015) ⁵⁾ (2 Years 6 months) /

Member of the Audit Committee (3rd July 2015) ⁵⁾ (2 Years 6 months) /

Chairman of the Good Corporate Governance Committee (3rd July 2015) ⁵⁾ (2 Years 6 months)

Age (Year) 64

Educational Qualifications

- Ph.D., Economics, University of Illinois at Urbana - Champaign, U.S.A.
- Bachelor of Economics (Hons), Thammasat University
- Economic Statistics, United Nations
- Public Finance, International Monetary Fund
- Securities Market, U.S. Securities and Exchange Commission
- Directors Certification Program (DCP) 14/2002, Thai Institute of Director (IOD)
- Effective Audit Committee 4/2002, Thai Institute of Director (IOD)
- Japan Capital Market, Japan Securities Dealers Association

Training in 2017 - AC Hot Update Seminar for the Audit Committee

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2016 - Present	Chief Executive Group	Apple Wealth Securities Public Company Limited
2015 - Present	Director (Independent Director)	Gunkul Engineering Public Company Limited
2015 - Present	Member of the Audit Committee	Gunkul Engineering Public Company Limited
2015 - Present	Chairman of the Good Corporate Governance Committee	Gunkul Engineering Public Company Limited
2004 - 2014	Director and Chairman of the Audit Committee	KTB Computer Services Company Limited
2002 - 2003	Director and Member of the Audit Committee	PTT Public Company Limited
2001 - 2002	Director	Petroleum Authority of Thailand
2001 - 2007	Director	Thai Bond Dealing Centre
1998 - 2007	Director	Thailand Securities Institute
1998 - 2007	Director	TRIS Corporation Limited

4. Dr. Chongrak Rarueysong (continued)

1998 - 2009	Director and Executive Director	Thai Securities Finance Company Limited
1996 - 2012	President	Association of Thai Securities Companies
1996 - 2012	President	ASCO Training Institute
1995 - 1996	Managing Director	Vachira Dhanadhun Securities Company Limited
1992 - 1995	Director of Research and Development	The Stock Exchange of Thailand
1991 - 1992	Assistant Vice President, Research Office	Dhana Siam Finance and Securities Public Company Limited
1983 - 1991	Senior Specialist	Loan Policy Division and Fiscal & Tax Policy Division Ministry of Finance

5. Miss Sopacha Dhumrongpiyawut

Position (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Director with Authority to sign on behalf of the Company (10th August 2009)⁴⁾ (8 Years 5 months) /

Executive Director (10th August 2009)⁴⁾ (8 Years 5 months) / Chief Executive Officer /

Risk Management Committee (10th August 2009)⁴⁾ (8 Years 5 months)

Age (Year) 51

Educational Qualifications

- Bachelor of Nurse, Srinakharinwirot University
- Advanced Security Management Program : ASMP 6/ 2014, The Association National Defence College of Thailand under the Royal Patronage of His Majesty the King
- Leader Program 18/2014, Capital Market Academy
- Director Certification Program (DCP) 111/2008, Thai Institute of Director (IOD)
- Director Accreditation Program (DAP) 70/2008, Thai Institute of Director (IOD)
- Managing Finance for Business Owners by Peter Ho
- Secrets to Doubling Your Sales, Productivity & Profits
- Effective Senior Manager course
- Role of Chairman 21/2009, Thai Institute of Director (IOD)

Training in 2017

- Train the Trainer of Anti-Corruption
- Ultra Wealth Course Class 3 (UW3)
The Ultra Wealth Group Company Limited
- TNDC Class 60 of 2017-2018
Thailand National Defence College
- AC Hot Update Seminar for the Audit Committee

Training in 2018 -

Share Holding Percentage³⁾ (%) None

Relationship Wife of Mr.Gunkul Dhumrongpiyawut

Working Experience during the Past 5 Years

2012 - Present	Chief Executive Officer	Gunkul Engineering Public Company Limited
2012 - Present	Member of the Risk Management Committee	Gunkul Engineering Public Company Limited
2008 - Present	Director / Executive Director	Gunkul Engineering Public Company Limited
1998 - 2012	Managing Director	Gunkul Engineering Public Company Limited
2015 - Present	Director	Gunkul Solar Power 3 Company Limited
2015 - Present	Director	Gunkul Solar Power 4 Company Limited
2015 - Present	Director	Gunkul Solar Power 5 Company Limited

5. Miss Sopacha Dhumrongpiyawut (continued)

2015 - Present	Director	Korat Wind Energy Company Limited
2015 - Present	Director	Siam Future Company Limited
2015 - Present	Director	Happy Green 2558 Company Limited
2015 - Present	Director	Tech-Green Company Limited
2015 - Present	Director	Thong Lo 9 Company Limited
2015 - Present	Director	Entrity Sam Company Limited
2014 - Present	Director	Gunkul Solar Community Company Limited
2013 - Present	Director	NK Power Sola Company Limited
2013 - 2017	Director	Siam Wind Energy Company Limited
2013 - 2017	Director	Gunkul Tech Company Limited
2003 - Present	Director	Gunkul Solar Power1 Company Limited
2013 - Present	Director	Gunkul Solar Power2 Company Limited
2013 - Present	Director	Siam Gunkul Solar Energy Company Limited
2013 - Present	Director	Gunkul Solar Roof 1 Company Limited
2013 - Present	Director	Gunkul Training Center Company Limited
2013 - Present	Director	Gunkul Power Development Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 1 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 2 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 3 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 4 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 5 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 6 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 8 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 9 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 10 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 16 Company Limited
2013 - Present	Director	WHA Gunkul Green Solar Roof 17 Company Limited
2010 - Present	Director	G-Power Source Company Limited
2008 - Present	Director	G.K.Assembly Company Limited
2002 - Present	Director	Gunkul Trading and Agency Company Limited
2000 - Present	Director	G.K.Power Products Company Limited
2013 - Present	Director	Gunkul Myanmar Central Power 1 Pte.Ltd.
2009 - 2012	Director	Gunkul Chubu Powergen Company Limited
2017 - Present	Director	Gunkul Group Company Limited
2017 - Present	Director	Great Miracle Asset Group ⁶⁾

6. Dr. Somboon Aueatchasai

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Director with Authority to sign on behalf of the Company (9th June 2010) ⁵⁾ (7 Years 7 months) / Executive Director (10th August 2009) ⁴⁾ (8 Years 5 months) /

Secretary to the Board of Directors (10th August 2009) ⁴⁾ (7 Years 7 months) / Managing Director

Age (Year) 47

- Educational Qualifications**
- Doctor's Degree, Industrial Business Administration, King Mongkut's Institute of Technology Ladkrabang
 - Master in Managerial Accounting, Thammasat University
 - Diploma in Auditing, Thammasat University
 - Bachelor in Accounting, Rajamangala University of Technology Phra Nakhon
 - Advanced Security Management Program : ASMP 7/ 2015, The Association National Defence College of Thailand under the Royal Patronage of His Majesty the King
 - Capital Market Leader Program, 1/2014, The Securities and Exchange Commission
 - Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives No.17, King Prajadhipok's Institute, 2013
 - Public Economics Management for Executives No.10, King Prajadhipok's Institute, 2012
 - Director Certification Program (DCP) 139/2011, Thai Institute of Director (IOD)
 - Director Accreditation Program (DAP) 84/2010, Thai Institute of Director (IOD)
 - Certificate Program in International Tax Law, Class 1, Thai Bar Association
 - Diploma in Certified Internal Auditor, Class 1, Chulalongkorn University and The Institute of Internal Auditors of Thailand
 - Tax Auditor Registration No. 1, Department of Revenue, Ministry of Finance
 - Outstanding Alumni (Doctoral Degree) by Administration and Management College King Mongkut's Institute of Technology Ladkrabang
 - Outstanding Alumni, Rajamangala University of Technology Phra Nakhon
 - President of the Tax Auditor Association of Thailand
- Training in 2016**
- Leader Program 23, Capital Market Academy, The Stock Exchange of Thailand
- Training in 2017**
- Train the Trainer of Anti-Corruption
 - Top Executive Program in Commerce and Trade Class 10 (TEPCoT 10), University of the Thai Chamber of Commerce

6. Dr. Somboon Aueatchasai (continued)

- Intermediate Certificate Courses - Good Governance for Medical Executives Class 6 (IGM6)
The Medical Council together with King Prajadhipok's Institute

Training in 2018 -

Share Holding Percentage ³⁾ (%) 0.377

Relationship None

Working Experience during the Past 5 Years

2012 - Present	Managing Director	Gunkul Engineering Public Company Limited
2010 - Present	Director	Gunkul Engineering Public Company Limited
2009 - Present	Secretary of the Board of Directors / Executive Director	Gunkul Engineering Public Company Limited
2010 - 2012	Deputy Managing Director	Gunkul Engineering Public Company Limited
2007 - 2010	Assistant Managing Director, Business Support	Gunkul Engineering Public Company Limited
2015 - Present	Director	Korat Wind Energy Company Limited
2015 - Present	Director	Infinite Alternative Energy Company Limited
2015 - Present	Director	Gio Bio Energy Company Limited
2015 - Present	Director	Outgrow A Company Limited
2015 - Present	Director	Outgrow B Company Limited
2015 - Present	Director	Outgrow D Company Limited
2015 - Present	Director	Outgrow E Company Limited
2015 - Present	Director	Outgrow Wood Supply A Company Limited
2015 - Present	Director	Outgrow Wood Supply B Company Limited
2014 - Present	Director	Gunkul Solar Community Company Limited
2013 - Present	Director	NK Power Sola Company Limited
2013 - 2017	Director	Siam Wind Energy Company Limited
2013 - Present	Director	Gunkul Solar Roof 1 Company Limited
2013 - Present	Director	Gunkul Training Center Company Limited
2013 - Present	Director	Gunkul Power Development Company Limited
2013 - 2017	Director	Gunkul Tech Company Limited
2012 - Present	Director	Wind Energy Development Company Limited
2011 - Present	Director	G-Power Source Company Limited

6. Dr. Somboon Aueatchasai (continued)

2009 - Present	Director	Gunkul Chubu Powergen Company Limited
2015 - Present	Director	Gunkul LED Lighting Company Limited
2015 - Present	Director	Eco Thai Energy Company Limited
2016 - Present	Director	Gunkul Bio Energy Company Limited
2008 - Present	Director	Seangunithai LPG Company Limited
2014 - Present	Lay Judge	The Prachuapkhirikhan Juvenile and Family Court
2016 - Present	Advisor to the Sub-Commission on Alternative Energy Education	National Legislative Assembly Committee 1(8)/ 2016
2015 - Present	Advisor to the Sub-Commission on Propagation, Renewable Energy and Energy Conservation	National Reform Steering Assembly
	Specialist members of the Council of Propagation, Renewable Energy and Energy Conservation	National Reform Steering Assembly
2015 - Present	Advisor	Audit Association of Thailand
2016 - Present	Highly qualified director of Business Administration Faculty and a Special Instructor	Faculty of Business Administration, Rajamangala University of Technology Phra Nakhon
2014 - 2015	Former expert of the Member of the National Reform Council	National Reform Steering Assembly
2014	Former expert of the Senator	Senator

7. Miss Naruechon Dhumrongpiyawut

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Director with Authority to sign on behalf of the Company (10th August 2009)⁴⁾ (8 Years 5 months) / Executive Director (10th August 2009) ⁴⁾ (8 Years 5 months) / Assistant Managing Director, Business Development and Strategic Planning / Senior Vice President, Logistics

Age (Year) 34

Educational Qualifications

- Master of Business Administration, Boston University U.S.A.
- Master of Management, Harvard University U.S.A.
- Bachelor of Engineering, Chulalongkorn University
- Director Accreditation Program (DAP) 70/2008, Thai Institute of Director (IOD)
- Financial Advisor Licence 2013, Investment Banking Club Association of Thai Securities Company

Training in 2017

- Train the Trainer of Anti-Corruption
- Thailand Energy for the New Generation of Executives Course Class 4, Thailand Energy Academy

Training in 2018 -

Share Holding Percentage ³⁾ (%) 0.005

Relationship Daughter of Mr.Gunkul Dhumrongpiyawut

Working Experience during the Past 5 Years

2016 - Present	Assistant Managing Director, Business Development and Strategic Planning	Gunkul Engineering Public Company Limited
2016 - Present	Senior Vice President, Logistics	Gunkul Engineering Public Company Limited
2012 - 2016	Senior Vice President, Strategic Planning and Investment	Gunkul Engineering Public Company Limited
2008 - Present	Director/ Executive Director	Gunkul Engineering Public Company Limited
2017 - Present	Director	BMP Solar Company Limited
2015 - Present	Director	Infinite Alternative Energy Company Limited
2015 - Present	Director	Rangngen Solution Company Limited
2015 - Present	Director	Gio Bio Energy Company Limited
2015 - Present	Director	Outgrow A Company Limited
2015 - Present	Director	Outgrow B Company Limited

7. Miss Naruechon Dhumrongpiyawut (continued)

2015 - Present	Director	Outgrow D Company Limited
2015 - Present	Director	Outgrow E Company Limited
2015 - Present	Director	Outgrow Wood Supply A Company Limited
2015 - Present	Director	Outgrow Wood Supply B Company Limited
2015 - Present	Director	Eco Thai Energy Company Limited
2015 - Present	Director	Siam Future Company Limited
2015 - Present	Director	Happy Green 2558 Company Limited
2015 - Present	Director	Tech-Green Company Limited
2015 - Present	Director	Thong Lo 9 Company Limited
2015 - Present	Director	Entrity Sam Company Limited
2014 - Present	Director	Gunkul LED Lighting Company Limited
2014 - Present	Director	Greenovation Power Company Limited
2014 - Present	Director	Gunkul Solar Community Company Limited
2013 - Present	Director	Gunkul Investment (Singapore) Pte., Ltd.
2013 - Present	Director	Gunkul Myanmar Power (Hlawga) Pte., Ltd.
2013 - Present	Director	Gunkul Myanmar Central Power 1 Co., Ltd.
2012 - Present	Director	Wind Energy Development Company Limited
2017 - Present	Director	Gunkul Group Company Limited
2017 - Present	Director	Great Miracle Asset Group 6)
2004 - Present	Director	Noppakun Company Limited
2011 - 2012	Assistant Vice President	Finansa Securities Company Limited
2010 - 2011	Senior Associate	Kasikorn Securities Public Company Limited

8. Mrs. Areewan Chaloeudan

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Director with Authority to sign on behalf of the Company (10th August 2009) ⁴⁾ (8 Years 5 months) / Executive Director (10th August 2009) ⁴⁾ (8 Years 5 months) / Senior Vice President, Factory

Age (Year) 48

Educational Qualifications

- Bachelor's Degree in Accounting, Dhurakij Bundit University
- Director Accreditation Program (DAP) 70/2008, Thai Institute of Director (IOD)
- Effective Senior Manager Course

Training in 2016

- Superior Executive Program for Advanced Management Gen. 1
Rajamangala University of Technology Phra Nakhon
- Pioneering Leadership Training Program, Canaan Farmers School, Korea
- Implementation of Sufficiency Economy, Ministry of Industry TIS 99

Training in 2017

- Train the Trainer of Anti-Corruption
- Public Administration Economy for Executives Course, Class 15 King Prajadhipok's Institute

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2009 - Present	Director / Executive Director	Gunkul Engineering Public Company Limited
2010 - Present	Senior Vice President, Factory	Gunkul Engineering Public Company Limited
2009 - Present	Director	G.K. Assembly Company Limited
2009 - Present	Director	G.K. Power Products Company Limited
2008 - 2010	Assistant General Manager, Logistics	Gunkul Engineering Public Company Limited
2007 - 2008	Assistant General Manager, Factory	G.K. Power Products Company Limited

9. Mr. Chaloepon Sricharoen

Position (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Director with Authority to sign on behalf of the Company (10th August 2009)⁴⁾ (8 Years 5 months) / Executive Director (10th August 2009)⁴⁾ (8 Years 5 months) / Vice President, Sales and Marketing

Age (Year) 48

Educational Qualifications

- Bachelor of Arts, Ramkhamhaeng University
- Public Economics Management for Executives No.12, King Prajadhipok's Institute, 2014
- Director Accreditation Program (DAP) 70/2008, Thai Institute of Director (IOD)
- Effective Senior Manager Course
- Managing Finance for Business Owners by Peter Ho

Training in 2016

- Advanced Certificate Course in Public Administration and Law for Executives Gen.15 King Prajadhipok's Institute
- Cautions for Directors to Prevent Legal Risks, Responsibility of Directors according to Civil and Criminal Law, SET and SEC

Training in 2017

- Train the Trainer of Anti-Corruption
- Leadership Succession Program (LPS), Class 8 The Institute of Research and Development for Public Enterprises (IRDP)

Training in 2018 -

Share Holding Percentage³⁾ (%) None

Relationship Brother of Miss Sopacha Dhumrongpiyawut

Working Experience during the Past 5 Years

2008 - Present	Director / Executive Director	Gunkul Engineering Public Company Limited
2014 - Present	Vice President, Sales and Marketing	Gunkul Engineering Public Company Limited
2010 - Present	Director	K.N.P. Supply Company Limited
2007 - 2014	Manager, Government Sales	Gunkul Engineering Public Company Limited
2006 - 2007	Manager, Office of Managing Director Department	Gunkul Engineering Public Company Limited
2003 - 2005	Manager, Business Development	Gunkul Engineering Public Company Limited
2001 - 2003	Assistant Manager, International Department	Gunkul Engineering Public Company Limited

10. AVM.Dr.Pian Totarong

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Chairman of the Risk Management Committee

(Independent Committee) (9th November 2012) (5 Years 2 months)

Age (Year) 63

Educational Qualifications

- Ph.D.in Electrical Engineering, University of Pittsburgh, USA. (Supreme Command HQ Scholarship)
- M.S. in Electrical Engineering, Ohio University, USA. (Supreme Command HQ Scholarship)
- B.Sc. (Honours) in Physics, Mahidol University (Ministry of Defence Scholarship)
- Air War College, Royal Thai Air Force, Class No. 31
- National Defence College, Class No. 48
- Director Certification Program (DCP 120/2009), Thailand Institute of Director (IOD)
- Certificate of Successful Formulation & Execution of Strategy Course (SFE), Class 11/2010 Thai Institute of Director (IOD)
- Advanced Defence Management, Class No. 1, Association of National Defence College

Training in 2013 - Quality Systems Assessment Program ISO/IEC 17025, Office of Industrial Standards

Training in 2014 - Technical Assessment Program, Professional Qualification Institute (Public Organization)

Training in 2015 - Human Resources Certification Course ISO/ IEC 17024, Management System Certification Institute

Training in 2017 -

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2013 - Present	Chairman of the Risk Management Committee	Gunkul Engineering Public Company Limited
2016 - Present	Laboratory Consultant	Ministry of Industry and Trade - Lao PDR
2014 - 2015	Metrology Center Consultant	Department of Standardization and Metrology - Lao PDR
2012 - 2013	Member of The Risk Management Committee	Gunkul Engineering Public Company Limited

10. AVM.Dr.Pian Totarong (continued)

2012 - 2013	Advisor (Quality System Development)	Food and Drug Quality Control Center, Ministry of Public Health, Lao PDR
2003 - 2011	Director of National Institute of Metrology (Thailand)	Ministry of Science and Technology
2001 - 2003	Director of Science & Technology R&D Division	Military R&D Center, Supreme Command HQ
1997 - 2001	Director of Communication & Electronic R&D Division	Military R&D Center, Supreme Command HQ
1993 - 1997	Deputy Director of Communication & Electronic R&D Division	Military R&D Center, Supreme Command HQ
1980 - 1993	Researcher (Communication Systems and Electronic Warfare Systems)	Military R&D Center, Supreme Command HQ

Experience as Director (domestic)

2015 - Present	Director, Board of National Standards Committee.	Ministry of industry
2015 - Present	Director, Board of Appeal Committee	Central Bureau of Weights and Measures
2015 - Present	Chairman of the Skill Standards Committee, Calibration technician	Department of Skill Development, Ministry of Labour
2004 - Present	Director, Metrology Association of Thailand	Metrology Association of Thailand
2003 - 2011	Director and secretary of National Metrology Board	Ministry of Science and Technology

Experience as a System Development Consultant ISO/IEC 17025

2017 - 2018	Agricultural and Food Testing Center Champasak University, Lao PDR
2016 - 2017	Calibration Laboratory - Oishi co., Ltd.
2015 - 2016	Transformer Testing Laboratory - Thai Maxwell electric co., Ltd.
2014 - 2015	Metrology center, Department of Standardization and Metrology - Lao PDR
2013 - 2014	Sanitary Ware Testing Laboratory - Mogen co., Ltd.
2012 - 2013	Laboratory of drug analysis, Food and Drug Quality Control Center - Lao PDR

11. Mr. Somchai Trairatanirom

Position (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Member of the Good Corporate Governance Committee (Independent Committee)
(25th February 2013) (4 Years 11 months) /

Member of the Risk Management Committee (Independent Committee) (22th June 2015) (2 Years 7 months)

Age (Year)

57

Educational Qualifications

- Doctor's Degree, Faculty of Monetary Economics, Gobe University, Japan
(Governing Japanese Scholarship)
- Master Degree, Faculty of Economics (International Finance and Banking) Thammasart University
- Bachelor Degree, Faculty of Economics (Finance, Banking, Marketing) Thammasart University
- Advanced Certificate Course in Public Administration and Public Law (PorRorMor 4)
- Certificate of the Program on Management of Technology
The Association for Overseas Technical Scholarship (Scholarship AOTS), Japan
- Director Certification Program (DCP 118/2552), Thai Institute of Director (IOD)
- Certificate Course of Corporate Governance Public Sufficiency Management for Executive,
Advanced Course No. 1, the Office of the Public Sector Development Commission

Training in 2017

-

Training in 2018

-

Share Holding Percentage³⁾ (%) None

Relationship

None

Working Experience during the Past 5 Years

2015 - Present	Member of the Risk Management Committee	Gunkul Engineering Public Company Limited
2013 - Present	Member of the Good Corporate Governance Committee	Gunkul Engineering Public Company Limited
2013 - Present	Deputy Managing Director CEO-Leadership Succession Program (LSP)	Institute of Research and Development for Public Enterprises (IRDP)
1998 - Present	Team Leader/Specialist/Advisor, Performance Appraisal of State Enterprises	State Enterprise Policy Office, Ministry of Finance

11. Mr. Somchai Trairatanapirom (continued)

2012 - Present	Member of Sub-Committee, Appraisal of Good Corporate Governance	Thai Health Promotion Foundation
2009 - 2012	Advisor, Project of Certificate Issuing and Annual Performance Appraisal for Governor	Office of The Attorney General
2012 - 2013	Advisor, Performance Controlling along with Appraisal System in quality of State Enterprises	State Enterprise Policy Office, Ministry of Finance
2008 - 2012	Deputy Managing Director	Tris Corporation Company Limited (TRIS)
2011 - 2012	Advisor, Follow-up and Project Appraisal - Development Policy Loan 2012, Area 4 North-East of Thailand	Public Debt Management Office, Ministry of Finance
2011 - 2012	Advisor, Competency Development in KPI and Appraisal Determination	International Institute for Trade and Development (Public Organization)
2011 - 2012	Advisory, Risk Management and Internal Audit	National Innovation Agency (Public Organization) NIA
2010 - 2011	Advisory, Cost Analysis and NGV Price Determination	Petroleum Institute of Thailand (PTIP)/ Energy Policy and Planning office, Ministry of Energy
2010 - 2012	Advisory, Follow-up and Performance Appraisal of GISTDA	Informatics and Space Technology Development Agency (Public Organization) - GISTDA
2010 - 2011	Team Leader, Performance Appraisal of The Nation Telecommunications Commission, 2012 - 2011	Office of The National Broadcasting and Telecommunications Commission (NBTC)
2009	Competency Appraisal of Personnel of Individual Development, Agricultural Research Development Agency (ARDA)	Ministry of Public Health
2008 - 2012	Advisory, Performance Appraisal in Working Capital Budget	The Comptroller General's Department (CGD), Ministry of Finance
2008 - 2012	Advisory, Performance Appraisal of Ministry of Energy	Ministry of Energy
2007 - 2012	Advisory, SET Award Project	The Stock Exchange of Thailand

11. Mr. Somchai Trairatanirom (continued)

2007 - 2011	Member of Sub-Committee, Agreement Negotiation and Performance Appraisal to Certificate Issuing of Annual Government Performance	Office of the National Anti-Corruption Commission
2007 - 2011	Advisory, Efficiency and Effectiveness Development of Government Performance	Office of the National Anti-Corruption Commission
2007 - 2011	Advisory, Capacity Building Seminar Arrangement	Office of the National Anti-Corruption Commission
1999 - 2008	Senior Assistant Managing Director	Thai Rating and Information Services Company Limited (TRIS)
2003 - 2012	Team Leader, Advisory in Certificate Issuing for Government Performance	Office of Public Sector Development Commission (OPDC)
2000 - 2012	Team Leader, Performance Appraisal	The Institute for the Promotion of Teaching Science and Technology (IPST)
2010 - 2012	Advisory, Risk Management and Internal Audit	The Institute for the Promotion of Teaching Science and Technology (IPST)
2000 - 2005	Corporate Governance Rating	The Securities and Exchange Commission and Stock Exchange of Thailand

12. Mr. Decha Chooligorn

Position (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Member of the Nomination and Remuneration Committee (Independent Committee)

(9th November 2012) (5 Years 2 months)

Age (Year) 55

Educational Qualifications

- MBA Marketing and Finance, Case Western Reserve University, USA Year 1988
- Bachelor Degree of Economics, Thammasat University
- Director Certification Program (DCP) 26/2003, Thai Institute of Director (IOD)
- Secrets to Doubling Your Sales, Productivity & Profits
- Key to Success in Organization Redesign
- Effective Managers Program
- Project Finance

Training in 2017 - Nomination Committee Best Practice Guideline Course

Training in 2018 -

Share Holding Percentage³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2012 - Present	Member of the Nomination and Remuneration Committee	Gunkul Engineering Public Company Limited
2005 - Present	Managing Director	Integrated Management Consultant Co., Ltd.
2003 - 2005	Assistant Managing Director	Thai Rung Union Car Public Company Limited
2001 - 2003	Deputy Managing Director	Advance Power Supply Public Company Limited

13. Mr. Hathai Uthai

Position (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Member of the Nomination and Remuneration Committee (Independent Committee)
(12th November 2015) (2 Years 2 months)

Age (Year) 63

Educational Qualifications

- Management of Public and Private Programs.
National Institute of Development Administration
- Bachelor of Engineering (Mechanical), Khonkaen University
- Bachelor of Laws, Thammasat University

Training in 2017 - Nomination Committee Best Practice Guideline Course

Training in 2018 -

Share Holding Percentage³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2015 - Present	Member of the Nomination and Remuneration Committee	Gunkul Engineering Public Company Limited
2014 - 2015	Secretary General of the Thai Industrial Standards Institute	Thai Industrial Standards Institute
2013 - 2014	Inspector, the Ministry of Industry	Ministry of Industry
2012 - 2013	Deputy director Office of Industrial Economics Ministry of industry	Ministry of Industry
2008 - 2012	Deputy Secretary General of the Thai Industrial Standards Institute Ministry of industry	Ministry of Industry

14. Mr. Phongthep Thitapan

Position (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Member of the Good Corporate Governance Committee (Independent Committee)
(25th February 2013) (4 Years 11 months)

Age (Year) 59

Educational Qualifications

- Master Degree of Public Administration, National Institute of Development Administration (NIDA)
- Bachelor Degree of Laws Program, Ramkhamhaeng University
- Degree in N.D.C. 54/2011, National Defense College
- Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives No.6, King Prajadhipok's Institute, 2008
- Advanced Certificate Course in Public Administration and Public Law for Executives No.8, King Prajadhipok's Institute, 2009
- Director Certification Program (DCP) 125/2009, Thai Institute of Director (IOD)
- MOF Executive Program (2005), Ministry of Finance
- Certificate of "LEADERSHIP", 2012 RIPA International, London, England

Training in 2016 - Senior Budget Administrator, Class 21, Bureau of the Budget 2016

Training in 2017 - Senior Justice Executive Course, Class 21/2017

Training in 2018 -

Share Holding Percentage³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2017 - Present	Director of Central Administration Bureau	Office of the Permanent Secretary, Ministry of Finance
2015 - Present	Director	DOD Biotech Public Company Limited
2013 - Present	Member of the Good Corporate Governance Committee	Gunkul Engineering Public Company Limited
2014 - 2017	Director of Inspection and Performance (Level 9)	Office of the Permanent Secretary, Ministry of Finance
2014 - 2017	Director	Total Industrial Services Co., Ltd.
2010 - 2015	Director	PTT LNG Company Limited

14. Mr. Phongthep Thitapan (continued)

2014	Head of the Office of the Minister Ministry of Finance (Level 9)	Office of the Permanent Secretary, Ministry of Finance
2008 - 2014	Specialist, Special Business of Financial System (Level 9)	Office of the Permanent Secretary, Ministry of Finance
2004 - 2014	Committee and Secretary	Center of Problem Solving for Public Debt, Ministry of Finance
2007 - 2008	Director, Office of Development of Community along as Sufficiency Economy	The Secretariat of the Cabinet
2003 - 2008	Director, Performance Appraisal	Office of the Permanent Secretary

15. Mr. Phongsakorn DamnoenPosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Deputy Managing Director, Business Development & Strategic Planning

Age (Year) 40

Educational Qualifications

- Master Degree in Electrical Engineering, Hannover University, Germany
- Bachelor Degree (Eng.) in Telecommunication, Rajamangala University of Technology
- Leadership Succession Program (LSP) 6/2016
Institute of Research and Development for Public Enterprises
- Director Certification Program (DCP) 149/2011, Thai Institute of Director (IOD)
- Wind Turbine Technology Course, People Republic of China
- PV Conference Japan
- Biomass Conference USA.

Training in 2017

- Train the Trainer of Anti-Corruption
- Senior Executives in Industrial Business Development and Investment
Class 4/ Institute of Business and Industrial Development

Training in 2018

- Ultra Wealth, Class 4 (UW4), The Ultra Wealth Group Company Limited

Share Holding Percentage³⁾ (%) None**Relationship** None**Working Experience during the Past 5 Years**

2016 - Present	Deputy Managing Director, Business Development & Strategic Planning	Gunkul Engineering Public Company Limited
2014 - 2015	Assistant Managing Director, Business Development & Strategic Planning	Gunkul Engineering Public Company Limited
2010 - 2014	Senior Vice President, Business Development and Special Project	Gunkul Engineering Public Company Limited
2009 - 2010	Manager, Business Development and Special Project	Gunkul Engineering Public Company Limited

15. Mr. Phongsakorn Damnoen (continued)

2007 - 2009	Supervisor, Business Development and Special Project	Gunkul Engineering Public Company Limited
2017 - Present	Director	Gunkul Solar Power Company Limited
2017 - Present	Director	Gunkul Solar Power 6 Company Limited
2017 - Present	Director	BMP Solar Company Limited
2016 - Present	Director	Gunkul Bio Energy Company Limited
2015 - Present	Director	ECO Thai Energy Limited
2015 - Present	Director	Gunkul Solar Power 1 Company Limited
2015 - Present	Director	Gunkul Solar Power 3 Company Limited
2015 - Present	Director	Gunkul Solar Power 4 Company Limited
2015 - Present	Director	Gunkul Solar Power 5 Company Limited
2015 - Present	Director	Korat Wind Energy Company Limited
2015 - Present	Director	Bright Green Power Company Limited
2015 - Present	Director	Rangngen Solution Company Limited
2015 - Present	Director	Gio Bio Energy Company Limited
2015 - Present	Director	Outgrow A Company Limited
2015 - Present	Director	Outgrow B Company Limited
2015 - Present	Director	Outgrow D Company Limited
2015 - Present	Director	Outgrow E Company Limited
2015 - Present	Director	Outgrow Wood Supply A Company Limited
2015 - Present	Director	Outgrow Wood Supply B Company Limited
2014 - Present	Director	Grenovation Power Company Limited
2013 - Present	Director	NK Power Sola Company Limited
2013 - Present	Director	Siam Gunkul Solar Energy Company Limited
2013 - Present	Director	Gunkul Myanmar Central Power 1 Pte. Ltd.
2012 - Present	Director	Wind Energy Development Company Limited
2009 - Present	Director	Gunkul Chubu Powergen Company Limited
2010 - 2012	Director	G-Power Source Company Limited
2005 - 2007	Solution Manager	Jun (Thailand) Company Limited

16. Mrs. Somluk Kanuenghet

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Member of the Nomination and Remuneration Committee (10th August 2009) ⁴⁾ (8 Years 5 months) /

Secretary of the Nomination and Remuneration Committee

(10th August 2009) ⁴⁾ (8 Years 5 months) / Senior Vice President, Executive Office

Age (Year) 52

Educational Qualifications

- Bachelor Degree of Arts, Srinakharinwirot University
- Effective Senior Manager Course
- Performance Appraisal by Balance Scored Card Course
- Career Planning & Development & Sucession Planning Course
- Salary Administration for Line Manager Course
- Effective Techniques for Job Analysis & Job Description Course
- Effective Techniques for Job Evaluation & Salary Survey Course
- Nomination committee Best Practice Guideline Course

Training in 2017

- Train the Trainer of Anti-Corruption
- Nomination committee Best Practice Guideline course

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2010 - Present	Senior Vice President, Executive Office	Gunkul Engineering Public Company Limited
2009 - Present	Member of the Nomination and Remuneration Committee	Gunkul Engineering Public Company Limited
2009 - Present	Secretary of the Nomination and Remuneration Committee	Gunkul Engineering Public Company Limited
2010 - Present	Director	G.K. Assembly Company Limited
2010 - Present	Director	G.K. Power Product Company Limited
2017 - Present	Director	Gunkul Training Center Company Limited
2006 - 2010	General Manager, Executive Office	Gunkul Engineering Public Company Limited
2003 - 2008	Manager, Human Resources Department	Gunkul Engineering Public Company Limited
1993 - 2002	Manager, Human Resources Division	Packlink (Thailand) Co., Ltd.

17. Mr. Thamrong ChankraithongPosition (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Senior Vice President, Sales and Marketing

Age (Year) 46

Educational Qualifications

- Master Degree in Information Technology,
King Mongkut's Institute of Technology Ladkrabang
- Bachelor Degree in Applied Physics,
King Mongkut's Institute of Technology Ladkrabang
- Director Certification Program (DCP) 149/2011, Thai Institute of Director (IOD)
- Secrets to Doubling Your Sales, Productivity & Profits course
- Substation & Transmission Line & Building Base Concept course
- Stringing Equipments by TEMA, Italy
- Meter Training Program by General Electric Co., USA
- Meter Testing Equipments by ZERA Electric, Germany
- Energy Conservation for Factory
- Business Opportunities in Marketing Energy Efficiency

Training in 2017 - Train the Trainer of Anti-Corruption

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2010 - Present	Senior Vice President, Sales and Marketing	Gunkul Engineering Public Company Limited
2011 - Present	Director / Senior Vice President, Sales and Marketing	K.N.P. Supply Company Limited
2008 - 2010	Assistant General Manager, Government and International Sales	Gunkul Engineering Public Company Limited

18. Mr. Phudis TriwilaskulPosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Senior Vice President, Sales and Marketing of Energy Solution and Lighting

Age (Year) 44

Educational Qualifications

- Master Degree in Logistics Management, Chulalongkorn University
- Bachelor Degree in Accounting, Dhurakij Bundit University Chulalongkorn University
- Certificate Program : Analysis and Management of Investment Projects, Chulalongkorn University
- Supply Chain & Logistics Management
- Essential Knowledge for Purchasing Professionals
- SAP User Interface Team of Siam Cement Group (Module : MM)
- Oversea Purchasing Techniques
- Purchasing Knowledge for Cost Saving
- Self Certification Scheme
- Purchasing Knowledge for Cost Saving
- Self Certification Scheme

Training in 2017 - Train the Trainer of Anti-Corruption**Training in 2018** -**Share Holding Percentage³⁾ (%)** None**Relationship** None**Working Experience during the Past 5 Years**

2016 - Present	Senior Vice President, Sales & Marketing-Energy Solution and Lighting	Gunkul Engineering Public Company Limited
2014 - Present	Director	Gunkul LED Lighting Company Limited
2011 - 2015	Vice President, Logistics	Gunkul Engineering Public Company Limited
2007 - 2010	Manager, Purchasing	Gunkul Engineering Public Company Limited
2005 - 2007	Manager, Procurement and Shipping Department	L.V. Technology Public Company Limited
1993 - 2005	Purchasing Superviosr	Siam Fibre Cement Company Limited

19. Mr. Thitipong Techaratanayuenyong

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Member of the Risk Management Committee (12th November 2014) (3 Years 2 months) /

Secretary of the Risk Management Committee (12th November 2014) (3 Years 2 months) /

Senior Vice President, Financial Management and Controlling Foreign Affairs

Age (Year) 42

Educational Qualifications

- Master Degree of Business Administration (MBA)
Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Bachelor Degree of Economics (Major in International Economics) Chulalongkorn University
- Bachelor Degree of Engineering (Major in Civil & Environmental Engineering)
Chulalongkorn University
- Business Leader Program by Dr. Noel M. Tichy
- Engaging Your People & Develop Coaching skills
- Global Business Leader Development
- CPF Good & Smart Team Management
- Building Relationships and Team Leading
- Strategic CFO in Capital Markets Program 2015, Class1

Training in 2017 - Train the Trainer of Anti-Corruption

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2014 - Present	Senior Vice President, Financial Management and Controlling Foreign Affairs	Gunkul Engineering Public Company Limited
2014 - Present	Member of the Risk Management Committee and Secretary	Gunkul Engineering Public Company Limited
2014 - Present	Secretary of the Risk Management Committee	Gunkul Engineering Public Company Limited
2008 - 2013	Assistant Vice President, Office of Chief Financial Officer	Charoen Pokphand Foods Public Company Limited
2002 - 2008	Manager, Investment Management	Shin Corporation Public Company Limited
1999 - 2002	Senior Corporate Dealer	Kasikorn Bank Public Company Limited

20. Dr. Phairot PhanukanPosition (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Senior Vice President, Project Management and Operating & Maintenance

Age (Year) 50

Educational Qualifications

- PhD in Renewable Energy, Naresuan University
- Master Degree of Business Administration (MBA), Huachiew Chalermprakiet University
- Bachelor Degree of Engineering, King Mongkut's Institute of Technology Ladkrabang

Training in 2017 - Train the Trainer of Anti-Corruption**Training in 2018** -**Share Holding Percentage** ³⁾ (%) None**Relationship** None**Working Experience during the Past 5 Years**

2015 - Present	Senior Vice President, Project Management and Operating & Maintenance	Gunkul Engineering Public Company Limited
----------------	---	---

21. Mrs. Nattawan WongchanPosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Senior Vice President, Business Support

Age (Year) 50

Educational Qualifications

- Master Degree of Business Administration, Kasetsart University
- Bachelor Degree of Finance and Banking, Major in Finance Ramkhamharn University
- Diploma Program in Taxation, University of The Thai Chamber of Commerce

Training in 2017

- Train the Trainer of Anti-Corruption
- Tax Income Update 2017
- Accounting Standards Preparing Course 2017

Training in 2018 -**Share Holding Percentage³⁾ (%)** None**Relationship** None**Working Experience during the Past 5 Years**

2016 - Present	Senior Vice President, Business Support	Gunkul Engineering Public Company Limited
2014 - 2016	Vice President, Business Support	Gunkul Engineering Public Company Limited
2007 - 2014	Manager, Finance Department	Gunkul Engineering Public Company Limited
1997 - 2007	Manager, Finance Department	Nidec Shibaura Electronics (Thailand) Co., Ltd.

22. Mr. Janpon NgamaroonchotePosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Senior Director, Strategic Planning & Investment

Age (Year) 34

Educational Qualifications - Master Degree of MBA, Major in General, Suffolk University, Boston U.S.A.
 - Bachelor of Science, Major in Statistics, Kasetsart University

Training in 2017 - Train the Trainer of Anti-Corruption**Training in 2018** -**Share Holding Percentage³⁾ (%)** None**Relationship** None**Working Experience during the Past 5 Years**

2016 - Present	Senior Vice President, Strategic Planning and Investment	Gunkul Engineering Public Company Limited
2014 - 2016	Vice President, Strategic Planning and Investment	Gunkul Engineering Public Company Limited
2010 - 2013	Manager, Office of Managing Director	Gunkul Engineering Public Company Limited
2014 - Present	Director	Greenovation Power Company Limited
2013 - Present	Director	NK Power Solar Company Limited
2013 - Present	Director	Solar Energy Society Company Limited
2015 - Present	Director	Gunkul Internation (Mauritius)
2011 - 2017	Director	Siam Gunkul Power Company Limited

23. Miss Chantra Jongjamareeseethong

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Company Secretary (10th August 2009) ⁴⁾ (8 Years 5 months) /

Secretary of the Good Corporate Governance Committee (25th February 2013) (4 Years 11 months) /

Senior Vice President, Office of Managing Director & Investor Relations

Age (Year) 50

Educational Qualifications

- Master Degree of Business Administration, Major in Accounting Ramkhamhaeng University (Undergoing education)
- Bachelor's Degree, Major in Accounting, Siam University
- Bachelor of Arts, Major in Linguistics, Thammasart University
- Company Secretary Program, 28/2008, Thai Institute of Director (IOD)
- Effective Minute Taking (EMT), 12/2008, Thai Institute of Director (IOD)
- Japanese Certificate Level 3

Training in 2017

- Train the Trainer of Anti-Corruption
- Decrypt the SET Act, 2016 Seminar
- Determination of Responsibility in Accounting and Finance and Accountant, and Account Controller
- Guidelines for the use of the Securities Change Management System of the Committee, Executives and the Auditor (Form 59-2) via Electronic
- Road to Certify for CAC
- Preparation of New CG Code for Listed Company
- Enhancing Good Corporate Governance based on CGR Scorecard
- The implementation of the revised SET Portal System
- Include Key Issues of the Land and Building Tax Act
- Use of Strategic Shareholder / FSCOM System
- Smart Disclosure Program
- SCP Straight Through
- Tax Income Update 2017
- Accounting Standards Preparing Course 2017

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

23. Miss Chantra Jongjamareeseethong (continued)

Working Experience during the Past 5 Years

2016 - Present	Senior Vice President, Office of Managing Director & Investor Relations	Gunkul Engineering Public Company Limited
2013 - Present	Secretary of the Good Cooperate Government Committee	Gunkul Engineering Public Company Limited
2009 - Present	Company Secretary	Gunkul Engineering Public Company Limited
2014 - 2016	Vice President, Office of Managing Director & Investor Relations	Gunkul Engineering Public Company Limited
2005 - 2007	Coordinate Officer	Integrated Management Consultant Company Limited
2003 - 2005	Secretary to Assistant Managing Director	Thai Rung Union Car Public Company Limited
2000 - 2003	Manager, Human Resource and Administration Department	ASL Automated Co., Ltd. (Hong Kong)
1997 - 2000	Secretary and Coordinator	KBC Bank N.V, (Belgium)
1990 - 1997	Supervisor, Human Resource and Administration Department	Thai Sunrock Co., Ltd. and Nissho Iwai Corporation (Japna)

24. Ms. Vijittra SaengpredekornPosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Vice President, Renewable Energy Business Development

Age (Year) 35

Educational Qualifications

- Master Degree of Energy Technology, Asian Institute of Technology (AIT)
- Bachelor of Science and Technology (2nd Class Honors), Thammasart University

Training in 2017

- Train the Trainer of Anti-Corruption

Training in 2018

-

Share Holding Percentage³⁾ (%) 0.00025

Relationship None

Working Experience during the Past 5 Years

2007 - Present	Director, Renewable Energy Business Development	Gunkul Engineering Public Company Limited
2013 - Present	Director	Solar Energy Society Company Limited
2015 - Present	Director	GIO BIO Energy Company Limited
2015 - Present	Director	Outgrow A Company Limited
2015 - Present	Director	Outgrow B Company Limited
2015 - Present	Director	Outgrow D Company Limited
2015 - Present	Director	Outgrow E Company Limited
2015 - Present	Director	Outgrow Wood Supply A Company Limited
2015 - Present	Director	Outgrow Wood Supply B Company Limited

25. Miss Suttirat Tangnorakul

Position (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Vice President, Business Support (Accounting)

Age (Year) 44

Educational Qualifications

- Master Degree of Business Administration, Major in Accounting, Ramkhamhaeng University
- Bachelor Degree of Business Administration, Major in Accounting, Ramkhamhaeng University
- Mini MBA I Taxation (Major in General Business), School of Tax
- Modern Accountants Program) Class 13
- Faculty of Commerce and Accountancy, Chulalongkorn University
- Specialist Tax Law Practice Course 2015

Training in 2017

- Train the Trainer of Anti-Corruption
- Tax Income Update 2017
- Accounting Standards Preparing Course 2017
- Financial Model 1 - Fundamentals of Finance, Class 2
- Keep up with financial reporting standards.
- Use of Strategic Shareholder / FSCOM System
- Smart Disclosure Program
- SCP Straight Through

Training in 2018 -

Share Holding Percentage³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2017 - Present	Vice President, Business Support (Accounting)	Gunkul Engineering Public Company Limited
2017 - Present	Director	Gunkul Training Center Company Limited
2016 - 2017	Assistant Vice President, Business Support (Accounting)	Gunkul Engineering Public Company Limited
2012 - 2015	Manager, Accounting Department	Gunkul Engineering Public Company Limited
2011 - 2012	Manager, Project Accounting Division	Gunkul Engineering Public Company Limited
2005 - 2007	Assistant Accountant	Kim Chong Him Trading Company Limited
1999 - 2005	Bookkeeper	Wattanasuk International Company Limited
1997 - 1998	Assistant Auditor	Suttithom Group law and accounting office

26. Mr. Sarawut MasrongPosition (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾Vice President, Factory / Vice President,
Product Development and Process Improvement

Age (Year) 40

Educational Qualifications - Master Degree of Business Administration, Major in General Management
Ramkhamhaeng university

- Bachelor Degree of Electrical Engineering, Major in Electronics
Rajamangala University of Technology Thanyaburi

Training in 2017 - Train the Trainer of Anti-Corruption

Training in 2018 -

Share Holding Percentage ³⁾ (%) 0.00009

Relationship None

Working Experience during the Past 5 Years

2012 - Present	Senior Vice President, Factory	G.K.Assemble Company Limited / G.K.Power Products Company Limited
2012 - Present	Vice President, Factor (Product Development and Process Improvement)	G.K.Assemble Company Limited / G.K.Power Products Company Limited
2007 - 2014	Manager, Engineering and Production Department	M&J Technology Company Limited
1997 - 2007	Engineering Supervisor	S.V.I. Public Company Limited

27. Miss Kullawee Saenchai KornPosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Assistant Vice President, Financial Management and Controlling Foreign Affairs

Age (Year) 33

Educational Qualifications

- Master Degree of Business Administration (MBA), Chulalongkorn University
- Bachelor Degree of Commerce and Accountancy (Major in Accounting), Chulalongkorn University
- Certified Public Accountant, CPA (Thailand))
- Young Researcher Competition (Professional in Securities Investment) Thailand Securities Institute
- CFO Current Issues 2015

Training in 2017

- Train the Trainer of Anti-Corruption
- Corporate Finance 2017
- TFRS Update 2018
- Pack 5 & Fair Value

Training in 2018 -**Share Holding Percentage**³⁾ (%) None**Relationship** None**Working Experience during the Past 5 Years**

2015 - Present	Assistant Vice President, Financial Management and Controlling Foreign Affairs	Gunkul Engineering Public Company Limited
2011 - 2015	Vice President, Accounting and Finance Department	Howden Insurance Brokers (Thailand) Co., Ltd.
2006 - 2011	Senior Auditor	Pricewaterhouse Coopers ABAS (Thailand)

28. Mr. Tanetsiri Farkmitr

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Secretary of the Audit Committee (20th October 2016) (1 Years 3 months) /

Assistant Vice President, Internal Audit

Age (Year) 41

Educational Qualifications

- Master Degree of Accounting, Thammasat University
- Bachelor's Degree, Accounting, Thammasat University
- Certified Public Accountant, CPA (Thailand))

Training in 2017

- Train the Trainer of Anti-Corruption
- Enterprise Risk Management
- AC Hot Update Seminar for the Audit Committee

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2016 - Present	Assistant Vice Director, Internal Audit	Gunkul Engineering Public Company Limited
2016 - Present	Secretary of the Audit Committee	Gunkul Engineering Public Company Limited
2015 - 2016	Group Manager, Internal Audit	Tipco Asphalt Public Co., Ltd.
2014 - 2015	Manager, Technology and Information Systems Internal Audit	Banpu Public Company Limited
2012 - 2014	Senior Auditor, Internal Audit	Banpu Public Company Limited
2007 - 2012	Manager, Internal Audit Department	Banpu Public Company Limited

29. Mr. Thanapat WonghirulchayathornPosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Assistant Vice President, Business Support (Information Technology)

Age (Year) 46**Educational Qualifications** - Bachelor Degree of Computer Science,
King Mongkut's Institute of Technology North Bangkok**Training in 2017** - Train the Trainer of Anti-Corruption**Training in 2018** -**Share Holding Percentage³⁾ (%)** 0.00003**Relationship** None**Working Experience during the Past 5 Years**

2016 - Present	Assistant Vice President, Business Support (Information Technology)	Gunkul Engineering Public Company Limited
2005 - 2016	Manager, Information Technology	Gunkul Engineering Public Company Limited

30. Ms. Warinthip Rosarpitak

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Assistant Vice President, Strategic Planning and Investment

Age (Year) 35

Educational Qualifications

- Master Degree (Exchange Student), University of North Carolina at Chapel Hill
- Master Degree of Business Administration, Major in Finance and Administration
Sasin Graduate Institute of Business
- Bachelor Degree of Economics, Thammasat University

Training in 2017 - Train the Trainer of Anti-Corruption

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2015 - Present	Assistance Vice President, Strategic Planning and Investment	Gunkul Engineering Public Company Limited
2016 - 2017	Financial Advisor	KPN Academy Company Limited.
2015 - 2016	Business Development Advisor	MBK Public Company Limited
2014 - 2015	Senior Manager, Business Development	MBK Public Company Limited

31. Mr. Tridti BoonyayonePosition (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Assistant Vice President, Renewable Energy Business

Age (Year) 35

Educational Qualifications - Master Degree of Engineering Program, Major in Electrical Engineering
Kasetsart University

- Bachelor Degree of Engineering Program, Major in Electrical Engineering
Mahidol University

Training in 2017 - Train the Trainer of Anti-Corruption**Training in 2018** -**Share Holding Percentage ³⁾ (%)** None**Relationship** None**Working Experience during the Past 5 Years**

2017 - Present	Assistant Vice President, Strategic Planning and Investment	Gunkul Engineering Public Company Limited
2015 - 2017	Director, Renewable Energy Business Development (Wind Energy)	Gunkul Engineering Public Company Limited
2012 - 2015	Senior Professional Renewable Energy	Gunkul Engineering Public Company Limited
2012 - Present	Director	Wind Energy Development Company Limited

32. Mr. Wiwat ChanprasitPosition (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Assistant Vice President, Business Support (Finance)

Age (Year) 46

Educational Qualifications - Bachelor Degree of Accounting, Suan Dusit Rajabhat University

Training in 2017

- Train the Trainer of Anti-Corruption
- Tax Income Update 2017
- Accounting Standards Preparing Course 2017

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2016 - Present	Assistant Vice President, Business Support (Financing)	Gunkul Engineering Public Company Limited
1998 - 2016	Manager, Finance Department	Gunkul Engineering Public Company Limited

33. Mr. Kittisak PeanpanichPosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Assistant Vice President, Logistics

Age (Year) 40

Educational Qualifications

- Master Degree of Manufacturing, University of Hertfordshire
- Bachelor Degree of Engineering, Kasetsart University

Training in 2017

- Train the Trainer of Anti-Corruption
- Team Power Reduction
- Lean Logistics

Training in 2018 -**Share Holding Percentage³⁾ (%)** 0.00009**Relationship** None**Working Experience during the Past 5 Years**

2017 - Present	Assistant Vice President, Logistics	Gunkul Engineering Public Company Limited
2013 - 2017	Project Procurement Officer	PTTEP Services Co., Ltd. (PTTEP - Myanmar Asset)
2012 - 2013	Asssistant Procurement Manager	Kellogg (Thailand) Co., Ltd.

34. Mr. Werayuth Chamwong

Position (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Assistant Vice President, Factory (Product Development & Process Improvement)

Age (Year) 40

Educational Qualifications

- Master Degree of Business Administration, Major in Management, Kasetsart University
- Bachelor Degree of Electrical Engineering, Srinakharinwirot University

Training in 2017

- Train the Trainer of Anti-Corruption
- Internal Auditor ISO14001 and OHSAS18001
- Innovation
- Risk Analysis ISO14001&OHSAS18001
- Internal Auditor ISO9001 : 2015

Training in 2018 -

Share Holding Percentage³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2017 - Present	Assistant Vice President, Factory (Product Development & Process Improvement)	G.K. Assenbly Company Limited / G.K. Power Products Company Limited
2013 - 2017	Manager, Power Equipment and LED Lighting Development	G.K. Assenbly Company Limited / G.K. Power Products Company Limited

35. Mr. Suwit RajdeamPosition (Appointed Date to be Director / Secretary)¹⁾ / Holding a Director / Secretary Position (Year)²⁾

Assistant Vice President, Factory (Production)

Age (Year) 38

Educational Qualifications

- Master Degree of Business Administration, Major in Logistics Management
Panyapiwat Institute of Management
- Bachelor Degree of Engineering, Major in Production Technology
King Mongkut's University of Technology North Bangkok

Training in 2017

- Train the Trainer of Anti-Corruption
- Internal Auditor ISO-9001:2015
- Internal Auditor ISO-14001:2015
- Internal Auditor OHSAS18001:2008
- Zero Defect and prevention of errors in the production process

Training in 2018 -**Share Holding Percentage³⁾ (%)** None**Relationship** None**Working Experience during the Past 5 Years**

2015 - Present	Assistant Vice President, Factory (Production)	G.K.Assembly Company Limited
2009 - 2015	Manager, Logistics Department	General Candy Company Limited
2006 - 2009	Manager, Production Department	SP Metal Part Co., Ltd.

36. Mr. Mitree Thaworncheep

Position (Appointed Date to be Director / Secretary) ¹⁾ / Holding a Director / Secretary Position (Year) ²⁾

Acting Assistant Vice President, Sales and Marketing

Age (Year) 47

Educational Qualifications - Bachelor Degree of Science and Technology, Sukhothai Thammathirat University

Training in 2017 - Train the Trainer of Anti-Corruption

Training in 2018 -

Share Holding Percentage ³⁾ (%) None

Relationship None

Working Experience during the Past 5 Years

2017 - Present	Acting Assistant Vice President, Sales & Marketing	Gunkul Engineering Public Company Limited
2012 - 2017	Manager, Government Sales Department	Gunkul Engineering Public Company Limited

¹⁾ Date of Appointment and/or Registration as Director in the Board of Directors and/or Member in Sub-Committees, and/or Secretary to Board of Directors and/or to Sub-Committees

²⁾ Continuous tenure as Director in the Board of Directors and/or Member in Sub-Committees, and/or Secretary to Board of Directors and/or to Sub-Committees

³⁾ Shareholding by Directors and/or Executives in GUNKUL Securities at the Closing Date of XO's Register on December 19, 2017 (Total Paid-up Shares 7,418,621,493 shares)

⁴⁾ GUNKUL is transformed into a public company on August 10, 2009. The date was registered with the Department of Business Development for the first Board of Directors.

⁵⁾ The date of being registered as Director of the Board of Directors shall be reported to the Department of Business Development.

⁶⁾ Great Miracle Asset Group is comprised of Great Miracle Asset Co., Ltd. / Great Miracle Asset 2 Co., Ltd. - Great Miracle Asset 5 Co., Ltd. / Great Miracle Asset 7 Co., Ltd. - Great Miracle Asset 11 Co., Ltd. / Great Miracle Asset 13 Co., Ltd. - Great Miracle Asset 14 Co., Ltd. / and Pranburi Boulevard Co., Ltd.

20.2 Details Position Titles of Directors in Subsidiary Companies

Name	Subsidiary Companies (Direct Subsidiaries and Indirect Subsidiaries)																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. Miss Sopacha Dhurongpiyawut	G.K. Assembly Co., Ltd.	G.K. Power Products Co., Ltd.	K.N.P. Supply Co., Ltd.	Wind Energy Development Co., Ltd.	Greenovation Power Co., Ltd.	Korat Wind Energy Co., Ltd.	NK Power Sola Co., Ltd.	Gunkul Solar Power 1 Co., Ltd.	Gunkul Solar Power 2 Co., Ltd.	Gunkul Solar Power 3 Co., Ltd.	Gunkul Solar Power 4 Co., Ltd.	Gunkul Solar Power 5 Co., Ltd.	Bright Green Co., Ltd.	Siam Gunkul Solar Energy Co., Ltd.	Solar Energy Society Co., Ltd.	Gunkul Solar Roof 1 Co., Ltd.	Gunkul Training Center Co., Ltd.	Gunkul Solar Community Co., Ltd.	Gunkul Power Development Co., Ltd.	Gunkul LED Lighting Co., Ltd.	Infinite Alternative Energy Co., Ltd.	Rangnen Solution Co., Ltd.
2. Dr. Somboon Aueatchasai	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. Mr. Phongsakorn Damnoen	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4. Miss Naruechon Dhurongpiyawut	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5. Mrs. Areewan Chalorndan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6. Mr. Chalorpon Sirichaloen	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7. Mrs. Somluk Kanuenghet	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8. Mr. Thamrong Chankraithong	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9. Mr. Phudis Triwalskul	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10. Mr. Janpon Ngamaroonchote	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11. Ms. Vijitra Saengpredekon	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12. Miss Sutthirat Tangnorakul	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13. Mr. Tridti Boonyayone	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14. Mr. Kritsanapan Phoonwattanakit	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remark

— Director

20.2 Details Position Titles of Directors in Subsidiary Companies (continued)

Name	Subsidiary Companies (Direct Subsidiaries and Indirect Subsidiaries)																				
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
	Gio Bio Energy Co., Ltd.	Outgrow A Co., Ltd.	Outgrow B Co., Ltd.	Outgrow D Co., Ltd.	Outgrow E Co., Ltd.	Outgrow Wood Supply A Co., Ltd.	Outgrow Wood Supply B Co., Ltd.	Eco Thai Energy Co., Ltd.	Gunkul Bio Energy Co., Ltd.	Gunkul Solar Power Co., Ltd.	Gunkul Solar Power B Co., Ltd.	BMP Solar Co., Ltd.	Gunkul International (Mauritius)	Gunkul Investment (Singapore) Pte. Ltd.	Gunkul Myanmar Power (Hlawga) Pte. Ltd.	Gunkul Myanmar Central Power I Co., Ltd.	Sendai Okura GD Daichi Godo Kaisha	Kimitsu Mega Solar Godo Kaisha	GD Solar Utsunomiya Godo Kaisha	East Japan Solar 13 Godo Kaisha	Future Asset Management Kabushiki Kaisha
1. Miss Sopacha Dhumrongpiyawut										—	—					—					
2. Dr. Sornboon Aueatchasai	—	—	—	—	—	—	—	—	—												
3. Mr. Phongsakorn Damnoen	—	—	—	—	—	—	—	—	—	—	—	—				—					
4. Miss Naruechon Dhumrongpiyawut	—	—	—	—	—	—	—	—				—		—	—	—					
5. Mrs. Areewan Chaloeimdan																					
6. Mr. Chaloepon Sirichaloen																					
7. Mrs. Somluk Kanuenghet																					
8. Mr. Thamrong Chankraithong																					
9. Mr. Phudis Triwilaskul																					
10. Mr. Janpon Ngamaroonchote													—								
11. Ms. Vijitra Saengpredekorn	—	—	—	—	—	—	—														
12. Miss Suttirat Tangnorakul																					
13. Mr. Tritdi Boonyayone																					
14. Mr. Kritsanapan Piboonwattanakit	—	—	—	—	—	—	—														

Remark

— Director

20.3 Details Position Titles of Directors and Managements of Gunkul Engineering Public Company Limited

Name	Company	Subsidiary Companies (Direct Subsidiaries and Indirect Subsidiaries)																																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																		
	Gunkul Engineering Public Co., Ltd.	G.K. Assembly Co., Ltd.	G.K. Power Products Co., Ltd.	K.N.P. Supply Co., Ltd.	Wind Energy Development Co., Ltd.	Greenovation Power Co., Ltd.	Karat Wind Energy Co., Ltd.	NK Power Sola Co., Ltd.	Gunkul Solar Power 1 Co., Ltd.	Gunkul Solar Power 2 Co., Ltd.	Gunkul Solar Power 3 Co., Ltd.	Gunkul Solar Power 4 Co., Ltd.	Gunkul Solar Power 5 Co., Ltd.	Bright Green Co., Ltd.	Siam Gunkul Solar Energy Co., Ltd.	Solar Energy Society Co., Ltd.	Gunkul Solar Roof 1 Co., Ltd.	Gunkul Training Center Co., Ltd.	Gunkul Solar Community Co.,Ltd.	Gunkul Power Development Co., Ltd.	Gunkul LED Lighting Co., Ltd.	Infinite Alternative Energy Co., Ltd.	Rangen Solution Co., Ltd.																		
1. Mr. Gunkul Dhumrongpiyawut	1) 2)																																								
2. Dr. Djitt Laowattana	2) 3) 4) 5)																																								
3. Pol. Maj. Gen Visit Sukrasep	2) 3) 5) 6) 7)																																								
4. Dr. Chongrak Ranueysong	2) 3) 5) 6) 7)																																								
5. Miss Sopacha Dhumrongpiyawut	2) 7) 8) 9) 10)	2)	2)				2)	2)	2)	2)	2)	2)	2)		2)		2)	2)	2)	2)																					
6. Dr. Somboon Aueatchasai	2) 9) 10) 11)			2)	2)		2)	2)									2)	2)	2)	2)	2)	2)																			
7. Miss Nuechon Dhumrongpiyawut	2) 9) 10)		2)	2)	2)														2)		2)	2)	2)																		
8. Mrs. Areewan Chaloeandan	2) 9) 10)	2)	2)																																						
9. Mr. Chaloepon Srichalben	2) 9) 10)		2)																																						
10. AVM. Dr.Plan Totarong	3) 6) 7)																																								
11. Mr. Sornchai Trairatanapirom	3) 7)																																								
12. Mr. Decha Chooligorn	3) 7)																																								
13. Mr. Hathai Uthai	3) 7)																																								
14. Mr. Phongthep Thitapan	3) 7)																																								
15. Mr. Phongsakorn Damnoen	1) 6)				2)	2)	2)	2)	2)	2)	2)	2)	2)	2)	2)								2)																		
16. Mrs. Somluk Kanueghet	7) 10) 14)	2)	2)															2)																							
17. Mr. Thamrong Chankraithong	1) 6)		2)																																						
18. Mr. Phudis Triwilaskul	1) 6)																				2)																				
19. Mr. Thitipong Techaratanayuenjong	7) 10) 14)																																								
Remarks	1) Chairman of the Board of Directors	2) Director	Member of the Other Sub-Committee			3) Independent Director			4) Chairman of the Audit Committee			5) Member of the Audit Committee			6) Chairman of the Other Sub-Committee			7) Member of the Other Sub-Committee			8) Chief Executive Officer			9) Executive Director			10) Executive			11) Secretary of the Board of Directors			12) Company Secretary			13) Secretary of the Audit Committee			14) Secretary of the Other Sub-Committee		

Remarks 1) Chairman of the Board of Directors 2) Director 3) Independent Director 4) Chairman of the Audit Committee 5) Member of the Audit Committee
6) Chairman of the Other Sub-Committee 7) Member of the Other Sub-Committee 8) Chief Executive Officer 9) Executive Director 10) Executive
11) Secretary of the Board of Directors 12) Company Secretary 13) Secretary of the Audit Committee 14) Secretary of the Other Sub-Committee

20.3 Details Position Titles of Directors and Managements of Gunkul Engineering Public Company Limited (continued)

Name	Company	Subsidiary Companies (Direct Subsidiaries and Indirect Subsidiaries)																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	G.K. Engineering Public Co., Ltd.	G.K. Assembly Co., Ltd.	G.K. Power Products Co., Ltd.	G.K.P. Supply Co., Ltd.	Wind Energy Development Co., Ltd.	Greenovation Power Co., Ltd.	Korat Wind Energy Co., Ltd.	NK Power Sola Co., Ltd.	Gunkul Solar Power 1 Co., Ltd.	Gunkul Solar Power 2 Co., Ltd.	Gunkul Solar Power 3 Co., Ltd.	Gunkul Solar Power 4 Co., Ltd.	Gunkul Solar Power 5 Co., Ltd.	Bright Green Co., Ltd.	Siam Gunkul Solar Energy Co., Ltd.	Solar Energy Society Co., Ltd.	Gunkul Solar Roof 1 Co., Ltd.	Gunkul Training Center Co., Ltd.	Gunkul Solar Community Co., Ltd.	Gunkul Power Development Co., Ltd.	Gunkul LED Lighting Co., Ltd.	Infinite Alternative Energy Co., Ltd.	Rangnen Solution Co., Ltd.
20. Dr. Phairot Phanukan	(10)																						
21. Mrs. Nattawan Wongchan	(10)																						
22. Mr. Janpon Ngamaroonchote	(10)					2)		2)								2)							
23. Miss Chantira Jongamareesethong	(10) (2) (4)																						
24. Ms. Vijitra Saengpredekom	(10)																	2)					
25. Ms. Suttirat Tangnorakul	(10)																						
26. Mr. Sarawut Masrong	(10)																						
27. Ms. Kullawee Saenchalkom	(10)																						
28. Mr. Tanetsiri Farkmitr	(10) (3)																						
29. Mr. Thanapat Wonghiruchayathom	(10)																						
30. Ms. Wainthip Rosapitak	(10)																						
31. Mr. Tirdti Boonyayone	(10)				2)																		
32. Mr. Wiwat Chanprasit	(10)																						
33. Mr. Kittisak Pianpanich	(10)																						
34. Mr. Veerayut Chamwong	(10)																						
35. Mr. Suwit Rachadoem	(10)																						
36. Mr. Maitree Tavomcheep	(10)																						
37. Mr. Kitsanapan Piboonwatanakit																							

Remarks 1) Chairman of the Board of Directors 2) Director 3) Independent Director 4) Chairman of the Audit Committee 5) Member of the Audit Committee
6) Chairman of the Other Sub-Committee 7) Member of the Other Sub-Committee 8) Chief Executive Officer 9) Executive Director 10) Executive
11) Secretary of the Board of Directors 12) Company Secretary 13) Secretary of the Audit Committee 14) Secretary of the Other Sub-Committee

20.3 Details Position Titles of Directors and Managements of Gunkul Engineering Public Company Limited (continued)

Name	Subsidiary Companies (Direct Subsidiaries and Indirect Subsidiaries)																				
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
1. Mr. Gunkul Dhumrongpiyawut																					
2. Dr. Djitt Laowattana																					
3. Pol. Maj. Gen Visit Sukrasep																					
4. Dr. Chongrak Rarueysong																					
5. Miss Sopacha Dhumrongpiyawut																					
6. Dr. Sombon Aueatchasai	2)	2)	2)	2)	2)	2)	2)	2)	2)		2)					2)					
7. Miss Naruechon Dhumrongpiyawut	2)	2)	2)	2)	2)	2)	2)	2)	2)			2)		2)	2)						
8. Mrs. Areewan Chaloeandan																					
9. Mr. Chaloepon Srichalben																					
10. AVM. Dr.Plan Totarong																					
11. Mr. Somchai Trairatanapirom																					
12. Mr. Decha Chooligorn																					
13. Mr. Hathai Uthai																					
14. Mr. Phongthep Thitapan																					
15. Mr. Phongsakorn Damnoen	2)	2)	2)	2)	2)	2)	2)	2)	2)	2)	2)	2)				2)					
16. Mrs. Somluk Kanueghet																					
17. Mr. Thamrong Chankraithong																					
18. Mr. Phudis Triwilaskul																					
19. Mr. Thitipong Techaratanayuenjong																					
Remarks	1) Chairman of the Board of Directors	2) Director					3) Independent Director					4) Chairman of the Audit Committee	5) Member of the Audit Committee								
	6) Chairman of the Other Sub-Committee	7) Member of the Other Sub-Committee					8) Chief Executive Officer					9) Executive Director	10) Executive								
	11) Secretary of the Board of Directors	12) Company Secretary					13) Secretary of the Audit Committee					14) Secretary of the Other Sub-Committee									

20.3 Details Position Titles of Directors and Managements of Gunkul Engineering Public Company Limited (continued)

Name	Subsidiary Companies (Direct Subsidiaries and Indirect Subsidiaries)																				
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Gto Bio Energy Co., Ltd.		Outgrow A Co., Ltd.	Outgrow B Co., Ltd.	Outgrow D Co., Ltd.	Outgrow E Co., Ltd.	Outgrow Wood Supply A Co., Ltd.	Outgrow Wood Supply B Co., Ltd.	Eco Thai Energy Co., Ltd.	Gunkul Bio Energy Co., Ltd.	Gunkul Solar Power Co., Ltd.	Gunkul Solar Power 6 Co., Ltd.	BMP Solar Co., Ltd.	Gunkul International (Mauritius)	Gunkul Investment (Singapore) Pte. Ltd.	Gunkul Myanmar Power (Hwaga) Pte. Ltd.	Gunkul Myanmar Central Power 1 Co., Ltd.	Sendai Okura GD Daichi Goto Kaisha	Kimitsu Mega Solar Goto Kaisha	GD Solar Utsunomiya Goto Kaisha	East Japan Solar 13 Goto Kaisha	Future Asset Management Kabushiki Kaisha
20. Dr. Phairot Phanukan																					
21. Mrs. Nattawan Wongchan																					
22. Mr. Janpon Ngamroonchote																					
23. Miss Chantira Jongamareesethong																					
24. Ms. Vijitra Saengpredekor	2)	2)	2)	2)	2)	2)	2)						2)								
25. Ms. Suttirat Tangnorakul																					
26. Mr. Sarawut Masrong																					
27. Ms. Kullawee Saenchaihom																					
28. Mr. Tanetsiri Farkmitr																					
29. Mr. Thanapat Wonghiruchayathom																					
30. Ms. Wainthip Rosapitak																					
31. Mr. Tridti Boonyayone																					
32. Mr. Wiwat Chanprasit																					
33. Mr. Kittisak Pianpanich																					
34. Mr. Veerayut Chamwong																					
35. Mr. Suwit Rachadom																					
36. Mr. Maitree Tavomcheep																					
37. Mr. Kitisarnan Piboonwatanakit	2)	2)	2)	2)	2)	2)	2)														

Remarks 1) Chairman of the Board of Directors 2) Director 3) Independent Director 4) Chairman of the Audit Committee 5) Member of the Audit Committee
6) Chairman of the Other Sub-Committee 7) Member of the Other Sub-Committee 8) Chief Executive Officer 9) Executive Director 10) Executive
11) Secretary of the Board of Directors 12) Company Secretary 13) Secretary of the Audit Committee 14) Secretary of the Other Sub-Committee

20.3 Details Position Titles of Directors and Managements of Gunkul Engineering Public Company Limited (continued)

Name	Joint Ventures														Related Companies																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	8	9	10	11									
Name	G-Power Source Co., Ltd.	Gunkul Chubul Powergen Co., Ltd.	Siam Wind Energy Co., Ltd.	WHA Gunkul Green Solar Roof 1 Co., Ltd.	WHA Gunkul Green Solar Roof 2 Co., Ltd.	WHA Gunkul Green Solar Roof 3 Co., Ltd.	WHA Gunkul Green Solar Roof 4 Co., Ltd.	WHA Gunkul Green Solar Roof 5 Co., Ltd.	WHA Gunkul Green Solar Roof 6 Co., Ltd.	WHA Gunkul Green Solar Roof 8 Co., Ltd.	WHA Gunkul Green Solar Roof 9 Co., Ltd.	WHA Gunkul Green Solar Roof 10 Co., Ltd.	WHA Gunkul Green Solar Roof 16 Co., Ltd.	WHA Gunkul Green Solar Roof 17 Co., Ltd.	Gunkul Group Co., Ltd.	Future Electrical Control Co., Ltd.	Kunatee Co., Ltd.	Gunkul Trading and Agency Co., Ltd.	Gunkul Marine Line Co., Ltd.	Gunkul Engineering (2000) Co., Ltd.	G.M. Supply and Construction Co., Ltd.	Siam Gunkul Power Co., Ltd.	Siam Future Co., Ltd.	Happy Green Co., Ltd.	Tech-Green co., Ltd.									
	1. Mr. Gunkul Dhumrongpiyawut														2)					2)	2)	2)												
	2. Dr. Djitt Laowattana																																	
	3. Pol. Maj. Gen Visit Sukrasep																																	
	4. Dr. Chongrak Ranueysong																																	
	5. Miss Sopacha Dhumrongpiyawut	2)		2)	2)	2)	2)	2)	2)	2)	2)	2)	2)	2)	2)			2)					2)	2)	2)									
	6. Dr. Sombon Aueatchasai	2)	2)												2)								2)	2)	2)									
	7. Miss Nuechon Dhumrongpiyawut															2)																		
	8. Mrs. Areewan Chalobandan																																	
	9. Mr. Chalobompon Srichalben																																	
	10. AVM. Dr.Plan Totarong																																	
	11. Mr. Somchai Trairatanapirom																																	
	12. Mr. Decha Chooligorn																																	
	13. Mr. Hathai Uthai																																	
	14. Mr. Phongthep Thitapan																																	
	15. Mr. Phongsakorn Damnoen		2)																															
	16. Mrs. Somluk Kanuenghet																																	
	17. Mr. Thamrong Chankraithong																																	
	18. Mr. Phudis Triwilaskul																																	
19. Mr. Thitipong Techaratanayuenjong																																		
Remarks	1) Chairman of the Board of Directors			2) Director		3) Independent Director			4) Chairman of the Audit Committee			5) Member of the Audit Committee		6) Chairman of the Other Sub-Committee			7) Member of the Other Sub-Committee		8) Chief Executive Officer		9) Executive Director		10) Executive		11) Secretary of the Board of Directors		12) Company Secretary		13) Secretary of the Audit Committee		14) Secretary of the Other Sub-Committee		15) Member of the Audit Committee	

Remarks 1) Chairman of the Board of Directors 2) Director 3) Independent Director 4) Chairman of the Audit Committee 5) Member of the Audit Committee
6) Chairman of the Other Sub-Committee 7) Member of the Other Sub-Committee 8) Chief Executive Officer 9) Executive Director 10) Executive
11) Secretary of the Board of Directors 12) Company Secretary 13) Secretary of the Audit Committee 14) Secretary of the Other Sub-Committee

20.3 Details Position Titles of Directors and Managements of Gunkul Engineering Public Company Limited (continued)

Name	Joint Ventures														Related Companies										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	8	9	10	11
	G-Power Source Co., Ltd.	Gunkul Chubu Powergen Co., Ltd.	Siam Wind Energy Co., Ltd.	WHA Gunkul Green Solar Roof 1 Co., Ltd.	WHA Gunkul Green Solar Roof 2 Co., Ltd.	WHA Gunkul Green Solar Roof 3 Co., Ltd.	WHA Gunkul Green Solar Roof 4 Co., Ltd.	WHA Gunkul Green Solar Roof 5 Co., Ltd.	WHA Gunkul Green Solar Roof 6 Co., Ltd.	WHA Gunkul Green Solar Roof 8 Co., Ltd.	WHA Gunkul Green Solar Roof 9 Co., Ltd.	WHA Gunkul Green Solar Roof 10 Co., Ltd.	WHA Gunkul Green Solar Roof 16 Co., Ltd.	WHA Gunkul Green Solar Roof 17 Co., Ltd.	Gunkul Group Co., Ltd.	Future Electrical Control Co., Ltd.	Kulnatee Co., Ltd.	Gunkul Trading and Agency Co., Ltd.	Gunkul Marine Line Co., Ltd.	Gunkul Engineering (2000) Co., Ltd.	G. M. Supply and Construction Co., Ltd.	Siam Gunkul Power Co., Ltd.	Siam Future Co., Ltd.	Happy Green Co., Ltd.	Tech-Green co., Ltd.
20. Dr. Phairot Phanukan																									
21. Mrs. Nattawan Wongchan																									
22. Mr. Janpon Ngamaroonchote																									
23. Miss Chantira Jongamareeseethong																						2)			
24. Ms. Vijitra Saengpredekorn																									
25. Ms. Suttirat Tangnorakul																									
26. Mr. Sarawut Masrong																									
27. Ms. Kullawee Saenchaihom																									
28. Mr. Tanetsiri Farkmitr																									
29. Mr. Thanapat Wonghiruchayathom																									
30. Ms. Warinthip Rosarpitak																									
31. Mr. Tirdti Boonyayone																									
32. Mr. Wiwat Chanprasit																									
33. Mr. Kittisak Pianpanich																									
34. Mr. Weerayut Chamwong																									
35. Mr. Suwit Rachadorn																									
36. Mr. Maitree Tavorncheep																									
37. Mr. Kitsanapan Piboonwattanakit																									
Remarks	1) Chairman of the Board of Directors	2) Director	3) Independent Director	4) Chairman of the Audit Committee	5) Member of the Audit Committee	6) Chairman of the Other Sub-Committee	7) Member of the Other Sub-Committee	8) Chief Executive Officer	9) Executive Director	10) Executive	11) Secretary of the Board of Directors	12) Company Secretary	13) Secretary of the Audit Committee	14) Secretary of the Other Sub-Committee	Chairman of the Audit Committee	Member of the Audit Committee	Executive Director	Secretary of the Other Sub-Committee	Member of the Audit Committee	Executive	Member of the Audit Committee	Executive	Member of the Audit Committee	Executive	Member of the Audit Committee

20.3 Details Position Titles of Directors and Managements of Gunkul Engineering Public Company Limited (continued)

Name	Related Companies																	
	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1. Mr. Gunkul Dhurongpiyawut	Thonglor 9 Co., Ltd.	Entiry Sap Co., Ltd.	Gunkul Tech Co., Ltd.	Noppakul Co., Ltd.	Great Miracle Asset Co., Ltd.	Great Miracle Asset 2 Co., Ltd.	Great Miracle Asset 3 Co., Ltd.	Great Miracle Asset 4 Co., Ltd.	Great Miracle Asset 5 Co., Ltd.	Great Miracle Asset 7 Co., Ltd.	Great Miracle Asset 8 Co., Ltd.	Great Miracle Asset 9 Co., Ltd.	Great Miracle Asset 10 Co., Ltd.	Great Miracle Asset 11 Co., Ltd.	Great Miracle Asset 13 Co., Ltd.	Pranburi Boulevard Co., Ltd.	Great Miracle Asset 14 Co., Ltd.	Thai Engineering Co., Ltd.
2. Dr. Djitt Laowattana																		
3. Pol. Maj. Gen Visit Sukarasep																		
4. Dr. Chongrak Rarueysong																		
5. Miss Sopacha Dhurongpiyawut																		
6. Dr. Sombon Aueatchasai																		
7. Miss Naruechon Dhurongpiyawut																		
8. Mrs. Areewan Chaloeindan																		
9. Mr. Chalabompon Srichaloen																		
10. AVM. Dr. Pian Totarong																		
11. Mr. Sornchai Trairatanapirom																		
12. Mr. Decha Chooligorn																		
13. Mr. Hathai Uthai																		
14. Mr. Phongthep Thitapan																		
15. Mr. Phongsakorn Damnoen																		
16. Mrs. Somluk Kanuenghet																		
17. Mr. Thamrong Chankraithong																		
18. Mr. Phudis Triwilaskul																		
19. Mr. Thitipong Techaratanyueng																		
Remarks	1) Chairman of the Board of Directors	2) Director	3) Independent Director	4) Chairman of the Audit Committee	5) Member of the Audit Committee	6) Chairman of the Other Sub-Committee	7) Member of the Other Sub-Committee	8) Chief Executive Officer	9) Executive Director	10) Secretary of the Board of Directors	11) Secretary of the Other Sub-Committee	12) Company Secretary	13) Secretary of the Audit Committee	14) Secretary of the Other Sub-Committee	15) Executive	16) Secretary of the Audit Committee	17) Member of the Audit Committee	18) Executive

20.3 Details Position Titles of Directors and Managements of Gunkul Engineering Public Company Limited (continued)

Name	Related Companies																							
	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	Thonglor 9 Co., Ltd.	Entiny Sap Co., Ltd.	Gunkul Tech Co., Ltd.	Noppakul Co., Ltd.	Great Miracle Asset Co., Ltd.	Great Miracle Asset 2 Co., Ltd.	Great Miracle Asset 3 Co., Ltd.	Great Miracle Asset 4 Co., Ltd.	Great Miracle Asset 5 Co., Ltd.	Great Miracle Asset 7 Co., Ltd.	Great Miracle Asset 8 Co., Ltd.	Great Miracle Asset 9 Co., Ltd.	Great Miracle Asset 10 Co., Ltd.	Great Miracle Asset 11 Co., Ltd.	Great Miracle Asset 13 Co., Ltd.	Praburi Boulevard Co., Ltd.	Great Miracle Asset 14 Co., Ltd.	Thai Engineering Co., Ltd.	Apple Wealth Holdings Public Co., Ltd.	Krunghnai Computer Services Co., Ltd.	Sanguthai Gas LPG Co., Ltd.	Integrated Management Consultant Co., Ltd.	DOD Biotech Public Co., Ltd.	Total Industrial Services Co., Ltd.
20. Mr. Phairot Phanukan																								
21. Mrs. Nattawan Wongchan																								
22. Mr. Janpon Ngamaronchote																								
23. Miss Chantira Jongiamareesethong																								
24. Ms. Vijitra Saengpredekorn																								
25. Ms. Suttirat Tangnorakul																								
26. Mr. Sarawut Masrong																								
27. Ms. Kullawee Saenchaihom																								
28. Mr. Tanetsiri Farkmitr																								
29. Mr. Thanapat Wonghirulchayathom																								
30. Ms. Warinthip Rosapitak																								
31. Mr. Tridti Boonyayone																								
32. Mr. Wiwat Chanprasit																								
33. Mr. Kittisak Pianpanich																								
34. Mr. Weerayut Chamwong																								
35. Mr. Suwit Rachadoem																								
36. Mr. Maitree Tavomcheep																								
37. Mr. Kitsanapan Piboonwatanakit																								
Remarks	1) Chairman of the Board of Directors	2) Director	3) Independent Director	4) Chairman of the Audit Committee	5) Member of the Audit Committee	6) Chairman of the Other Sub-Committee	7) Member of the Other Sub-Committee	8) Chief Executive Officer	9) Executive Director	10) Executive	11) Secretary of the Board of Directors	12) Company Secretary	13) Secretary of the Audit Committee	14) Secretary of the Other Sub-Committee										

21. Corporate Governance

21.1 Good Corporate Governance Policy

(Citation to Good Corporate Governance Policy, Revised Version dated on December 29, 2016 and Reviewed Version dated on December 25, 2017)

Our board of directors, sub-committees, corporate governance executive and employees of the organization adhere to the principles of good corporate governance. Therefore, it is a guideline for the operation of the Company in order to determine the quality management system by focusing on transparent disclosure, which will result to standardized performance. Boost productivity to build competitiveness and add value to the owner. These will satisfy the stakeholders. Stakeholders have set “Good Corporate Governance Policy” for the Board of Directors, sub-committees, executives, and employees have adopted the guidelines as follows:

- | | | |
|----|---------------------|--|
| 1. | Accountability | Responsibility for Performance and can explain to the practice. |
| 2. | Responsibility | The full realization of duty and efficiency. |
| 3. | Equitable Treatment | Respect for rights, treatment of stakeholders honestly. And equitably also include opportunities for stakeholders to participate fairly. |
| 4. | Transparency | Disclosure, operation is transparent and can be verifiable. |
| 5. | Value Creation | Value Creation for short and long term, by improving and enhancing competitiveness. |
| 6. | Ethics | Ethics and code of the conduct for operation business. |

This corporate governance policy has been agreed and approved in writing by the board of directors at board meeting 9/2017 on December 18, 2017. For the purpose of preparation and policy matters of Good Corporate Governance to be use as a tracking policy, control and supervision of the delegates to administrative functions by managing the organization’s resources, that is used effectively and effectively targeted. Including the maximize return to all stakeholders are fair. Although, the Board of Directors has regularly reviewed these policies and guidelines on a regular basis and the Company adheres to the principle of good and regular supervision.

The details of the Company’s Good Corporate Governance Practices have conducted and prepared in accordance with good corporate governance principles for the listed companies with continuous improvement of the Stock Exchange of Thailand and the Company has continually reviewed and updated to

ensure that they will compliance with good governance principles. The structure and guidelines of Good Corporate Governance are divided into 5 parts as follows:

Section 1 Shareholder Right

The Board of Directors attaches great importance to the rights of shareholders, without infringing upon or depriving the shareholders of their rights. Both of the shareholders who are major shareholders and minority shareholders, Thai shareholders or foreign shareholders, by the fundamental rights of shareholders including the right to trade and transfer the company's shares, the right to have access to adequate business information, the right to share of the profits of a business, the right to be treated fairly in shares buy back by the company, the right to elect and remove directors, the right to consider on remuneration of directors in all forms, the right to approve the appointment of independent auditor annually, and the right to attend and vote at a shareholder meeting in order to make decision on significant issues that may affect the company such as dividend allocation, amendment to the memorandum and/or articles, reduction or increase of capital, approve the special items, and so on, which are typically defined by state law.

In addition, the Board of Directors has set a policy to facilitate and promote the attendance of shareholders for supporting the shareholders of the Company. Including institutional of the investors and have exercised their basic rights to attend the meeting and exercise their right to vote at the shareholders' meeting as follows:

1) Pre-shareholder Meeting

- The opportunity for shareholders to send their opinions, questions or propose agenda items in advance of the shareholders' meeting. With clearly defined criteria by the information system of the Stock Exchange of Thailand. Also available on the company's website.
- Opportunity for shareholders to nominate persons to be elected as directors in advance of the shareholders' meeting. With clearly defined criteria by the information system of the Stock Exchange of Thailand. Also available on the company's website.
- Arrangement the meeting invitation and supporting documents to the shareholders at least 14-21 days (or any other time as required by the law) and announce the newspaper no less than 3 consecutive days for inform the date to appointment of the shareholders meeting according to the law. The meeting invitation and the supporting documents in both Thai and English versions had been published on the Company's website at least 30 days before meeting date.
- Identify important information in the meeting invitation, such as date, time, Place of the meeting. Agenda details. Be supporting documents with the Board of Directors' opinion Rules for vote counting on each agenda to be in accordance with the law. Proxy form as

required by law list of independent directors, so that shareholders can choose to appoint a proxy to attend the meeting. Statement on how to appoint a proxy to attend the meeting and the voting in the shareholders meeting. A map of the meeting and place. Including the company's regulations about the meeting of shareholders and voting.

2) Action on Shareholders Meeting

- Fix date, time and place of meeting. Taking into account the convenience of the shareholders. And to provide personnel. And technology is adequate for the number of shareholders.

Provide the bar code system and arrange for independent auditors to count the votes or check votes and disclose to the meeting also recorded in the minutes.

- The Chairman will explain the rules used in the meeting. Voting procedure to allocate the meeting time appropriately. Include an opportunity for all shareholders to ask. Provide comments and suggestions. Fully the Board of Directors Audit Committee, sub-committees, relevant executives, auditors, and / or legal counsel. And / or independent financial advisors and / or bank sponsors. (As the case if any) attended the shareholders' meeting to answer the questions in the meeting. Including senior executives, Company secretary, Secretary to Board of Directors attend to the meeting.
- In case the shareholders could not attend the meeting by themselves, the Company gives the shareholders the opportunity to appoint a proxy to the independent director or any person as the Attend the meeting instead.

3) After the Shareholders Meeting

- Disclosure of the resolutions of the shareholders 'meeting and the voting results by the date of the shareholders' meeting in next business day from shareholders' meeting. By the information system of the Stock Exchange of Thailand. Also available on the company's website.
- Do the minutes of the meeting shall be prepared with accurate and complete information stating the issues raised by the shareholders and the Board of Directors 'replies to such questions within 14 days from the date of the shareholders' meeting. And submit the minutes of the meeting to the relevant authorities within the time limit. Also disclose the minutes on the Company's website for shareholders and related parties to verification.

In 2017, the Company held general shareholders' meeting for the year 2017 dated on April 21, 2017, 2nd floor, Chaopraya Park Hotel, No. 247 Ratchadapisek Road, Dindang, Bangkok 10320. There were every director of committees, Directors, Executives, Secretary of every committees and secretary of

company, Auditor representative of financial advisor and representative of Lawyer participate total 39 directors and management executives participating to explain meeting agenda and answer questions from shareholders. The Company assigned Thailand Securities Depository as registrar to send letter of shareholders meeting and related documents to shareholders for at least 21 days in advance before meeting takes place. The Company also published letter of shareholders meeting and related documents via company's website, www.gunkul.com, for at least 30 days in advance, so shareholders can reach related information regarding shareholders' meeting as convenient and as quick as possible.

For registering and voting, the Company uses barcode system and provides revenue stamp for shareholders to send proxy to company with aim to make it fast and convenient to shareholders. In the meeting, the Company explains voting criteria before meeting starts and gives shareholders opportunity to express their opinions and raise questions in relation to the company and agenda.

Section 2 Equally Treatment among Shareholders

The Board has set policies and procedures in various matters. To ensure that all shareholders are treated and protected equally, they are equally protected including the information before the shareholders' meeting, the protection of the rights of minority shareholders Prevention of internal data usage and the prevention of Conflict of Interest, inter-transactions as well as internal controls and internal audits as follows:

1) Pre-meeting information and protection of minority shareholders' rights

- Prepare meeting invitation and meeting documents both in Thai and English by put on the agenda, and opinion of the Board of Directors in the notice of the meeting. And through the information system of the Stock Exchange of Thailand. Also available on the company's website advance at least 30 days before the date of the shareholders' meeting.
- Inform the shareholders of the procedures and rules used in the meeting. Both how to register a proxy and vote.
- Allow the shareholders to send the inquiries. Propose agenda and nominate candidates to be elected as directors in advance of the meeting date. With clearly defined criteria by the information system of the Stock Exchange of Thailand. Also available on the company's website.
- Conduct the shareholders' meeting, according to the agenda set forth in the invitation letter. Without adding unnecessary agenda items advance notice.
- Determine whether the shareholders who are directors or executives disclose information about their interests and related persons. And there is no right to vote on such stake.



2) **Supervision of the use of inside information**

The Company maintains proper use of inside information in accordance with good corporate governance by setting policies and procedures for the support to directors and executives to use internal information of the company. That is not publicly available for personal gain. Including securities trading as follows:

- Notify the Directors and Executives of the Company's reporting obligations and report changes in holding of the Company's securities. Both its spouse and its underage children. To the Office of the Securities and Exchange Commission ("SEC") under Section 59 and penalties under Section 275 of the Securities and Exchange Act BE 1992 (as amended) and submit a copy of this report to the Company Secretary on the same day that, the report is sent to the SEC. Also report to the Good Corporate Governance Committee and the Board of Directors meeting every quarter.
- Fix the directors, executives, employees of the Company and the Group are required to obtain material inside information which affects the price change. Do not trade the company's securities. Prior to the date on which the financial statements or internal information would be made available to the public.
 1. Group of independent directors: not less than 7 days or when receiving the documents for the Board of Directors Meeting Whichever comes first.
 2. Group of executive directors, executives, Employees related to the Company's financial information and the Group. To be aware of or possess internal information: Do not trade securities of the company. From the date of acknowledgment from the Company's financial statements. Due to the financial information. May cause a risky incident or cause the Company to use the internal information.

After the information is publicly available by the Company, It is able to trade the Company's securities after past 24 hours then the person involved in such internal information must not disclose such information to others until information has been provided through, the information system of the Stock Exchange of Thailand.

- Directors, executives and employees of the Company and the Group are prohibited to use internal information of the Company that possible or likely to affect the price of the Company's securities which is not publicly available yet for using to buy or sell and offer for buy or offer to sell, or persuade others to buy or sell. The shares or other securities (if any) of the Company, either directly or indirectly. Also disclose such information to others. Whether or not they receive benefits.

- The Company has imposed significant disciplinary action on the part of the Company who seek the benefit of the Company's internal information. To use or disclose to do or may cause damage to the Company. The punishment should be punished according to the case, including warnings, probation and termination of employment as a result of dismissal, as the case may be, which has been approved by the Board of Directors.

3) Prevention of Conflict of Interest

- Define those who are involved or have an interest in the item considered, must notify to the Company that about relationship or stake in the list. In case of director, they must not participate in the decision. Including no authority to authorize of the transaction.
- For a transaction that causes a conflict of interest that is a trade agreement is not a general trading condition. That must be presented to the Board of Directors for approval. And must comply with the rules of the Capital Market Supervisory Board of The Securities.

And Exchange Commission to The Stock Exchange of Thailand Or any other relevant regulatory authority.

4) Connected Transaction

- If there is a connected transaction, the Company shall comply with the law governing securities and exchange, also the regulations, notifications, orders or requirements of the Capital Market Supervisory Board. The Securities Commission and stock exchange. The Stock Exchange of Thailand or any other relevant regulatory authority. Including compliance with the disclosure requirements of the connected transaction of the Company. In accordance with accounting standards prescribed by the Federation of Accounting Professions.
- In the case, that the connected transactions are normal business transactions and normal business support transactions. With general trading conditions, include items to give or receive financial assistance. A listed company or a subsidiary provides financial assistance to a juristic person in which a listed company or a subsidiary is a shareholder. In proportion to their own interest in that, legal entity under the terms of trade in general or better. To comply with the operating framework approved by the Board of Directors.
- In case of connected transaction is other types of transactions are proposed to the Board of Directors for consideration. By compliance with the rules of the relevant regulatory bodies.

5) Internal control and Internal audit

- The Board of Directors, the Audit Committee and the management have a direct responsibility to provide and maintain an internal control system. It also conducts regular reviews of the effectiveness of the internal control system. To ensure reliable information and financial information system.
- The Company has appointed an internal audit unit. To be responsible for monitoring the performance of the company. To be effective by reporting the results directly to the Audit Committee.
- The Audit Committee has reviewed the appropriateness and adequacy of the internal control system at least once a year and proposed to the Board for consideration and comments in the Annual Report. And Annual Information Disclosure (Form 56-1)

Section 3 Stakeholders Role

The Board of Directors has priority to pay attention to the rights of all stakeholders in accordance with existing laws or agreements with the Company such as, shareholders, customers, trading partners, creditors, competitors, employees, society, communities and the public sectors. Each group as well as business practices under environmental quality standards. Anti-corruption Corruption, Non-infringement of intellectual property, not related to human rights abuses based on the principles of fairness and equality to have all personnel in the Company adhere to a guideline with a mechanisms to follow. There are channels to receive feedback or complaints by defined as a policy or practice. Detail as follows:

1) Rights of all stakeholders according to existing laws or agreements with the Company.

- | | |
|-------------|--|
| Shareholder | : The Company is committed to operate its business with honesty, transparency, morality and ethics by developing business to thrive to create a good return to shareholders and investors in a sustainable and sustainable manner. |
| Customer | : Company has responsibility to customers by maintaining quality and standard of goods and services as well as reacting to customers' need perfectly and completely to maximize customer satisfaction in the long run. |
| Partner | : Company treats trade partners fairly and in line with trade contract and has policy to create and develop relationship with trade partners continuously. |
| Creditor | : Company complies with contract condition and gives information to creditors as per request. |
| Competitor | : Company operates business along with fair competition and develops market to grow for mutual benefit of industry. |

Employee	: Company treats employees equally, gives them proper compensations and creates quality working environment.
Society / Community/ And the environment	: Community and social environment including compliance with relevant laws and regulations. Moreover, the Company has also implemented Corporate Social Responsibility (CSR) for sustainable community development and society.
Government Sector	: The Company is engaged in the business of enhancing and advancing the country's progress by adhering to the relevant laws, rules and regulations.

2) **Communication channels with the Board of Directors in providing clues or complaints**

To make sure that the rights of the various stakeholders are protected. The Board of Directors has provided channels for stakeholders. All parties are encouraged to provide feedback, report clues or complaints about suspected or unlawful actions. Include inaccurate financial reporting or defective internal control system by the Company. That will investigate the facts and take steps to ensure fairness to all parties. The information of the clerk will be kept confidential to protect the notified.

The suggestions or clerk can communicate to the Board of Directors as follows:

Via E-mail : audit_committee@gunkul.com

Via mail : Chairman of the Audit Committee

Gunkul Engineering Public Company Limited

1038-1046 Nakhonchaisri Road, Nakhonchaisri, Dusit, Bangkok 10300

Changed Address:

1177 Pearl Bangkok Building Fl.8

Phahonyothin Road, Phayathai, Phayathai,

Bangkok 10400

3) **Anti-corruption Policy and report clues or complaints**

(Refer to the Anti-Corruption Policy and a clue or complaint date on December 29, 2016 and Reviewed Version dated on December 25, 2017)

The Board of Directors gives priority to anti-corruption. Therefore, the Company is required to prepare "Anti-corruption and clues or complaints Policy" as a guideline for the organization's operations in a transparent, sustainable and integral manner.

The Company and the Group have a policy of forbidding directors, executives, and employees from acting in connection with corrupt practices in various forms, either directly or

indirectly whether as a recipient, contributor, or bribe to the person or organization concerned review policies and guidelines every year in order to be consistent with changing business, regulations, and legal requirements.

Board of Directors responsibilities of the organization's personnel are as follows.

1. **Board of Directors** has the duty and responsibility to formulate policies to oversee and support the anti-corruption process in the organization. To staff the company. Understand and recognize the importance of anti-corruption corruption by instilling culture and values.
2. **Audit Committees** has the duty and responsibility to supervise the implementation of Anti-Corruption measures by reviewing financial reporting and accounting systems, internal control system, internal audit system and risk management that related to Corruption Prevention Measures. Include the corroboration of corrupt practices in which the personnel of the organization are involved. Check the facts as they are informed and propose matters to the Board of Directors for acknowledgment or fix that problem.
3. **Good Corporate Governance Committee** has the duty and responsibility in the frame and review anti-corruption policy. And responsible for directing all personnel in all positions to adhere to the anti-corruption policy, strictly in accordance with the good corporate governance policy.
4. **Risk Management Committee** has the duty and responsibility to supervise and support the implementation of risk management and corruption management. Include risk assessments of operations across all sectors of the organization that to ensure adequate and appropriate review of policies and measures.
5. **Nomination and Remuneration Committee** has the duty and responsibility in the frame. Set on the guidelines for recruitment and consideration with transparency and fairness.
6. **Executive Board and Management** have the duty and responsibility to set up a system and measures to promote and support anti-corruption. To communicate to all employees and stakeholders. Including those with vested interests and provide assessment, review the suitability of systems and measures. To be consistent with changing business, regulations, and legal requirements.
7. **Internal Audit Executive** has the duty and responsibility to review the operation as accurately as possible in accordance with the code of conduct. Rule including the law and Regulator requirements. To ensure that there is adequate control over the risk of potential corruption. And report to the Audit Committee.
8. **Employees** have the duty and responsibility to follow and implement the code of conduct. Including the law and Regulator requirements. Also understands and recognizes the importance of anti-corruption.

The implementation guidelines, Terms of use, Acknowledgments or complaints in relation to the corruption, Corruption Reporting Channel, Protection and confidentiality and the process of receiving complaints, investigations and penalties, as well as the guidelines for the dissemination of anti-corruption corrupt policies, the Company has made a general acknowledgment, according to the documents referenced above, to express its intentions for committing to anti-corruption.

Whistleblowers or complainants in actions that may cause suspicion of corrupt practices that occur with the Company. The clues can be reported via the assigned channels as follows:

Whistleblowers or complainants must provide details of the subject to report clues or complaints (Name or position of the complainant committing a crime time of committing an offense) with the name, address and contact number of the person who made the complaint. And send to the channels to receive channels one way.

- 1) Submit via the audit committee's e-mail : audit_committee@gunkul.com
- 2) Submit via the company's website : www.gunkul.com, click at "complaint channel"
- 3) Submit via the postal mail to : Chairman of the Audit Committee

GUNKUL ENGINEERING PUBLIC CO., LTD.
1038-1046 Nakornchaisri Road,
Nakornchaisri Road Sub-district,
Dusit District, Bangkok 10300

Changed Address:

1177 Pearl Bangkok Building Fl.8
Phahonyothin Road, Phayathai, Phayathai,
Bangkok 10400

- 4) Submit via : "Whistle Blowing and Corruption Complaint"
(The box is set inside the Company: Only the Audit Committee and / or the Secretary of the Audit Committee can be able open the box.)

Measures to protect and maintain confidentiality

In order to protect the rights of complainants and information contributors who act in good faith, the Company will conceal the name, address or any information that may identify the complainant or the data provider. And keep the complainant and the information provider confidential. Only those who are responsible for investigating complaints can access such information. The person receiving the information from the performance of duties related to the complaint. That is the duty of the complainant and the information provider to keep the complaint and confidentiality information confidential. Do not disclose information to anyone who is not involved except as disclosed under the statutory duty.



Section 4 Disclosure of information and transparency

The Board of Directors shall accurately, completely, timely, transparently disclose the important information in compliance with the laws and regulations of Stock Exchange of Thailand and the Securities and Exchange Commission. The information shall include the financial report, general information, and other information affecting the price of the stock and decision of the investors and stakeholders. This is to ensure that all stakeholders could equally access the information. The Company shall circulate the information via the website of Stock Exchange of Thailand and the Company's website.

1) Disclosure of information

The Board of Directors realizes the significance of the accurate, complete, true and reasonable financial report made in accordance with the prevailing accounting standard. Hence, the Board of Directors appoints the Audit Committee to review the financial report for its accuracy, comprehensiveness and reliability. And the Company is obliged to disclose the information in time in accordance with the requirement of the relevant supervising agency.

The Company is obliged to clarify the role of the Board of Directors and all committees, personal information of each committee, the number of meetings of all committees and their attendance, remuneration of the Directors and Executives, committee performance evaluation process and principle, individual committee's development and training, report of the selling, buying and holding of the Company's asset, the annual change of the individual stock possession of the Directors and Executive in accordance with the definition of the Securities and Exchange Commission, etc. The information shall be disclosed in the annual report and the annual information declaration (56-1 Form).

2) Communication channel with the Company's Secretary / Investor Relation

The Company Secretary / Investor Relation

Tel. No. (66) 2 242-5867, (66) 2 242-5868,

E-mail: ir@gunkul.com

Website: www.gunkul.com

In 2017, the Company disclosed information related to the Company through various channels to shareholders and investors to acknowledge accurately and completely, such as informing the Company's operating results and the Group of quarterly and annual Information on investment in various projects, revised policy including the preparation of financial reports and general information of the Company along with a report of the Board of Directors' responsibility for

the financial report, along with the report of the Board of Directors and the auditor's report is included in the annual report to disclose matters in accordance with good corporate governance principles through the annual report and website of the Company etc.

In addition to disclosure in accordance with the requirements of the Securities and Exchange Commission and the Stock Exchange of Thailand, the Company has provided channels of communication to shareholders, investors, analysts both domestically and internationally. With Investor Relations will Communicate and publish information directly.

In 2017, The Company has held quarterly and annual performance reports to its shareholders, investors and analysts (Opportunity Day) for 4 times and publish a press release every time that has the major investment or business activities.

In addition, information disclosure is done via company website www.gunkul.com both in Thai and English so all stakeholders can participate. If interested, you can contact investor relations department at telephone no. 0-2242-5867 and 0-2242-5868 or e-mail ir@gunkul.com

Section 5 Responsibility of the Board of Directors

1. The Board of Directors

According to the charter of the Board of Directors, the composition of the Board of Directors is not less than 5 persons and not more than 12 persons, also not less than one third of directors must be independent directors. At least half of the directors must have a residence in the Kingdom of Thailand. The Board of Directors is appointed by the shareholders' meeting. The term of office is 3 years or from the Board of Directors' meeting, in accordance with the law. The term of office of the independent director who holds the position of director and member of the audit committee is not more than 9 years. The composition of the Board of Directors should be proportionate to the Company's directors with an expertise in various areas suitable for the business and having a balance of power within the Board. Including, they must not engage in a partnership or a director in other juristic persons with the same conditions and conduct business in competition with the business of the Company. In the case of an independent director, the qualifications required to be independent are as specified by the Company and must be equally beneficial to the interests of all shareholders and can also comment freely.

However, Features, Tenure, Scope of Authority and Responsibility including the number of times in the annual meeting of the Board of Directors must comply with the charter of the Board of Directors. The Company Secretary is also required to perform duties in accordance with the criteria set by the relevant regulatory authority.

On December 31, 2017, the Board of Directors consisted of 9 members, consisting of 5 directors, 4 non-executive directors, 1 non-executive independent director, and 3 independent directors. All of who are knowledgeable and experienced, expertise. In the business of the company, there are 3 independent directors who are responsible for balancing the voting power and review the management of the management to maximize the benefits to the Company.

The company has a policy to appointing separate president and managing director to different person aim to balance management authority and prevent unlimited power over other members. The board of directors will determine roles and responsibilities of each position and response to recruit and appoint the right person for the position.

2. Sub-Committees

The Board of Directors shall set up the committees to support and supervise the administration in accordance with the good governance. Details as follow:

2.1) The Audit Committee

According to the Charter of the Audit Committee, the composition of the Audit Committee shall be no less than 3 persons, selected by the independent directors in the Board of Directors. The Board of Directors will appoint the Audit Committee. The term of office is 3 years. The Audit Committee member must have sufficient knowledge and experience to serve as a member of the Audit Committee. Not being a director assigned by the Board of Directors, make decisions on the operations of the Company, subsidiaries, affiliated companies. Major Shareholders or the Company's controlling authority. And not being a director of the parent company, subsidiary of the same order of the listed companies. There must be at least 1 person that has sufficient knowledge and experience to be able to review the reliability of the financial statements.

However, Features, Tenure, Scope of Authority and Responsibility including the number of meetings in the annual meeting of the Audit Committee must comply with the charter of the Audit Committee and set the head of the internal audit to act as Secretary to the Audit Committee.

On December 31, 2017, the Audit Committee comprised of 3 independent directors, appointed by the Board of Directors. The policy is that the person holding the position of Chairman of the Audit Committee shall not be the Chairman of the Board of Directors.

2.2) Risk Management Committee

According to the charter of the Risk Management Committee, the composition of the Risk Management Committee is not less than 3 persons, and one half of the Board of Directors must not be the Company's management and will be appointed by the Board of Directors. The term of office is 3 years, which is selected by a number of directors and / or executives and / or experts. The Risk Management Committee must be knowledgeable in the business of the Company, knowledge and experience in risk management, investment management. This is a very important factor in the Company's business operation in order to achieve the objectives of the Company. The Risk Management Committee shall not be a director, an executive or an operator in the company which operates in the same manner as the Company.

However, Features, Tenure, Scope of Authority and Responsibility including the number of times in the annual meeting of the Risk Management Committee must comply with the charter of the Risk Management Committee.

On December 31, 2017, the Risk Management Committee consisted of 4 members, consisting of 2 non-executive directors and 2 executive directors. The Company has the policy to appoint the Chairman of the Risk Management Committee and not Chairman of the Board.

2.3) Nomination and Remuneration Committee

According to the charter of the Nomination and Remuneration Committee, the composition of the Nomination and Remuneration Committee must be no less than 3 persons and more than half of which shall not be the Company's management. The Board of Directors will appoint the Nomination and Remuneration Committee also the term of position is 3 years. This is selected from a number of directors and / or executives of the Company. And / or qualified The Nomination and Remuneration Committee must be a competent person. Personnel Management Have the skills, expertise and experience in relevant work.

However, Features, Tenure, Scope of Authority and Responsibility including the number of times in the annual meeting of the Nomination and Remuneration Committee must comply with the charter of the Nomination and Remuneration Committee.

On December 31, 2017, the Nomination and Remuneration Committee consisted of 4 members, consisting of 3 non-executive directors and 1 executive director. The policy is to nominate persons to serve as chairmen of the Nominating and Remuneration Committee. The return must not be the Chairman of the Board and must be an independent director.



2.4) The Corporate Governance Committee

According to the charter of the Good Corporate Governance Committee, the composition of the Good Corporate Governance Committee must be no less than 3 persons and not be the management of the Company. The Board of Directors will appoint the Corporate Governance Committee. The term of office is 3 years, selected from a number of directors and / or management of the Company and / or qualified persons. Good Corporate Governance Committee members must be knowledgeable in Corporate Governance and use the knowledge as well as the experience of working as a good corporate governance committee to achieve the objectives of the Company. However, Features, Tenure, Scope of Authority and Responsibility including the number of time the annual meeting of the Good Corporate Governance Committee must comply with the charter of the Good Corporate Governance Committee.

On December 31, 2017, the Good Corporate Governance Committee consists of 3 non-executive directors. The Company has the policy of appointing a person holding the position of Chairman of the Good Corporate Governance Committee and not Chairman of the Board.

2.5) Executive Committee

According to the charter of the Executive Board, the composition of the Executive Committee shall not be less than 5 persons. The Board of Directors shall appoint the Executive Committee is select from a number of directors and / or executives of the Company and / or the qualified persons. Moreover, it must not be a member of the Audit Committee and the term of office is 3 years. The Executive Committee must be a person with knowledge, ability and experience that would be beneficial to the Company's business also to be honest and ethical in conducting business. It must not be a director, an executive or an entrepreneur in the same business as the Company unless the entity is a subsidiary, joint venture or joint venture of the Company. Also, Features, Tenure, Scope of Authority and Responsibility including the number of times in the annual meeting of the Good Corporate Governance Committee must comply with the charter of the Good Corporate Governance Committee.

On December 31, 2017, the Executive Committee has 5 members. The Company has the policy that the Chairman of the Board of Directors shall not be the Chairman of the Executive Committee in order to create a balance between management and good corporate governance.

3. Board Meetings

1) Board of Directors

The Board of Directors requires that at least 6 meetings, be held every quarter to consider the financial statements in accordance with the law. And may hold additional meetings as deemed appropriate by the Chairman. And there should be meetings between independent directors and auditors to discuss the issues about the management in the organization at least once a year. Also, non-executive directors must meet at least once a year, with no executive and management directors attending the meeting. To discuss the issues related to responsibilities and responsibilities, all directors are required to attend the Board of Directors' meetings unless than 75% of the annual meeting.

There should be unless than one quorum of the Board of Directors present at the meeting, so that the meeting can be opened. There must be at least 2 in 3 of the total number of directors attending the meeting. The Chairman of the Board serves as chairman of the meeting and if the chairman of the board is not present at the meeting or is unable to perform his duties. The Board of Directors selects one director to serve as the chairman of the meeting. All directors have the opportunity to discuss and express their opinions openly. In the event that directors of the Company, stakeholders are significantly involved in the subject matter under consideration. The director must leave the meeting during the consideration of the matter.

To vote by resolution of the Board of Directors' meeting, the votes should be counted as follows:

- (1) In the general case, the resolution of the Board of Directors is composed of majority votes. If the votes are the same, the chairman of the meeting shall have the casting vote.
- (2) In case of replacement of vacant seats. The resolution of the Board of Directors consists of votes of unless than 3 in 4 of the remaining directors.

The directors who have conflict of interest in the consideration must abstain from voting on such matters.

2) Audit Committee

The Board of Directors requires an Audit Committee meeting at least once a quarter. Additional meetings may be convened by the Chairman of the Audit Committee. At the meeting, there must be at least on half of the members of the Audit Committee attending the meeting to constitute a quorum. The Chairman of the Audit Committee chairs the meeting



and if the Chairman of the Audit Committee is not present at the meeting or is unable to perform his duties. One of the members of the Audit Committee is to preside over the meeting. In the meeting of the Audit Committee with related agenda or other relevant agenda, the Company's auditor and the Company's internal auditor also top management in accounting must be participate for clarity, completeness, reliability for preparing the financial statements.

To vote, majority of the members of the Audit Committee who attend the meeting and cast their votes. One member of the Audit Committee has one vote. If the votes are the same, the chairman of the meeting shall have the casting vote. The Audit Committee with vested interests in the consideration will have to abstain from voting on that matter.

3) Risk Management Committee

The Board of Directors requires that, the Risk Management Committee meet at least 4 times a year, and held additional meetings as deemed appropriate, by the Chairman of the Risk Management Committee. At the meeting, at least on half of the members of the Risk Management Committee shall be present at the meeting. The Chairman of the Risk Management Committee chairs the meeting.

If the Chairman of the Risk Management Committee is not present at the meeting or is unable to perform the duties, the Risk Management Committee also selects one, Risk Management Committee to chair the meeting.

To vote the majority of the members of the Risk Management Committee attend the meeting and cast their votes. One Risk Management Committee member has one vote. If the votes are the same, the chairman of the meeting shall have the casting vote. The Risk Management Committee has a stake in the consideration will have to abstain from voting on that issue.

4) Nomination and Remuneration Committee

The Board of Directors requires at least 2 meetings a year of the Nomination and Remuneration Committee, and held additional meetings as deemed appropriate by the Chairman of the Nomination and Remuneration Committee. At the meeting, there must be at least on half of the members of the Nomination and Remuneration Committee to attend the meeting. The Chairman of the Nomination and Remuneration Committee chairs the meeting. If the Chairman of the Nominating and Remuneration Committee is not present at the meeting or is unable to perform duties, the Nomination and Remuneration Committee selects one of the Nomination and Remuneration Committee members to chair the meeting.

To vote the majority of the members of the Nomination and Remuneration Committee attend the meeting and cast their votes. One member of the Nomination and Remuneration Committee has one vote.

If the votes are the same, the chairman of the meeting shall have the casting vote. The Nominating and Remuneration Committee with vested interests in the subject matter will have to abstain from voting on such matters, except for the consideration of remuneration for all committees.

5) Good Corporate Governance Committee

The Board of Directors requires a meeting of the Corporate Governance Committee at least 4 times a year. Additional meetings may be held as the Chairman of the Good Corporate Governance Committee deems appropriate. At the meeting, a good corporate governance committee member must attend not less than on half of the total number of the members of the Corporate Governance Committee to constitute a quorum. The Chairman of the Good Corporate Governance Committee presides over the meeting. If the Chairman of the Good Corporate Governance Committee is not present at the meeting or is unable to perform the duties, the Good Corporate Governance Committee selected one of the good corporate governance committees to chair the meeting.

To vote the majority vote of the members of the Good Corporate Governance Committee who attend the meeting and vote. One good Corporate Governance Committee member has one vote. If the votes are the same, the Chairman of the meeting shall have an additional vote as a casting vote. Good Corporate Governance Committee with vested interests in the subject matter will have to abstain from voting on such matter.

6) Executive Committee

The Board of Directors requires that, the Executive Board meetings must be held at least once a month. There must be executive director approval. In less than on half of the total number of the members, a quorum is convened although the Chairman of the Executive Committee shall preside over the meeting.

If the Chairman of the Executive Board is absent or unable to perform the duties, the Executive Director will select one of the Executive Directors to chair the meeting.

To vote, the majority of the Executive Directors who attend the meeting and cast their votes.

The one executive director has one vote. If the votes are the same, the chairman of the meeting shall have the casting vote. Executive Directors with vested interests in the subject matter will have to abstain from voting on that issue.

At the meeting of the committees, every committee has to clear agenda. The meeting documents are sufficient and submitted to the Board of Directors at least 7 days in advance, so that the Board of Directors has sufficient time to study the information before attending the meeting and may request additional information. Unless urgent need to maintain the rights or benefits of The Company will inform the meeting by other means and set the date faster.

The Company will schedule the meeting in advance every year to make an appointment with each director in advance. The minutes of the meeting were certified by the Board of Directors and authenticated by the Chairman of the Board and filing the original and digital document to facilitate the directors and related parties can check the reference. The Company shall disclose details of the number of meetings and the meeting's attendance for past year of the director that will be show in the annual report and annual registration statement.

In 2017, the Company held a meeting of shareholders and each committee. By the way, should be set the agenda to be clear. The meeting documents are sufficient and sent to the Board of Directors at least 7 days in advance, so that the Board of Directors has sufficient time to review the information before attending the meeting. Adding an agenda after the delivery of a document, only be possible on very justified grounds and must be approved by the Chairman of the Board. In summary, the number of meetings for 2017 is as follows:

Meeting type	Number of meetings
1) Annual General Meeting of Shareholders, 2017	1 Time
2) Extraordinary General Meeting of Shareholders	-
3) Board of Directors Meeting	9 Times
4) Meeting between non-executive directors and the auditor to discuss issues related to corporate governance	1 Time
5) Meeting during non-executive directors to discuss and exchange ideas about issues related to responsibilities	1 Time
6) Audit Committee Meeting	6 Times
7) Risk Management Committee Meeting	4 Times
8) Nomination and Remuneration Committee Meeting	2 Times
9) Good Corporate Governance Committee Meeting	4 Times
10) Executive Board Meetings	22 Times

The details of the directors attending the meeting individually including the remuneration for each director are summarized in “Title 19 Management Structure” of this Annual Report.

4. Limitation of the number of the registered company in which the Director of the Company could serve as its director

To effectively execute the Board of Directors' performance, the policy is to limit the number of listed companies in which each director does not hold more than 5 directorship positions, and requires the executive directors to hold director positions in listed companies outside the group of companies not over 2 companies.

5. Determination of the remuneration

The “Compensation Policy of All Committees” policy is designed to provide a framework and guidelines for determining the remuneration of each committee. The compensation should be consistent with experience, obligations, scope of roles and responsibilities. (Accountability and Responsibility) The criteria are comparable to the level of performance in the same industry. To ensure that, the level and composition of the compensation is appropriate and sufficient to motivate and maintain the quality committee as desired.

Principles and consideration criteria

The Board of Directors assigns the Nomination and Remuneration Committee to propose the Remuneration of all committees to the Board of Directors for their approval. Then, the proposal shall be considered in the shareholders' meeting for the approval under the following criteria:

1. Role, scope, authority and responsibility of Board of Director and each committee.
2. The collective and individual performance of the committees.
3. The operational performance of the Company, based on the type and size of the Company's business.
4. The remuneration survey, in comparison with other companies in the same industry.

Components of remuneration

To reflect the duties, responsibility and mission of the committees, the components of remuneration determination are composed, can divided 3, such as Meeting attendance fee, Annual remuneration and Bonus or other similar remunerations.



Remuneration Determination Process

The Board of Directors sets up the remuneration determination process to comply with the principle of good governance based on transparency and accountability. The consideration process is as follows;

1. The Nomination and Remuneration Committee considers and determine the remuneration in accordance with the principle in item 4.
2. The Nomination and Remuneration Committee proposes the remuneration rate to the Board of Directors for the approval.
3. The Board of Directors approves and proposes the remuneration rate to the Shareholders' meeting for the approval.
4. The shareholders' meeting approves the remuneration rate.

The amount of remuneration in 2017 that the Company paid to directors and executives (Details as shown in the "Management Structure" section 19 of this Annual Report)

6. Performance evaluation of the Board of Directors, committees and CEO

All committees shall evaluate their own performance to be a guideline for development and improvement to expand the work of the committees to cover all aspects in compliance with the Company's business operation.

The Board of Directors shall evaluate the performance of the Chairman of the Administration Committee in comparison with the corporate goal and the individual competency. The evaluation shall be based on the qualitative factors such as leadership, strategy creation and implementation, planning, performance, relationship with the Directors, relationship with outside agency, administration, relationship with the personnel, succession, knowledge of product and service, as well as the individual qualification. The evaluation process and principle shall be annually considered by each set of committees.

1) Performance evaluation of the Board of Directors

The Board of Directors has the policy to determine the performance of the Board of Directors by self-assessment, collectively and individually, as follows;

- Self-evaluation of each set of Committee
To evaluate the collective performance of the whole Committee
- Self-evaluation of the individual Committee
To evaluate the individual performance of individual committee

2) Performance evaluation of the committee

The Board of Directors has the policy to set the committee to self-evaluate the performance by providing a group assessment. The purpose is to evaluate the work of the subcommittee in the overall of the faculty.

3) Performance evaluation of the CEO

The Board of Directors has the policy for the Board of Directors to evaluate the performance of the CEO.

4) Processes and criteria for evaluation

The procedures and criteria for the evaluation will be reviewed by every board each year. The process and criteria for the evaluation for the CEO will be reviewed by the Board of Directors every year. In 2017 The Board of Directors and the Sub-committees determine the process and criteria for self-assessment and for the CEO as detail below;

The Process of Self-Assessment and Performance Evaluation

The Board of Directors and Sub-committees determine the process of self-assessment and evaluation of performance of the CEO is as follows:

Process of Self-Assessment of the Board of Directors and Sub-committees and the CEO

1. The Board of Directors requires the self-evaluation form of the Board of Directors, both group and individual. And there is a self-assessment form of self-evaluation by individual committees. In addition, the form of performance appraisal of the Chairman of the Executive Committee, which is the top management of the organization, is set out once a year to serve as a framework for evaluating the performance of the Executive Committee. And / or good practice. Also used as a tool to review and improve the performance over the past year.
2. The Board of Directors shall approve and review the performance appraisal form of the Board. Including the performance evaluation form of the Executive Chairman. The sub-committee shall approve and revise the self-assessment form of the faculty. To be accurate, complete and in accordance with the rules prescribed by the regulatory body.
3. Company secretary, the self-assessment form of the Board of Directors and the form of performance appraisal of the Chairman of the Executive Board shall be submitted to the Board of Directors. Including Sub-committee secretary. Deliver the self-assessment form of the faculty. Within December every year.
4. The Company's Board of Directors made the self-assessment form of the Board of Directors and the performance evaluation form of the Chairman of the Executive Committee. Including committees of committees. Make a self-assessment and return the secretary to the subcommittee. Within January of every year.

Process of Self-Assessment of the Board of Directors and Sub-committees and the CEO

5. Company Secretary / Secretary to the Board Summary the results of the assessment and input into the agenda of the Board of Directors. To analyze the performance evaluation results of the Board of Directors. Subcommittee and the Executive Chairman.
6. Secretary to the Board of Directors / Secretary to the Board of Directors Takes further analysis and comments from the Board of Directors. To make a plan to carry out the improvement.

Criteria for Self-Assessment and Performance Evaluation

The criteria used in the performance appraisal of the Board of Directors, the subcommittees and the CEO is as follows:

Self-Assessment form The Board of Directors		Self-Assessment Form Audit Committee	
Evaluation content	Number of items	Evaluation content	Number of items
Group		Group	
1. Structure and Qualifications of the Board of Directors	15	1. Structure and Qualifications of the Audit Committee	5
2. Roles and Responsibilities of the Board of Directors	22	2. Audit Committee Meeting	6
3. Board of Directors' Meetings	9	3. Roles and responsibilities of the Audit Committee	9
4. The duties of the Board of Directors	7	4. Relationship with Management	4
5. Relationship with Management	5	5. Self-Development of the Audit Committee	4
6. Self-Development of Directors and Management Development	6		
Total	64		28
Individually			
1. Structure and Qualifications of the Board of Directors	2		
2. Board of Directors' Meetings	4		
3. Roles and Responsibilities of the Board	5		
Total	11		

Self-Assessment Risk Committee		Self-Assessment form Nomination and Remuneration Committee	
Evaluation content	Number of items	Evaluation content	Number of items
Group		Group	
1. Structure and Qualifications of the Risk Management Committee	7	1. Structure and Qualifications of the Nomination and Remuneration Committee	7
2. Risk Management Committee Meeting	6	2. Nominating and Remuneration Committee Meetings	6
3. Roles and Responsibilities of the Risk Management Committee	6	3. Roles and Responsibilities of the Nomination and Remuneration Committee	7
Total	19		20

Self-assessment form of Good Corporate Governance Committee		Evaluation form of the Executive Chairman (CEO)	
Evaluation content	Number of items	Evaluation content	Number of items
Group		Section 1: Progress of the Plan	Specify goals and status
		Section 2: Performance Measurement	
1. Structure and Qualifications of the Good Corporate Governance Committee	7	1.1 Leadership	6
		1.2 Strategic Planning	6
2. Good Corporate Governance Committee Meeting	6	1.3 Compliance Strategy	6
3. Roles and Responsibilities of the Good Corporate Governance Committee	5	1.4 Planning and Financial Performance	6
		1.5 Relationships with the Board	6
Total	18	1.6 External Relations	5
		1.7 Administration and relations with personnel	6
		1.8 Succession	3
		1.9 Product and service knowledge	4
		1.10 Private feature	6
			54
		Section 3: Development Executive Chairman	Specify comment
		3.1 The strengths that the CEO should maintain	
		3.2 Issues that the CEO should receive. Develop more in the next year.	

To allow the Board of Directors, the sub-committees and the CEO compare the results of each topic or compare the results of each year. The scoring method is as follows: (Score 4 points or equal 100%)

0	= Strongly disagree or no action on that issue
1	= Disagree or take action on that matter a bit
2	= Agree or take action on that matter fairly
3	= Quite agree Or have a good deal on it
4	= Strongly agree Or have a great deal about it

7. Development of Directors and Executives of the Company

The Company has a policy to encourage all directors and executives to be trained to increase their knowledge under the good corporate governance. The training can be done within the company or training from outside institutions. The directors / audit committee must attend courses related to the Duties of the Company's Director / Audit Committee.

8. Orientation of new directors and support for training

The Company is aware of the importance of the duties of the new director. The new directors are required. All you have to join "Orientation for new entrants" as required by the Company. The Company will provide information and lectures on the Company's business. Including other relevant information for the directors who have been appointed to the position of the Company are acknowledged. There are important contents, including the roles and responsibilities of all committees. Holding and trading securities of directors Report of Directors' Benefits Meeting management Information Disclosure. Contact with compensation management and the benefits to directors and sub-committees, Power grid and general information of the company including the Charter of the Audit Committee, Charter of the Internal Audit Department, Scope of Authority and Responsibilities of the Internal Audit Department and inter-measure measures etc.

9. Report of the Board of Directors

9.1 The board of directors of the company is responsible for the consolidated financial statements of the company and its subsidiary companies and financial information disclosed in the annual report. Such financial report is prepared in accordance with generally accepted accounting principles in Thailand while the accounting policy is appropriately selected and complied in a consistent manner and the audit committee and the auditor will jointly and regularly review the accounting policy complied to ensure suitability.

The chairman of the board of directors of the company shall disclose the following information in the annual report and the annual information sheet.

- 9.2 Responsible for the Company's major information disclosure. The information affects stock prices or important to investment decisions, or affect the benefits of shareholders.
- 9.3 Responsible for the disclosure of charter of all committees and policies of the Company.
- 9.4 Responsible for disclosing the following items in the annual report and the annual report.
 - 1. Process and criteria on performance assessment of the board of directors of the company as a whole basis or an individual basis.
 - 2. Number of the meetings arranged and number of attendance to the meeting of each director.
 - 3. Remuneration of each director.
 - 4. Information on development and training of the directors of the company on an individual basis during the year.
 - 5. Report on sale and purchase and holding of securities of the company and changes in holding during the year of the directors of the company and the executives in accordance with the definition of the Office of Securities and Exchange Commission on an individual basis.
- 9.5 To be responsible for reporting any other items that the Board of Directors deems appropriate to the shareholders and general investors, subject to the scope of authority and responsibility assigned by the shareholders.

The Board of Directors is of the opinion that, financial reports of the company. And its subsidiaries as on December 31, 2017 are accurate, complete and reliable.

10. The supervision of operation of the subsidiaries / affiliates

According to the Company's regulations, the nomination and election of the Director of the subsidiaries / affiliates requires the approval of the Board of Directors. The appointed Director of the subsidiaries / affiliates shall operate the business for the utmost benefits of the subsidiaries / affiliates. The Company requires the appointed Director to obtain the approval from the Board of Directors prior to the vote casting of the important agenda which normally requires the approval of the Board of Directors, if the Company considers such agenda by itself. The appointment of the Directors to operate the business, as a representative of the Company, in the subsidiaries / affiliates shall be according to the share-holding proportion of the Company.

In case of the subsidiaries, the Company shall supervise the appointed Director to set up the regulations for the related transactions, the gain or disposal of asset or any important transactions of the subsidiaries, so that the transactions would be accurately carried out. The regulations shall be based on the same principles of the Company with regard to the similar transactions and information disclosure. The appointed Director shall supervise the information and accounting records of the subsidiaries to ensure their accountability. The financial information of the subsidiaries shall be delivered to make the collective financial statement of the Company in time.

11. Supervision and risk management policy

The Board of Directors realizes the significance of the risk management. It is directly obliged to manage the risk of the organization to support the effective operation of the Management until it achieves the organizational goals. As the organization may face the business uncertainty affecting the Company's objectives/goals, the Board of Directors determines the relevant risk management policy and framework in all aspects to cover all risk factors.

The Board of Directors has set the risk management policy and framework in all aspects and covers the risk factors of the business by setting guidelines within the company. This is based on the chance of occurrence and the severity of the impact, risk reduction, regular reporting and monitoring and evaluation processes, including the emphasis on early warning signs.

Policy Objectives and Scope

1. To be the framework for enterprise risk management of the Company and Group of Companies as well as to be the guidelines for practicing enterprise risk management of the Company and Group of Companies to be in accordance with the entire organization bases on law, rules and regulations of the relevant sectors, including to anticorruption according to the principles of Good Corporate Governance.
2. To lead to the actual practice and the harmony with enterprise risk management and internal control which is considered the significant component of the Company and Group of Companies' activity.
3. To determine roles and responsibilities for controlling the determined risk appropriately.
4. This policy shall be effective with all operation of directors, executives and all employees in organization.

Roles and Responsibilities

1. Board of Directors is responsible for the overall regulation and monitoring the enterprise risk management operation appropriately and regularly via risk management committee.
2. Audit committee supports the Board of Director to perform enterprise risk management operation by reviewing the enterprise risk management policy whether it is appropriate and effective or not.
3. Executive committee is responsible for considering and reviewing the enterprise risk management and internal control system of the Company and Group of Companies.
4. Chairman of the Executive committee is responsible for performing according to the policy, regulating the organization to strictly practice and monitoring the constant implementation as well as crating the awareness of risk and enterprise risk management to become the organizational culture.
5. Risk management committee is responsible for creating the confidence that the significant enterprise risk is regularly determined and evaluated, including having the effective risk management by responsible for the following matters: Set policy, practice and framework for enterprise risk management for the Company and Group of Companies to be the guidelines for business operation to be in accordance with securities and exchange law, the regulations of SET or the relevant laws to the business operation of Company and Group of Companies, including the measure and practices of anticorruption, Monitor, follow up and support the achievement of enterprise risk management in organizational level to the project level considering the risk of each aspect to evaluate, analyze and make decision to ensure that there is the risk management that concludes all processes of business operation, review practice and framework for enterprise risk management comparing to the international practice and propose suggestion to the Board of Director for the revision as appropriate, consider the review of risk and guidelines for risk management of the Company and Group of Companies as the agency has evaluated the risk, including give recommendation for revision, monitor the effectiveness of enterprise risk management of the Company and Group of Companies by having continual monitoring and review, report the risk with the highest and high level to the President of Executive Committee, Executive Committee, Audit Committee and Board of Directors.
6. Internal audit team is responsible for review the effectiveness of the internal risk control trough the annual internal audit, which is the monitoring of business process bases on the risk factors, including revise the fault.
7. All executives and employees are responsible for identifying, analyzing, evaluating and sorting the risk of department they are in charge of, including determine the appropriate measure of risk management as it is the part of responsible job.



The Company has disclosed and disclosed information on major risk factors in the annual report, which covers risks in every aspect. The Board of Directors has assigned the Risk Management Committee to formulate policies and operational framework for risk management.

The Company (Risk Management Framework) as well as the roles and responsibilities of the management by overseeing and supporting risk management at the organizational level. As well as the project level. Raise the importance of risk-based considerations and assess each factor to make proper use of resources and processes to align with the direction of the organization and enhance risk management capabilities. Throughout the organization

In addition, the Board of Directors has assigned the Audit Committee to review the internal control system and internal audit to ensure that the operation is effective. And cover all sides. Both accounting and finance. Property Care working, Operation is legal, related regulations. The Internal Audit Department is responsible for assessing risk and assessing control activities at the operational level within the organization. Include a review of financial reports and risk management information by reporting to the Audit Committee on a quarterly basis.

Moreover, the Company has appointed a management team to enable the organization to carry out concrete work to achieve the objectives and goals set. The scope of duties and responsibilities are as follows:

1. Has the duty to support the performance of the Risk Management Committee.
2. Define policies and guidelines for risk management. Prepare risk management plan. Risk assessment, recommend preventive measures and solutions.
3. Analyze, identify, and evaluate operational risks of the Company. Include risk prioritization, management plan, recommendations for improvement, to reduce the risk.
4. The Communicate understanding of the risk management plan to the company's personnel. Can be practically implemented.
5. Monitor the implementation of measures in each line. Provides a systematic risk management process across all lines of business and reduce the impact on the business of the company.

12. Business ethics

(Cited by Business Ethics Policy Revised Version dated on February 7, 2017 and Reviewed Version dated on December 25, 2017 and February 23, 2018)

The Board of Directors shall establish the system to ensure that the Company's operation shall comply with the laws and good ethic. That shall acknowledge all employees about the business morality and ethic framework. It shall regularly review the moral practice in response to the changing expectation of the company and shareholders. Moreover, it shall disclose the morality and ethic framework in the company's business ethic policy. The Board of Directors shall establish the good ethic practice, so that all Directors, Executives and employees acknowledge and comply with that.

The Board of Directors has prepared a "policy on (Business Ethics Policy) and Good Code of Conduct for Ethics to communicate to every board. All management and employees acknowledge and comply with them. The Board has approved and approved a review of the Business Ethics Policy. For the Board of Directors Meeting No. 9/2017 on December 18, 2017 and No. 1/2018 on February 21, 2018, the objective is to prepare and review the policy as follows:

1. To guide the work in accordance with the ethics beyond Business Elements and Code of Conduct.
2. To create and maintain relationships and responsibilities for all stakeholders including shareholders, employees, customers, trading partners, creditors, competitors, society, communities and the environment also participants for making a mutual benefit.
3. To understand the principles and practices of the private interests of directors, executives and employees as well as the interests of the Company and the Group without conflict of interest.
4. To create security and safety in health, work, the environment and the protection of corporate assets.

This policy sets the framework for action to be used as a guideline for achieving the same goal by defining the vision and mission of the organization, Business Ethics including Anti-Corruption, Ethics of Directors Management and staff, Ethics for Stakeholders which covers responsibilities for shareholders, employees, customers, partners, competitors, safety, health and environment in the organization. And responsibilities to the community and the environment including the guidelines for clarity, convenient for directors, executives and employees of the Company to be aware of the standards of practice that the Company expects and adhere to as a guideline for its operations for every involved with all stakeholders.

The Company determines the duties and responsibilities of all directors, executives and employees to understand and comply with the policies and practices set forth in the Code of Business Conduct. The meeting was organized to clarify, media outreach and do activities to continually understand. To get the employees of the company to acknowledge and understand the importance of compliance with the business ethics policy, the Company requires the executives in charge of the organization to take the responsibility for the employees under their supervisory line to understand and promote to comply with the Code of Business Ethics and all employees must act as a good example. In addition to the Code of Business Conduct set out in the Business Ethics Handbook, the Company has created Corporate Shared Values for employees to enhance their corporate values and culture. It is a clear recommendation for employees to understand which one they need to do or ignore. This is consistent with the policies set out in the Business Ethics Handbook. This makes the practice more concrete and if the personnel of the Company are failure to do so is a violation of the Company and the Group's regulations and also require a review of "Business Ethics Policy" annually.

Responsibilities towards Customers

The Company and its group are required to treat the customers, both public and private sectors, with responsibility on procurement of quality and standard products and services to satisfy the needs and to enhance satisfaction of the customers with practice guideline as follows.

- 1) Products and services procured and delivered in accordance with the standard specified by the supervisory agency and the agreement made with the customers at the fair and suitable price.
- 2) Warranty on the products made under the specified conditions and period.
- 3) System and process is arranged to accept complaints related to the products or services of the company and its group from the customers with management system prepared to rapidly solve the problems related to the complaints.
- 4) Information of the customers is systematically and safely stored with measure to safeguard the confidential information of the customers and is not allowed to be utilized for personal gain or by the related person illegitimately.
- 5) Accurate and sufficient information, message and recommendation on products and services of the company and its group is provided to the customers with channel of continued distribution of information related to the products and services to the customers.

Responsibilities towards Trading Partners / Creditors

Responsibilities towards Trading Partners

The Company and its group have arranged a practice guideline to treat the trading partners in a fair and equitable manner with regard to fair treatment to both parties and to avoid any incident with conflict of interest. The practice guideline is as follows.

- 1) Selection of trading partners is based on fair and equitable basis.
- 2) Strict compliance with conditions agreed with the trading partners, debtors and/or creditors.
- 3) Support no products or acts of infringement on intellectual property.
- 4) Receiving or giving items or any benefit is based on the traditional practice or period without any influence on the decision of the company and its group

Responsibilities towards Creditors

The Company and the Group have a policy to adhere as the following conditions.

- 1) Treat with creditors fairly, equal and transparently without exploiting creditors of the Company.
- 2) Do not conceal any material or factual information that may cause damage to creditors.
- 3) Comply with the terms of the agreements with creditors correctly.
- 4) If any of the conditions cannot be met, must notify to the creditor in advance in order to find solutions by using the principle of reasonableness.
- 5) Repay the loan and / or interest to the creditors in full and in accordance with the agreed time.
- 6) Do not take any illegal action with creditors.
- 7) Do not cooperate or support any person or organization that do illegal business or endanger to the society or the security of the country.

Responsibilities towards Trade Competitors

The Company and its group have arranged the practice towards the trade competitors under the legal framework related to trade competition practice as follows.

- 1) To comply with the rules on trade competition.
- 2) Not to take advantage of the confidential information of the trade competitors with improper method.
- 3) Not to damage the reputation of the trade competitors.
- 4) To strictly comply with the law on intellectual property

13. Leadership and Vision

Board of directors recommends company to have vision, mission, goal, policy, operational Direction, long-term strategy and plan & annual budget by assigning executive management to present and board of directors to comment and discuss to get common agreement before approval. Board of directors appoints president of executives to develop and implement business strategy. Role, duty and responsibility of board of directors, sub-committee and executive committee are needed to be identified reviewing at least every years.

According to the resolution of the Board of Directors Meeting No. 9/2017, held on December 18, 2017, the Board reviewed the Company's vision and mission. The amendments have been amended as follows.

Vision

To become the leading producer of electricity from renewable energy, including the manufacturer and provider of equipment for energy system and energy saving products that enhance maximum needs and satisfaction among clients and stakeholders

Mission**1. Renewable Energy**

Do business on renewable energy power plants in efficiency standards with focusing on social and environmental.

2. Sales

Provide equipment for power systems and channel of distribution, including full-option services that meet the customers' needs.

3. Technology

Develop manufacturing techniques and adopt new production technology to improve productivity and reduce production costs Increase capability and adopt Information technology to respond promptly to fast moving business environment.

4. Return

Maximize shareholders' and stakeholders' value and profitability.

5. Personal

Increase employees' capability to enhance the Company's competitiveness on a global scale and retain talent employees.

6. Management Framework

Create a strong management framework based on principles of good corporate governance.

21.2 Sub-committee

The Board of Directors has appointed 5 sub-committee, Audit Committee, Good Corporate Governance Committee, Nomination and Remuneration Committee, Risk Management Committee and Executives Committee are in the details as follows:

1) The Audit Committee

As of December 31, 2017, the Audit Committee comprised of three independent directors by taking in each term not more than 3 years as defined by the Board of Directors. The members of the Audit Committee are as follow;

Name list			Position
1.	Dr. Djitt	Laowattana ¹⁾	Chairman of the Audit Committee (Independent Director)
2.	Pol.Maj.Gen.	VisitSukarasep	Member of the Audit Committee (Independent Director)
3.	Dr. Chongrak	Rarueysong ¹⁾	Member of the Audit Committee (Independent Director)
4.	Mr. Tanetsiri	Farkmitr	Secretary of the Audit Committee

Remarks ¹⁾ Audit Committee who has knowledge and experience in auditing on the Company's financial statements.

Scope of Authority, Duties and Responsibilities

Board of directors of the company assigns the audit committee with the authority as follows.

1. To perform the duty within the scope of authority and responsibility indicated within the charter of the audit committee
2. To examine and investigate any matter as necessary and to ask for information of the company as necessary to undertake the work within the duty and responsibility of the audit committee completely

Duty and responsibility of the audit committee

1. The audit committee is a subcommittee assigned by the board of directors with duty and responsibility as follows.
 - (1) To review the financial report of the company to ensure accuracy and reliability, including sufficient disclosure through coordination with the external auditor and the executives of the company responsible for preparation of the financial report, both quarterly and annually.

- (2) To review the internal control and the internal audit system of the company to ensure suitability and efficiency in coordination with the external and internal auditors and to examine the independence of the internal audit unit or the other responsible agency related to internal audit and to provide consent on appointment, rotation, dismissal chief of the internal audit unit or other responsible agency related to internal audit.
- (3) To review compliance with law on securities and stock exchange, requirements of the stock exchange or the laws related to the business of the company.
- (4) To examine, select, propose for appointment of the independent person to perform the duty of the auditor of the company, to examine the remuneration of the auditor with consideration on reliability, sufficiency of resources and quantity of the audit work of such auditor and experience of the person assigned to examine the accounts of the company, to dismiss and require the audit committee to arrange a meeting jointly with the external independent auditor without the management in the meeting at least once a year.
- (5) To examine the related transactions or the transactions with conflict of interest in accordance with the laws and requirements of the stock exchange to ensure that such transactions are justified and beneficial to the company.
- (6) To review compliance with anti-corruption policy to ensure efficiency, to examine the outcome of the review on fraud and to provide the company a channel receive complaint on fraudulent act and to promote and encourage risk awareness and assessment, preparation of the preventive system and examination system.
- (7) To assess performance of the audit committee, to provide recommendations on development and improvement to the board of directors for acknowledgment and information to determine the policy on continued development of the organization.
- (8) To review the charter of the audit committee and the charter of the internal audit division annually.
- (9) To prepare an activity report of the audit committee for disclosure in the annual report of the company and such report will be signed by the chairman of the audit committee.
 - Comments on accuracy, completeness and reliability related to preparation process and disclosure in the financial report of the company.
 - Comments on sufficiency of the internal control system of the company.
 - Comments on compliance with laws on securities and stock exchange, requirements of the stock exchange or laws related to the business of the company.
 - Comments on suitability of the auditor.
 - Comments on transactions with possible conflict of interest.
 - Overall comments or remarks that the audit committee has learned from the duty performed in accordance with the charter.

- Number of meetings of the audit committee and attendance to the meeting by each audit committee, including remuneration received by each audit committee.
 - Other reports that the audit committee has viewed that the shareholders and the investors should know within the scope of authority and responsibility assigned by the board of directors of the company.
- (10) To examine the matter informed by the auditor of the company for the case that is doubtful that the director, manager or the person responsible for the operation of the company has involved in the wrongdoing as indicated in the Securities and Exchange Act (No.4) B.E. 2551 and to prepare the preliminary finding report to the Office of Securities and Exchange Commission and the auditor within 30 days since the date that it is informed by the auditor.
 - (11) To perform the duty, the audit committee may ask for independent opinion from the other professional consultant as deemed necessary at the expense of the company.
 - (12) To perform any other duty assigned by the board of directors of the company with approval from the audit committee such as review of the policy on financial management and risk management, review of compliance with the business ethics of the executives, joint review with the executives of the company on key matters to be presented to the public as required by the laws such as report and analysis of the executives.
2. The audit committee is required to arrange the meeting to examine the assigned matters as follows.
- (1) To review the financial statements and related financial reports, accounting principles and accounting methods, compliance with accounting standards, continuity of the business, change in major policy, including justification of the management related to the accounting policy to present to the board of directors of the company for approval on the financial statements before distribution to shareholders and investors.
 - (2) To review the transactions with possible conflict of interest such as transactions with related company.
 - (3) To review the internal control system and the internal audit system.
 - (4) To review the annual internal audit plan of the company, assessment of the examination jointly with the internal auditor and the independent auditor.
 - (5) To examine the problems or restrictions incurred during the examination jointly with the internal auditor and to review the performance of the internal auditor.
 - (6) To examine the problems or restrictions incurred from the financial statements examined jointly with the internal auditor.
 - (7) To examine whether the plan to review the method and control on electronic data processing and security maintenance project jointly with the internal auditor and the auditor.



- (8) To review the policy and sufficiency in key risk management of the company jointly with the management.
- (9) To review the financial management policy of the company.
- (10) To comply with the laws on public limited company, laws and/or notification on securities and stock exchange and other related laws and/or notifications.
- (11) To perform any other task assigned by the board of directors of the company.
- (12) To assess the performance of the audit committee in relation to the duty and responsibility assigned by the board of directors of the company.
- (13) To jointly assess and consider the performance, reward and penalty of the chief of the internal audit division with the management.
- (14) To review the charter of the audit committee and the charter of the internal audit division as deemed necessary or at least once a year.
- (15) To report the tasks performed by the audit committee to the board of directors of the company.

For the responsibility of the audit committee to perform the duty in accordance with this charter, the audit committee directly reports to the board of directors of the company and the directors of the company are still held responsible for the operation of the company to the public.

Qualifications of Audit Committee and Independent Directors

The independent director who is appointed as a director and audit committee will be independent from management and major shareholders of the Company. It is required to possess the following qualifications.

1. Not to hold shares over one percent of the total shares with voting right of the company, the parent company, the subsidiary company, the affiliated company, the major shareholder or the person with power to control the company, including shares of the related person of such independent director as well.
2. Not to be or used to be the director participating in the management, the employee, officer, advisor with regular salary or the person with power to control the company, the parent company, the subsidiary company, the affiliated company, the subsidiary company of the same level, the major shareholder or the person with power to control the company unless it has not possessed such qualification at least two years before the date of appointment as the independent director. Such forbidden qualification does not include the case that such independent director used to be a government officer or advisor of the government agency which is the major shareholder or the person with power to control the company.

3. Not to be the person with lineage relationship or with legal registration in the nature of being the father, mother, spouse, brother and sister and children, including spouse of the children of the other director, executive, major shareholder, the person with control power or the person proposed to be the director, the executive or the person with power to control the company or subsidiary company.
4. Not to be or used to have business relationship with the company, the parent company, the subsidiary company, the affiliated company, the major shareholder or the person with power to control the company of which the nature may obstruct his independent judgment and not to be or used to be the shareholder with significant shareholding or the person with power to control the those having business relationship with the company, the parent company, the subsidiary company, the affiliated company, the major shareholder or the person with power to control the company unless it has not possessed such qualification at least two years before the date of appointment as the independent director.

The business relationship in the first paragraph includes the business transaction made regularly to undertake the business, lease out or lease of the immovable, transaction related to property or service or financial assistance provided or accepted through borrowing or lending, guarantee, property provided as a collateral on debt, including other behavior of the same nature which will cause the company or trading partner to have the liability to pay to the pother party at three percent of the net tangible asset value of the company or twenty million baht or more, whichever the lower. The computation of such liability is in accordance with the computation of the value of the related transaction in accordance with the notification of the capital market supervision committee on criteria on undertaking the related transactions, implicitly. However, such liability will include the liability incur one year before there is the business relationship with the same person.

5. Not to be or used to be the auditor of the company, the parent company, the subsidiary company, the affiliated company, the major shareholder or the person with control power or the partner of the auditing office of which supervises the auditor of the parent company, the subsidiary company, the affiliated company, the major shareholder or the person with control power of the company unless it has not possessed such qualification at least two years before the date of appointment as the independent director.
6. Not to be or used to be the person providing any professional service, including legal consulting service or financial service with service charge over two million baht per year from the company, the parent company, the subsidiary company, the affiliated company, the major shareholder or the person with power to control the company and not to be the shareholder with significant shareholding, the person with control power or the partner of those providing such professional

service unless it has not possessed such qualification at least two years before the date of appointment as the independent director.

7. Not to be the director appointed to be the representative of the director of the company, the major shareholder or the shareholder who is related to the major shareholder of the company.
8. Not to significantly undertake the business similar to and in competition with the business of the company or the subsidiary company or not to be the partner with significant stake in the partnership or the director participating in the management, the employee, the officer, the advisor with regular salary or to hold shares over one percent of the total shares with voting right of the other company significantly undertaking the business similar to and in competition with the business of the company or the subsidiary company.
9. Not possess any qualification which could obstruct the independent opinion related to the operation of the company.

After he is appointed the independent director with qualifications in accordance with the first paragraph (1) to (9), the independent director may be assigned by the board of directors to make a decision to undertake the business of the company, the parent company, the subsidiary company, the affiliated company, the subsidiary in the same level, the major shareholder or the person with control power of the company through the collective decision.

2) The Good Corporate Governance Committee

As of December 31, 2017, the Good Corporate Governance Committee comprised of three independent directors as follow;

Name list	Position
1. Dr. Chongrak Rarueysong	Chairman of the Good Corporate Governance Committee (Independent Director)
2. Mr. Phongthep Thitapan	Member of the Good Corporate Governance Committee (Independent Director)
3. Mr. Somchai Trairatanapirom	Member of the Good Corporate Governance Committee (Independent Director)
4. Miss Chandra Jongjamareeseethong	Secretary of the Good Corporate Governance Committee

Scope of authority, duties and responsibilities

The board of directors of the company has determined the scope of authority, duties and responsibilities of the good corporate governance committee as follows.

1. To determine policies, guidelines and framework on good corporate governance of the company, including other work undertaken and related to good corporate governance such as sustainable management, social responsibility, anti-corruption measures and guidelines to the board of directors of the company.
2. To supervise and monitor to ensure that the company, corporate group, committee, executives, employees and stakeholders have complied with the policies and guidelines provided and with the laws or requirements related to good corporate governance principles, anti-corruption measures and guidelines, business conducts and ethics through continued appropriate development.
3. To review the guidelines in accordance with good corporate governance principles of the company in comparison with the international guidelines and to provide recommendations on appropriate improvement to the board of directors of the company.
4. To propose the board of directors of the company, sub-committee and the management with rules and criteria on good corporate governance, business conducts and ethics, and proper business practices.
5. To encourage and support the company to distribute the good corporate governance principles, including information on related matters consistently so the sub-committee, the executives and every level of employees will acknowledge and understand.
6. To promote and support the company to participate in the assessment or ranking contest on good corporate governance to develop and upgrade the good corporate governance standard of company continuously.
7. To assess performance of the good corporate governance committee, to provide recommendations on development and improvement to the board of directors for acknowledgment and information to determine the policy on continued development of the organization.
8. To review the charter of the good corporate governance committee annually.
9. To prepare an activity report of the good corporate governance committee for disclosure in the annual report of the company and such report will be signed by the chairman of the good corporate governance committee.
 - (1) Overall comments or remarks that the good corporate governance committee has learned from the duty performed in accordance with the charter.

- (2) Other reports that the good corporate governance committee has viewed that the shareholders and the investors should know within the scope of authority and responsibility assigned by the board of directors of the company.
 - (3) Number of meetings of the good corporate governance committee and attendance to the meeting by each good corporate governance committee, including remuneration received by each good corporate governance committee.
10. To perform the duty, the good corporate governance committee may ask for independent opinion from the other professional consultant as deemed necessary at the expense of the company.
 11. To perform any other task assigned by the board of directors of the company.

3) The Risk Management Committee

As of December 31, 2017, the Risk Management Committee comprised of four persons including independent and executive directors as follow;

Name		Position
1.	AVM.Dr.Pian Totarong	Chairman of the Risk Management Committee (Independent Director)
2.	Miss Sopacha Dhumrongpiyawut	Member of the Risk Management Committee
3.	Mr. Somchai Trairatanapirom	Member of the Risk Management Committee (Independent Director)
4.	Mr. Thitipong Techaratanayuenyong	Member of the Risk Management Committee & Secretary

Scope of authority, duties and responsibilities

The board of directors of the company has determined the scope of authority, duties and responsibilities of the risk management committee as follows.

1. To determine policies, guidelines and framework on risk management of the company as a guideline to undertake the business in accordance with the law on securities and stock exchange, requirements of the stock exchange or the laws related to the business conducted by the company, including anti-corruption measures and practice.
2. To supervise, monitor and support the organization and the project to accomplish the success in risk management with consideration on each risk to support the assessment, analysis and decision to ensure that the risk management process has covered every step of the business undertaken.

3. To review the guidelines and framework on risk management in comparison with the international practice and to provide recommendations on correction and improvement as deemed suitable to the board of directors of the company.
4. To assess performance of the risk management committee, to provide recommendations on development and improvement to the board of directors for acknowledgment and information to determine the policy on continued development of the organization.
5. To review the charter of the risk management committee annually.
6. To prepare an activity report of the risk management committee for disclosure in the annual report of the company and such report will be signed by the chairman of the risk management committee.
 - (1) Overall comments or remarks that the risk management committee has learned from the duty performed in accordance with the charter.
 - (2) Other reports that the risk management committee has viewed that the shareholders and the investors should know within the scope of authority and responsibility assigned by the board of directors of the company.
 - (3) Number of meetings of the risk management committee and attendance to the meeting by each risk management committee, including remuneration received by each risk management committee.
7. To perform the duty, the risk management committee may ask for independent opinion from the other professional consultant as deemed necessary at the expense of the company.
8. To perform any other task assigned by the board of directors of the company.

4) The Nomination and Remuneration Committee

As of December 31, 2017, the Nomination and Remuneration Committee comprised of four persons including independent and executive directors as follow;

Name		Position
1.	Pol. Maj. Gen. Visit Sukarasep	Chairman of the Nomination and Remuneration Committee (Independent Director)
2.	Mr. Decha Chooligorn	Member of the Nomination and Remuneration Committee (Independent Director)
3.	Mr. Hathai Uthai	Member of the Nomination and Remuneration Committee (Independent Director)
4.	Mrs. Somluk Kanuenghet	Member of the Nomination and Remuneration Committee & Secretary



Scope of authority, duties and responsibilities

The board of directors of the company has determined the scope of authority, duties and responsibilities of the nomination and remuneration committee as follows.

1. To determine policies, criteria and process on recruitment, selection and nomination of the person with suitable qualification in accordance with related laws and regulations to take the post as the director of the company, the committee in various sub-committee with clear and transparent criteria in congruent with the business strategy of the company for submission to the meeting of shareholders or the board of directors of the company for approval or appointment as applicable in accordance with the requirements of the company.
2. To determine policies, criteria and guidelines on remuneration, methods of payment of remuneration and benefits to the board of directors of the company and the sub-committee suitable to the duties and responsibilities for the company for submission to the meeting of shareholders or the board of directors of the company for approval as applicable in accordance with the requirements of the company.
3. To review the structure, criteria related to recruitment and remuneration to ensure suitability with the duties and responsibilities and performance of the company.
4. To consider and propose the succession plan of the top executives of the organization from the managing director or higher to the board of directors of the company for approval.
5. To assess performance of the nomination and remuneration committee, to provide recommendations on development and improvement to the board of directors for acknowledgment and information to determine the policy on continued development of the organization.
6. To review the charter of the nomination and remuneration committee annually.
7. To prepare an activity report of the nomination and remuneration committee for disclosure in the annual report of the company and such report will be signed by the chairman of the nomination and remuneration committee.
 - (1) Overall comments or remarks that the nomination and remuneration committee has learned from the duty performed in accordance with the charter.
 - (2) Other reports that the nomination and remuneration committee has viewed that the shareholders and the investors should know within the scope of authority and responsibility assigned by the board of directors of the company.
 - (3) Number of meetings of the nomination and remuneration committee and attendance to the meeting by each nomination and remuneration committee, including remuneration received by each nomination and remuneration committee.

8. To perform the duty, the nomination and remuneration committee may ask for independent opinion from the other professional consultant as deemed necessary at the expense of the company.
9. To perform any other task assigned by the board of directors of the company.

5) Executive Committee

As of December 31, 2017, the Executive Committee comprised of five persons as follow;

Name list			Position
1.	Ms. Sopacha	Dhumrongpiyawut	Chief Executive Officer
2.	Mr. Somboon	Aueatchasai	Executive Director
3.	Ms. Naruechon	Dhumrongpiyawut	Executive Director
4.	Mr. Chaloepon	Sricharoen	Executive Director
5.	Mrs. Areewan	Chaloemdan	Executive Director

Scope of authority, duties and responsibilities

The board of directors of the company has determined the scope of authority, duties and responsibilities of the executive committee as follows.

1. To determine policies, guidelines, framework, target, business plan, management structure, rules and regulations, authority, duty, approval authority and budget, including supervision, examination, monitoring and review of the operation of the company in accordance with vision, mission, strategy and policy of the board of directors and in compliance with the laws on securities and stock exchange, requirements of the stock exchange or laws related to the business conducted by the company, requirements of the company, including anti-corruption measures and guidelines.
2. To determine regulations, policies and guidelines on corporate social responsibility to look after the society, community and environment.
3. To screen, approve or agree with the key business conducted in a normal course of business and management of the company within the scope of authority provided.
4. To determine the working regulations of the employees of the company without any conflict with related regulations and laws.
5. To approve the structure of the office and salary and other benefits of the employees and to approve the management structure of the division level or lower.
6. To screen, consent or approve the annual budget plan, to supervise and monitor the operation in accordance with the policy, target and budget plan approved.



7. To ensure that the internal control system of the company is suitable and proper.
8. To screen, consent or approve the investment and/or participation in the bidding contest of new projects and to undertake the project as deemed suitable and to enter into a juristic act related to such matter until its completion within the scope of authority provided.
9. To screen, consent or approve the joint venture with the person, juristic person and/or group of persons in any form to undertake the business in accordance with the objectives of the company, including enter into the juristic act related to such matter until its completion within the scope of authority provided.
10. To screen, consent or approve the appointment or employment of the advisor, including the expert outside the organization to provide opinions and undertake any act related to the business conducted by the company.
11. The executive committee may assign its authority and appoint a special working group, group of persons, executive or any person to undertake any work within the duty and responsibility as deemed suitable to the executive committee.
12. To authorize the management, special working group, group of persons, executive or any person as a substitute to undertake any act but not the approval on the related transaction or the transaction with possible conflict of interest or the transaction with conflict of interest as indicated in the regulations of the company, policy, rules and regulations and notifications of the Capital Supervision Commission as the approval on the transaction of such nature is required to be submitted to the meeting of the board of directors and/or the shareholders to examine and approve such transaction in accordance with the regulations of the company or the related laws unless it is an approval on the transaction of which the nature is a normal course of business of the company and in accordance with the policy and criteria approved by the board of directors.
13. To assess performance of the executive committee, to provide recommendations on development and improvement to the board of directors for acknowledgment and information to determine the policy on continued development of the organization.
14. To prepare an activity report of the executive committee for disclosure in the annual report of the company and such report will be signed by the chairman of the executive committee.
 - (1) Overall comments or remarks that the executive committee has learned from the duty performed in accordance with the charter.
 - (2) Other reports that the executive committee has viewed that the shareholders and the investors should know within the scope of authority and responsibility assigned by the board of directors of the company.

- (3) Number of meetings of the executive committee and attendance to the meeting by each executive committee, including remuneration received by each executive committee.
15. To perform the duty, the executive committee may ask for independent opinion from the other professional consultant as deemed necessary at the expense of the company.
16. To perform any other task assigned by the board of directors of the company.

Board of directors may appoint other sub-committee as per necessity. Scope of authority of each sub-committee has to be clear and specific as sub-committee should be close to issue or problem than others.

21.3 Selection and Appointment of Directors and Executives

Selection of Board of Directors

Though the Company doesn't have director search committee, the company's board of directors handles that job by using following criteria, knowledge, capability, experience, vision, creditability and professional qualification (no ban manner), to select director and then propose to shareholders' meeting for approval. The Company sets key criteria for director search as follow;

1. Board of directors comprises of at least 9 persons in which at least half of that must have residence in Thailand and directors must have qualifications as law said
2. Director search by shareholders' meeting is based on majority vote as follow;
 - 2.1 One shareholder has voting right equivalent to one share, one vote
 - 2.2 Shareholder votes director on one-on-one basis
 - 2.3 Director search is based on highest-scored ranking. In the case that qualified persons get same scores and exceed number of directors required, chairman of meeting has final decision.
3. In every annual shareholder meeting, one third of directors are required to resign. If total directors can't be divided by three, use close amount of directors to resign. Directors who are required to resign in the first year and second year use lucky draw technique. For the following years after that, directors who are in position for the longest period have to resign. However, directors who resign may be selected again.
4. Director has right to get compensation from company in term of reward, meeting fee, pension fund, bonus or other compensations as defined by rules or resolution from shareholders' meeting either in term of fixed amount or general concept. Moreover, director also gets allowance and fringe benefit on top of normal benefits like salary and bonus as employee.

5. Director who wants to resign sends resignation form to company. It will be effective once company accepts. Director may give resignation notice to register person.
6. In case that director position is vacant due to extra reasons (not term expired), board of directors can select qualified person with no banned manner as replacement director in next meeting of board of directors, except director's term has less than two months left. Such replacement director will be in the position for time equivalent to remaining term of previous director. This resolution from board of director requires at least three fourth of remaining directors.
7. If shareholders want director to resign, it needs to get vote from shareholders' meeting of at least three fourth of total shareholders attending the meeting and total voting right and have a share of not less than half of the total number of shares held by the shareholders who attend the meeting and have the right to vote.

Audit Committee/Independent Directors Selection

Regarding to the selection of Audit Committee, Board of directors or shareholders' meeting will select persons to be a committee in selecting audit committee in which such committee must have at least 3 persons from audit committee by selecting from independent directors. Audit committee has 3 year term but may get renewal from board of directors or shareholders' meeting. Among audit committee, there is at least 1 person who has knowledge and experience in financial & accounting background, so he/she can do financial statement review.

Good Corporate Governance Committee Selection

In the part of best corporate governance committee selection, the board of directors or the meeting of shareholders should appoint the committee members which all of them are the independent directors who are not directly involved in doing company business. In order to comply with the principles of good corporate governance and to provide fairness and transparency auditing for the company, it has been defined that the good corporate governance committee must have service period of 3 years. However, they may be appointed by the board of directors or the meeting of shareholders to continue his/her tenure roles and responsibilities as the good corporate governance committee. The good corporate governance committee will be considered by their qualifications in deep knowledge in the company's business area, experiences in corporate governance, and expertise in policy formation in order to ensure compliance with the good governance principles.

Risk Management Committee Selection

In the part of risk management committee selection, the board of directors or the meeting of shareholders should appoint the committee members consist of 2 independent directors and 2 managing directors. The directors must have well understanding of the organization's risk and the independent directors must able to advise the global types of risk management to the company. It has been defined that the risk management committee must have service period of 3 years. However, they may be appointed by the board of directors or the meeting of shareholders to continue his/her tenure roles and responsibilities as the risk management committee. The risk management committee will be considered by their qualifications in deep knowledge in the company's business area, skill and expertise in accounting and financial in policy formation in order to concretely implement risk management.

Nomination and Remuneration Committee Selection

In the part of the nomination and remuneration committee selection, the board of directors or the meeting of shareholders should appoint the committee members consist of 3 independent directors and 1 executive management. The executive management will be appointed to oversee the Division of Human Resources. It has been defined that the nomination and remuneration committee must have service period of 3 years. However, they may be appointed by the board of directors or the meeting of shareholders to continue his/her tenure roles and responsibilities as the nomination and remuneration committee. The nomination and remuneration committee will be considered by their qualifications in deep knowledge in the company's business area, skills and experiences in legal, expertise in developing such remuneration and nominations policy and structure. The information obtained from the database of Consultant Company will be used for the purpose of nomination and remuneration in the organization to compatible with internationally-recognized standards.

Executive Committee Selection

Board of directors appoints executive committee in which executive committee comprises of 3 at least and 6 at most by selecting from directors or employees or capable persons who are no audit committee. Executive committee has responsibility to manage company as per assignment from board of directors. Executive committee directly reports to board of directors.

However, the selection of all committer, the company will consider from select committee who are expert and has qualification in wide range of professional skill, special expertise, and deep knowledge in the company's business area in order to obtain policy guidelines, recommendations, and continuous improvement company processes to compatible with internationally-recognized standards.



The policy of “Nomination and appointment of Directors and Executives” is prepared to serve as a framework and guideline in nomination of the qualified and competent Directors and executives suitable to the Company’s demands in compliance with the Good Governance. In addition, the policy shall promote the effective management to lead the Company to the sustainable progress and development. Including, directors or executives of the Company must never be an employee or partner of an external audit firm that has been in service for the past two years.

Principles on nomination and appointment

1) Qualification of Directors and committees

The qualification of Directors and committees shall be in accordance with each committee’s charter, the laws, the requirements of the relevant supervising agency and the Company’s association.

2) Qualification of executives

- The executives shall have knowledge, capability, experience and specialized qualification necessary and beneficial to the organization’s business operation.
- The executives have leadership and intuitive vision.
- The executives shall be capable in preparation of strategy and organization management.

3) To be recognized by the relevant business organization.

Nomination and Appointment Process

The Board of Directors sets up the nomination and appointment process to comply with the principle of good governance based on transparency and accountability. The consideration process shall be as follows;

- 1) The Nomination and Remuneration Committee considers and nominates the committees and/or the high-ranked executives of the organization in accordance with the principle.
- 2) The Nomination and Remuneration Committee proposes the personal data and qualification of the committee to the Board of Directors for the approval.
- 3) The Board of Directors approves the appointment of the committee.
- 4) In case of the nomination of the Director retired by rotation or the nomination of the Director in replacement of the retired Director whose term is less than 2 months to propose to the shareholders’ meeting for the appointment.

In the process of recruiting, The Company has a policy of using Professional Search Firm or Director Pool to nominate new directors for the selection and appointment process.

According to the Company's policy, the Company allows the minor shareholders to propose the qualified person to serve as the Director in the Ordinary General Meeting of Shareholders. In this regard, the Company shall notify of the proposal through the system of the Stock Exchange of Thailand, so that the shareholders are notified thereof in advance of the meeting day.

Executive Recruitment and Appointment

The board assists management in making policy and selection criteria for the position of managing director and policy to emergency succession or the retirement of managing director. The selection process will be clear and transparency. The selection criteria for the position will be considered by knowledge, experiences, abilities, ethics and leadership. The Nomination and Remuneration Committee are assigned to propose the qualified person for appointing as managing director.

The managing director was assigned to recruit the best candidates with extensive knowledge, skills, and experience for the position of executive in accordance to the properties and methods of selection defined by the company.

21.4 The Company's Share Trading and Securities Holdings Report

The board of directors defined that the Company must prepare and report the trade and transfer the company's shares/securities to the board meeting of the good corporate governance committee and the board of directors in all meeting. The guidelines are set out in the charter of each committee, in the "Business Ethics Policy" and "Good Corporate Governance Policy", in order to be aware of the general practice. The detail is as follow;

Report on the Holding of Securities of the Company's Directors and Senior Executives for 2017

Number	Director / Executive Director Name ^(A)	Relation	Type of Securities	Number of shares that held at the beginning of the year ¹⁾	2017 Dividend Stock (6 ordinary shares: 1 : stock dividend)	Number of shares that purchased during 2017	Number of shares that sold during 2017	Number of shares that held at the end of the year ^{2) 3)}
1.	Mr. Gunkul Dhumrongpiyawut	Director	Common Share Warrant	265,022,337 27,209,693	44,170,389.50 -	400,000 -	- (15,118,500.00)	309,592,727 -
2.	Dr. Djitti Laowattana	Director (Independent Director)	Common Share Warrant	1,481,486 13,888	246,914.33	100,000 -	(100,000.00) -	1,728,400
3.	Pol.Maj.Gen. Visit Sukarasep	Director (Independent Director)	Common Share Warrant	- -	- -	- -	- -	- -
4.	Dr. Chongrak Rarueysong	Director (Independent Director)	Common Share Warrant	- -	- -	- -	- -	- -
5.	Miss Sopacha Dhumrongpiyawut	Director / Senior Executive	Common Share Warrant	- -	- -	- -	- -	- -
6.	Dr. Sornboon Aueatchasai	Director / Senior Executive	Common Share Warrant	24,000,000 -	4,000,000	- -	- -	28,000,000 -
7.	Miss Naruechon Dhumrongpiyawut	Director / Senior Executive	Common Share Warrant	307,996 4,583	51,332.67	- -	- -	359,328 -
8.	Mrs. Areewan Chaloemdan	Director / Senior Executive	Common Share Warrant	- -	- -	- -	- -	- -
9.	Mr. Chaloepon Srichaoren	Director	Common Share Warrant	- -	- -	- -	- -	- -
10.	Mr. Phongsakorn Damnoen	Senior Executive	Common Share Warrant	34,767,196	4,544,533	-	(7,500,000.00)	31,811,728 -

Remark ¹⁾ Ordinary Shares and Warrant at the Closing Date of XO January 4, 2017

²⁾ Ordinary shares as of the closing date of XO on December 19, 2017 and Warrant on XO closing date on September 4, 2017

³⁾ Warrants that have been expired; therefore, there will be no remaining warrants at the end of the year.

^(A) Director / Executive

Report on the Holding of Securities of the Company's Directors and Senior Executives for 2017 (continued)

Number	Director / Executive Director Name ^(A)	Type of Securities	Relation to ^(A)	Number of shares that held at the beginning of the year ⁽¹⁾	Stock Dividend 2017	Number of shares that purchased during 2017	Number of shares that sold during 2017	Number of shares that held at the end of the year ⁽²⁾	Relation to ^(A)	Number of shares that held at the beginning of the year ⁽¹⁾	Stock Dividend 2017	Number of shares that purchased during 2017	Number of shares that sold during 2017	Number of shares that held at the end of the year ⁽²⁾
1.	Mr. Gunkul Dhummongpiyawut	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
2.	Dr. Djitt Laowattana	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
3.	Pol.Maj.Gen. Visit Sukrasep	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
4.	Dr. Chongrak Rauveysong	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
5.	Miss Sopacha Dhummongpiyawut	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
6.	Dr. Sombon Aueatchasai	Common Share Warrant	Spouse	2,912,000 5,500	485,333.33	-	- (5,000.00)	3,397,333	Underage	-	-	-	-	-
7.	Miss Naruechon Dhummongpiyawut	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
8.	Mrs. Areewan Chalobandan	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
9.	Mr. Chalcompon Sircharoen	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
10.	Mr. Phongsakorn Damnoen	Common Share Warrant	Spouse	240,000	40,000	-	-	280,000	Underage	-	-	-	-	-

Remark ¹⁾ Ordinary Shares and Warrant at the Closing Date of XO January 4, 2017

²⁾ Ordinary shares as of the closing date of XO on December 19, 2017 and Warrant on XO closing date on September 4, 2017

³⁾ Warrants that have been expired; therefore, there will be no remaining warrants at the end of the year.

^(A) Director / Executive

Report on the Holding of Securities of the Company's Directors and Senior Executives for 2017 (continued)

Number	Director / Executive Director Name ^(a)	Relation	Type of Securities	Number of shares that held at the beginning of the year ¹⁾	2017 Dividend Stock (6 ordinary shares: 1 : stock dividend)	Number of shares that purchased during 2017	Number of shares that sold during 2017	Number of shares that held at the end of the year ^{2,3)}
11.	Mrs. Somluk Kanuenghet	Senior Executive	Common Share Warrant	-	-	-	-	-
12.	Mr. Thamrong Chankraithong	Senior Executive	Common Share Warrant	-	-	-	-	-
13.	Mr. Phudis Triwitsakul	Senior Executive	Common Share Warrant	-	-	-	-	-
14.	Mr. Thitipong Techaratanayuenyong	Senior Executive	Common Share Warrant	-	-	-	-	-
15.	Dr. Phairot Phanukan	Senior Executive	Common Share Warrant	-	-	-	-	-
16.	Mrs. Nattawan Wongchan	Senior Executives	Common Share Warrant	-	-	-	-	-
17.	Mr. Janpon Ngamarnochote	Senior Executive	Common Share Warrant	-	-	-	-	-
18.	Miss Chantira Jongiamareeseethong	Company Secretary/ Senior Executive	Common Share Warrant	-	-	-	-	-
19.	Ms. Sutirarat Tangnorakul	Account Executive	Common Share Warrant	-	-	-	-	-

Remark ¹⁾ Ordinary Shares and Warrant at the Closing Date of XO January 4, 2017

²⁾ Ordinary shares as of the closing date of XO on December 19, 2017 and Warrant on XO closing date on September 4, 2017

³⁾ Warrants that have been expired; therefore, there will be no remaining warrants at the end of the year.

^(a) Director / Executive

Report on the Holding of Securities of the Company's Directors and Senior Executives for 2017 (continued)

Director / Executive Number Director Name ^(A)	Type of Securities	Relation to ^(A)	Number of shares that held at the beginning of the year ⁽¹⁾	Stock Dividend 2017	Number of shares that purchased during 2017	Number of shares that sold during 2017	Number of shares that held at the end of the year ⁽²⁾	Relation to ^(A)	Number of shares that held at the beginning of the year ⁽¹⁾	Stock Dividend 2017	Number of shares that purchased during 2017	Number of shares that sold during 2017	Number of shares that held at the end of the year ⁽²⁾
11. Mrs. Somluk Kanuengthet	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
12. Mr. Thamrong Chankraithong	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
13. Mr. Phudis Triwilaskul	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
14. Mr. Thiipong Techaratanayuenyong	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
15. Dr. Phairot Phanukan	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
16. Mrs. Nattawan Wongchan	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
17. Mr. Janpon Ngamaroonchoite	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
18. Miss Chantira Jongjamaresesethong	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-
19. Ms. Sutirai Tangnorakul	Common Share Warrant	Spouse	-	-	-	-	-	Underage	-	-	-	-	-

Remark ¹⁾ Ordinary Shares and Warrant at the Closing Date of XO January 4, 2017

²⁾ Ordinary shares as of the closing date of XO on December 19, 2017 and Warrant on XO closing date on September 4, 2017

³⁾ Warrants that have been expired; therefore, there will be no remaining warrants at the end of the year.

^(A) Director / Executive



Auditor fee

1. Audit fee

In 2013 – 2017, audit fees for the Company comprises annual audit fee and audit fees for the 3 quarters, as per following details:-

Year	Audit Fee of Gunkul Engineering PCL.
2013	892,000.00
2014	892,000.00
2015	940,000.00
2016	1,100,000.00
2017	1,480,000.00

The parties related to the auditor and the auditing firm for 2017 is KPMG Phoomchai Audit Limited which is not a related party to the Company. It is an independent auditor and has been approved by the Securities and Exchange Commission and qualified by the Audit Committee and the Board of Directors including the Annual General Meeting of Shareholders for 2017.

2. Non-Audit fee

The Company has compensation for other services, such as overtime fee in amount of 80,000.00 Baht, transportation fee in amount of 60,863.00 Baht, packing document in amount of 5,480.00 Baht, confirmation fee in amount of 1,500.00 Baht and delivery fee in amount of 1,284.00 Baht, total amount of 149,127.00 Baht which is already paid within 2017.

21.5 Compliance with the Principles of Good Corporate Governance in Any Other Matter

The board of directors set agenda to acknowledge from every subcommittee chairman, report the progress of the subcommittee to the board of directors in quarterly for the efficiency of organization management for growing sustainably and continuing oversight of the principles of good corporate governance.

The Company is committed to bringing good corporate governance principles into operation throughout the organization. In 2017, the Company received Corporate Good Governance (“CGR”) ratings with an excellent rate of 91 points, compared with the result obtained in 2016 with a very good rate of 82 points. In addition, 2017, the Company received the result of the evaluation of the quality in holding the meeting in 2017 with an excellent rate of 97.5 points compared to the results obtained in 2016 with an excellent rate of 97.0 points.

In order to encourage voluntary compliance by the private sector to cooperate in the prevention and fight against corruption with the standardization of business to be correct and transparent as well as creating a higher standard of business ethics. In 2017, the Company issued a statement announcing its commitment to the Private Sector Collective Action Coalition Against Corruption (CAC). Also, the CAC Council has evaluated and approved the Company as a member of the Private Sector Collective Action Coalition Against Corruption from August 18, 2017 for a period of 3 years (until August 18, 2020), reflecting the overall development of the Company’s good corporate governance. Moreover, the company is committed to sustainable this development.

22.

Internal Control and Risk Management

Board of Directors realizing about the importance of risk management and have direct responsibility for risk management of the organization. The objective is to support the operations of the Company's management division to be more efficient and achieve goals by specifying the policy and risk management framework and involved in all sections of the business and specify the internal regulation, preventive and decrease risk measure, reporting system, monitoring procedure and regularly evaluate to cover business risk factors.

Board of Directors has delegated to the Audit Committee which consists of 3 independent directors and each one is not an employee of the Company to take the responsibility of review and audit the internal control to ensure that the operations are effective by checking balances and controlling use of the property for the benefit of the Company. The Internal Audit Department performs to assess the risk and internal operation control activities including reviews the financial report and risk management information by reporting to the Audit Committee quarterly.

In the Board of Directors' meeting 1/2018 dated February 21, 2018, Audit and Corporate Governance Committee (three independent directors), management and internal audit participated in evaluating the internal control system of the Company according to 5 components guidance from the Committee of Sponsoring Organization of Treadway Commission (COSO) as details follow;

1. Control Environment
2. Risk Assessment
3. Control Activities
4. Information & Communication
5. Monitoring Activities

The Board of Directors and the Audit Committee have the same opinion as the Internal Audit Team. The internal control system of the Company is compliance with the form of internal control in accordance with COSO guidelines. It is adequate, appropriate and has an environment that good for an internal control system. This is due to the organizational structure and the clear chain of command designed to accommodate the overall objectives of the Company including authorizing authority (review and update regularly) for each level of operation, to achieve corporate-level objectives. In addition, the Company manages to have sufficient personnel to perform the system effectively. The Company also has an internal control system to monitor and control the operations of its subsidiaries to protect the assets of the Company and its subsidiaries from improper or unauthorized use by the directors or management including the transactions with the persons who may have conflicts and the connected persons.

The Board of Directors also assigned the Risk Management Committee, consists of two independent directors, one executive director and one management. The responsibilities are to formulate policies and operational framework. The risk management framework is based on the COSO guideline. To specify the risk appetite and the risk tolerance level under the Company's acceptance and to specify the roles and responsibilities of the management and participate in setting goals for organizational use. It also oversees and evaluates the risks of the Company's activities to ensure transparency and fairness to stakeholders and all stakeholders.

To ensure the guidelines and policies of the Board of director and the Management is being observed. The Company has set Key Performance Indicator (KPI) for all departments by comparing actual performance with periodic goals to analyze the causes of the differences and specify the improvement to conform to the current situation. The Internal Audit Team which is under the supervisory board will monitor and evaluate the performance and the internal control system of the Company and its subsidiaries in various fields frequently. When defects any error or anything that should improve the internal control system, will report to relevant management and the Audit Committee to acknowledge and to ensure that the management team sets the corrective and action plan.

Audit and Corporate Governance Committee and management have continuously paid attention on corporate governance, internal control and risk management with aim to have good corporate governance, efficient internal control, acceptable risk management, reliable accounting and financial reports, and straight-forward rules and regulations.

Head of the Company's Internal Audit Section

The Audit Committee Meeting has appointed Mr. Tanetsiri Farkmitr, Assistant Director of Internal Audit to be the head of internal audit section of the Company and Secretary to the Audit Committee. An effective date is October 20, 2016. Mr. Thananee Sirideeam has experience in internal audit. He is a certified public accountant (CPA) and has sufficient experience in managing the Internal Audit Department. The Audit Committee is of the opinion that he is appropriate to be assigned in this position.

In order to consider approving, transferring, dismissal of the incumbent as a head of internal audit section of the Company must be approved or get the approval from the Audit Committee.

23.1 Shareholding in Subsidiaries and Joint Ventures

- The related transaction between GUNKUL, subsidiaries and joint ventures (associated companies or affiliates) for normal business which are useful for company procedure. GUNKUL is the shareholder of the following subsidiaries and joint ventures

Classification Investment ³⁾		Shareholding in Subsidiaries and Joint Ventures ¹⁾															
		GUNKUL : Direct Shareholding ²⁾								GUNKUL : Indirect Shareholding ²⁾							
Subsidiaries	100%	100%	99.99%	99.97	99.94	74.90%	67.00%	51.00%	48.98%	40.00%	25.01%	100%	99.99%	74.90%	67.00%	51.00%	
	GK Sendai	GIM	GKA	GTRC	GBE	GOB	IAE	ECO	BMPS			GIS	GSP-1	OGA	RNS	GKMCP-1	
	GK Kimitsu		GKP									GMP	GSP-2	OGB			
	GK Utsunomiya		KNP									FAM	GSP-3	OGD			
	GK Iwakuni		WED										GSP-4	OGE			
			GNP											GSP-5	OGW-A		
			KWE										GSP-6	OGW-B			
			NKP														
			BGP														
			SGSE														
			SES														
			GSR-1														
			GSC														
			GPD														
			GUNKUL-LED														
			GSP														

Classification	Investment ³⁾	Shareholding in Subsidiaries and Joint Ventures ¹⁾														
		GUNKUL : Direct Shareholding ²⁾							GUNKUL : Indirect Shareholding ²⁾							
Associates/ Joint Ventures (Co-Control) Associates/ Joint Ventures (Uncontrollable)	100%	100%	99.99%	99.97	99.94	74.90%	67.00%	51.00%	48.98%	40.00%	25.01%	100%	99.99%	74.90%	67.00%	67.00%
								GCPG		GPS						
										SWE						
											WHA GSR-1					
											WHA GSR-2					
											WHA GSR-3					
											WHA GSR-4					
											WHA GSR-5					
											WHA GSR-6					
											WHA GSR-8					
											WHA GSR-9					
											WHA GSR-10					
											WHA GSR-16					
											WHA GSR-17					

1) The full name of the subsidiary / associates / joint ventures listed in Clause 14 "General Information and Other Significant Information"

2) GUNKUL holds indirect shares through the following companies:

- GUNKUL holds for 100% stake in GIM / GIM holds for 100% stake in GMP.
- GUNKUL holds for 99.99% stake in GSP / GSP holds for 99.99% stake in GSP-1, GSP-2, GSP-3, GSP-4, GSP-5 and GSP-6.
- GUNKUL holds for 74.90% stake in GOB / GOB holds for 99.99% stake in OGA, OGB, OGD, OGE, OGW-A and OGW-B.
- GUNKUL holds for 67% stake in IAE / IAE holds for 99.99% stake in RNS.

³⁾ GUNKUL invested in the companies listed above through GIM.

- So that the related transaction between the Company and subsidiaries and affiliates or joint ventures will not cause any conflict in the future.

23.2 Opinion of the Audit Committee for the Related Transaction between the Company with Subsidiaries, Joint Ventures and related companies/persons

- Buy/Sell transactions benefit the Company's operations, are reasonable and have normal trade conditions.
- Renting or leasing space contracts between the Company and subsidiaries and related persons, the Company and the Group have made a lease agreement and the sublease agreement. The rental price is determined by the independent appraiser. The rental rates for land and buildings used for the establishment of the Company and the Group were assessed. The terms and rates of rental can be comparable to renting to third parties which is Reasonable and necessary.
- Service of O&M and Management between the Group are made under both agreed on service fee which are useful for the Company's operation and are reasonable.
- The Group has entered into an agreement with a related company for the construction of a replacement power plant with a reasonable price by the fair rate which is comparable to other clients. The Company follows the practice of the regulations which related to the Stock Exchange of Thailand (SET) which in this case is considered that it is not "Normal business" (please see "Listed Companies Handbook" in the topic of "Related Transaction) size list more than 1 million baht or more than 0.03% of NTA and the Company need to ask for the resolution from the board of director's or the shareholder's meeting before enter the transaction (depend on transaction value).
- Subsidiaries and associated companies sign solar rooftop power plant construction contracts which are useful for the Company's operation and are reasonable.
- Asset acquisitions from related persons and companies to use for operation are necessary for and benefit the Company and the Group's operation. Conditions and prices of these acquisitions are comparable to acquire from a third party.
- The loans are charged at the interest rate close to the rate borrowed from financial institutions. The interest rates charged on intercompany loans within the Group and all related companies. The interest rate is on average and close to that of a financial institution. These lending are necessary and reasonable and benefit the Company and the Group's operations.

Credit Facilities and Collateral

As of 31st December 2017, GUNKUL got credit lines from several banks for total amount of 5,118.42 million baht and USD 265.00 million . Details are as follows.

Credit Type	Credit Line (Million Baht)	Credit Line (USD Million)	Credit Line Amount which the Company, subsidiaries and joint venture available to share (Million Baht)											
			GKA	GKP	KNP	WED	GNP	NK	GPD	GUNKUL	RNS	GCPG	GPS	

* Credit line of " Multi" Type which got from several commercial bank , the subsidiaries, associates and affiliates available to share this credit line, asking for approving at a time.

Opinion of the Audit Committee: This transaction makes a benefit to the Company . It is reasonable to enter into the transaction for using the financial management of the organization.

As of 31st December 2017, GUNKUL's Group got credit lines from several banks to serve for construction and development of power plant projects of the Group.

Credit Type	Credit Line (Million Baht)
1. Wind Energy Development Co., Ltd.	3,675.00
2. Rangnen Solution Co., Ltd.	4,080.00
3. Grenovation Power Co., Ltd.	4,455.00
4. Korat Wind Energy Co., Ltd.	3,045.00
5. NK Power Solar Co., Ltd.	48.00
6. Gunkul Chubu Powergen Co., Ltd.	2,276.10
7. G-Power Source Co., Ltd.	2,200.00
8. WHA Gunkul Green Solar Roof 1 Co., Ltd.	33.00
9. WHA Gunkul Green Solar Roof 2 Co., Ltd.	42.43
10. WHA Gunkul Green Solar Roof 6 Co., Ltd.	42.43
11. WHA Gunkul Green Solar Roof 17 Co., Ltd.	46.91
Total	19,943.87

The total amount is guaranteed by the claim in the deposit account, the claim in Power Purchase Agreement and related contract, mortgage of land and buildings, pledge / mortgage of machinery and equipment and pledge of share certificates of such subsidiary.

Opinion of the Audit Committee: This transaction is reasonable due to a guarantee by the assets of the subsidiary company.

2.3.3 Summary of Relationship between the Company, Subsidiaries, Joint Ventures and Related Companies/Persons

Company	Symbol	Type of Business	Relationship
Subsidiaries : GUNKUL holding 100% stake			
Gunkul International (Mauritius)	GIM	Overseas Investment	December 31, 2017 - GUNKUL was major shareholder of GIM for 100% stake.
Gunkul Investment (Singapore) Pte. Ltd.	GIS	Overseas Investment	December 31, 2017 - GIM was major shareholder of GIS for 100% stake.
Gunkul Myanmar Power (Hlawga) Pte. Ltd.	GMP	Overseas Investment	December 31, 2017 - GIS was major shareholder of GMP for 100% stake.
Subsidiaries : GUNKUL invest for 100% stake			
Sendai Okura Mega Solar Godo Kaisha	GK Sendai	Generating Electrical Power	December 31, 2017 - GIM and BGP invested in GK Sendai in total for 100% stake.
Kimitsu Mega Solar Godo Kaisha	GK Kimitsu	Generating Electrical Power	December 31, 2017 - GIM and BGP invested in GK Kimitsu in total for 100% stake.
GK Utsunomiya	GK Utsunomiya	Generating Electrical Power	December 31, 2017 GIM and BGP invested in GK Utsunomiya in total for 100% stake.
GK East Japan Solar 13	GK Iwakuni	Generating Electrical Power	December 31, 2017 GIM and BGP invested in GK Iwakuni in total for 100% stake.
Subsidiaries : GUNKUL holding 99.99% stake			
G.K. Assembly Co., Ltd.	GKA	Manufacturing Electrical Products	December 31, 2017 - GUNKUL was major shareholder of GKA for 99.99 % stake. - Shared shareholder between GKA and GUNKUL is Mr.Gunkul Dhumrongpiyawut holding 0.00005% stake in GKA. - Shared directors between GKA and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mrs. Areewan Chaloerdan

Company	Symbol	Type of Business	Relationship
G.K.Power Products Co., Ltd.	GKP	Manufacturing Electrical Products	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of GKP for 99.99% stake. - Shared shareholder between GUNKUL and GKP is Mr.Gunkul Dhumrongpiyawut holding 0.001% stake in GKP. - Shared directors between GKP and GUNKUL are Miss Sopachra Dhumrongpiyawut and Mrs. Areewan Chaloeandani.
K.N.P. Supply Co., Ltd.	KNP	Supplying Electrical Products	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of KNP for 99.99 % stake. - Shared shareholder between GUNKUL and KNP is Mr. Gunkul Dhumrongpiyawut holding 0.0002% stake in KNP. - Shared director between KNP and GUNKUL is Mr.Chaloempon Sricharoen.
Wind Energy Development Co., Ltd.	WED	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of WED for 99.99% stake. - Shared shareholder between GUNKUL and WED is Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.00001% stake in WED. - Shared directors between WED and GUNKUL are Mr. Somboon Aueatchasai and Miss Naruechon Dhumrongpiyawut, daughter of Mr. Gunkul Dhamrongpiyawut. - Shared director between WED and GCPG and GPS is Mr. Somboon Aueatchasai.
Greenovation Power Co., Ltd.	GNP	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of GNP for 99.99% stake. - Shared shareholders between GNP and GUNKUL are Mr. Gunkul Dhamrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.00001% stake each in GNP. - Shared director between GNP and GUNKUL is Miss Naruechon Dhumrongpiyawut

Company	Symbol	Type of Business	Relationship	
Korat Wind Energy Co., Ltd.	KWE	Generating Electrical Power	December 31, 2017	<ul style="list-style-type: none"> - GUNKUL was major shareholder of KWE for 99.99% stake. - Share shareholders between KWE and GUNKUL are Mr. Gunkul Dhamrongpiyawut and Miss Sopacha Dhumrongpiyawut by holding 0.00001% stake each in KWE. - Shared directors between KWE and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mr. Somboon Aueatchasai.
NK Power Solar Co., Ltd.	NKP	Generating Electrical Power	December 31, 2017	<ul style="list-style-type: none"> - GUNKUL was major shareholder of NKP for 99.99% stake. - Shared shareholder between GUNKUL and NKP is Miss Sopacha Dhumrongpiyawut holding 0.0038% stake in NKP. - Shared directors between NKP, GUNKUL and GPS are Miss Sopacha Dhumrongpiyawut and Mr. Somboon Aueatchasai. - Shared directors between NKP and GCPG are Mr. Somboon Aueatchasai and Mr. Phongsakorn Damnoen.
Gunkul Solar Power Co., Ltd.	GSP	Generating Electrical Power	December 31, 2017	<ul style="list-style-type: none"> - GUNKUL was major shareholder of GSP for 99.99% stake. - Shared shareholder between GUNKUL and GSP is Mr. Somboon Aueatchasai holding 0.0001% stake in GSP. - Shared director between GSP and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Gunkul Solar Power 1 Co., Ltd.	GSP-1	Generating Electrical Power	December 31, 2017	<ul style="list-style-type: none"> - GSP was major shareholder of GSP-1 for 99.99% stake. GUNKUL holds GSP-1 through GSP. - Shared shareholder between GUNKUL and GSP-1 is Mr. Somboon Aueatchasai holding 0.0001% stake in GSP-1. - Shared director between GSP-1 and GUNKUL is Miss Sopacha Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship
Gunkul Solar Power 2 Co., Ltd.	GSP-2	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GSP was major shareholder of GSP-2 for 99.99% stake. GUNKUL holds GSP-2 through GSP. - Shared shareholder between GUNKUL and GSP-2 is Mr. Somboon Aueatchasai holding 0.0001% stake in GSP-2. - Shared director between GSP-2 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Gunkul Solar Power 3 Co., Ltd.	GSP-3	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GSP was major shareholder of GSP-3 for 99.99% stake. GUNKUL holds GSP-3 through GSP. - Shared director between GSP-3 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Gunkul Solar Power 4 Co., Ltd.	GSP-4	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GSP was major shareholder of GSP-4 for 99.99% stake. GUNKUL holds GSP-4 through GSP. - Shared director between GSP-4 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Gunkul Solar Power 5 Co., Ltd.	GSP-5	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GSP was major shareholder of GSP-5 for 99.99% stake. GUNKUL holds GSP-5 through GSP. - Shared director between GSP-5 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Gunkul Solar Power 6 Co., Ltd.	GSP-6	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GSP was major shareholder of GSP-6 for 99.99% stake. GUNKUL holds GSP-6 through GSP. - Shared shareholder between GUNKUL and GSP-6 is Mr. Somboon Aueatchasai holding 0.0001% stake in GSP-6. - Shared director between GSP-6 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Bright Green Power Co., Ltd.	BGP	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of BGP for 99.99% stake.

Company	Symbol	Type of Business	Relationship
Siam Gunkul Solar Energy Co., Ltd.	SGSE	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of SGSE for 99.99% stake. - Shared shareholder between SGSE and GUNKUL is Mr.Somboon Aueatchasai holding 0.0002% stake in SGSE. - Shared director between SGSE and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Solar Energy Society Co., Ltd.	SES	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of SES for 99.99% stake.
Gunkul Solar Roof1 Co., Ltd.	GSR-1	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of GSR-1 for 99.99% stake. - Shared shareholder between GSR-1 and GUNKUL is Mr. Somboon Aueatchasai holding 0.0005% stake in GSR-1. - Shared directors between GSR-1 and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mr. Somboon Aueatchasai.
Gunkul Solar Community Co., Ltd.	GSC	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of GSC for 99.99% stake. - Shared shareholders between GSC and GUNKUL are Miss Naruechon Dhumrongpiyawut holding 0.001% stake and Mr.Somboon Aueatchasai holding 0.001% stake in GSC. - Shared directors between GSC and GUNKUL are Miss Sopacha Dhumrongpiyawut, Miss Naruechon Dhumrongpiyawut and Mr. Somboon Aueatchasai. - Share director between GSC and GNP is Miss Naruechon Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship
Gunkul Power Development Co., Ltd.	GPD	Contractors and Generating Electric Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of GPD for 99.99% stake. - Shared shareholder between GPD and GUNKUL is Mr. Somboon Aueatchasai holding 0.0002% stake in GPD. - Shared directors between GPD and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mr. Somboon Aueatchasai.
	NKP		<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of NKP for 99.99% stake. - Shared shareholder between NKP and GUNKUL is Miss Sopacha Dhumrongpiyawut holding 0.0038% stake in NKP. - NKP has shared directors between GPD and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mr. Somboon Aueatchasai. - Shared directors between NKP and GCPG are Mr. Somboon Aueatchasai and Mr. Phongsakorn Damnoen.
Gunkul LED Lighting Co., Ltd.	GUNKUL-LED	Producing LED electric bulbs for sale	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was major shareholder of GUNKUL-LED for 99.99% stake. - Shared shareholder between GUNKUL-LED and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.0001% stake in GUNKUL-LED. - Shared directors between GUNKUL-LED and GUNKUL are Miss Naruechon Dhumrongpiyawut and Mr. Somboon Aueatchasai.

Company	Symbol	Type of Business	Relationship
Subsidiaries : GUNKUL holding for 99.97% stake			
Gunkul Training Solar Center Co., Ltd. (Formerly known as Gunkul Solar Roof 2 Co., Ltd. - GSR-2 Registered change on March 16, 2017)	GTRC	Education Services, Seminar Management, etc. Training management, etc.	December 31, 2017 - GUNKUL was major shareholder of GTRC for 99.97% stake - Shared shareholder between GTRC and GUNKUL is Mr. Sombon Aueatchasai holding 0.01% stake in GTRC. - Shared director between GTRC and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mr. Sombon Aueatchasai.
Subsidiaries : GUNKUL holding for 99.94% stake			
Gunkul Bio Energy Co., Ltd.	GBE	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of GLED for 99.94% stake. - Shared shareholder between GBE and GUNKUL is Mr. Sombon Aueatchasai holding 0.02% stake in GBE. - Shared director between GBE and GUNKUL is Mr. Sombon Aueatchasai.
Subsidiaries : GUNKUL holding for 74.90% stake			
G.O. Bio Energy Co., Ltd.	GOB	Investing in Generating Electrical Power Business Company	December 31, 2017 - GUNKUL was a shareholder of GOB for 74.90% stake. - Shared shareholder between GOB and GUNKUL is Mr. Phongsakorn Damnoen holding 0.0003 % stake in GOB. - Shared directors between GOB and GUNKUL are Mr. Sombon Aueatchasai and Miss Naruechon Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship
Outgrow A Co., Ltd.	OGA	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GOB was major shareholder of OGA for 99.99% stake. GUNKUL held OGA pass GOB. - Shared shareholder between OGA and GOB is Mr. Phongsakorn Damnoen holding 0.0013% stake in OGA. - Shared directors between OGA and GUNKUL are Mr. Somboon Aueatchasai and Miss Naruechon Dhumrongpiyawut. - Shared directors between OGA and GOB are Mr. Somboon Aueatchasai, Miss Naruechon Dhumrongpiyawut and Mr. Phongsakorn Damnoen.
Outgrow B Co., Ltd.	OGB	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GOB was major shareholder of OGB for 99.99% stake. GUNKUL held OGB pass GOB. - Share shareholder between OGB and GOB is Mr. Phongsakorn Damnoen holding 0.0013% stake in OGB. - Shared directors between OGB and GUNKUL are Mr. Somboon Aueatchasai and Miss Naruechon Dhumrongpiyawut. - Shared directors between OGB and GOB are Mr. Somboon Aueatchasai, Miss Naruechon Dhumrongpiyawut and Mr. Phongsakorn Damnoen.
Outgrow D Co., Ltd.	OGD	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GOB was major shareholder of OGD for 99.99% GUNKUL held OGB pass GOB. - Shared shareholder between OGD and GOB is Mr. Phongsakorn Damnoen holding 0.0013% stake in OGD. - Shared directors between OGD and GUNKUL are Mr. Somboon Aueatchasai and Miss Naruechon Dhumrongpiyawut. - Shared directors between OGD and GOB are Mr. Somboon Aueatchasai, Miss Naruechon Dhumrongpiyawut and Mr. Phongsakorn Damnoen.

Company	Symbol	Type of Business	Relationship
Outgrow E Co., Ltd.	OGE	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GOB was major shareholder of OGE for 99.99% stake, GUNKUL held OGB pass GOB. - Shared shareholder between OGE and GOB is Mr. Phongsakorn Damnoen holding 0.0013% stake in OGE. - Shared directors between OGE and GUNKUL are Mr. Somboon Aueatchasai and Miss Naruechon Dhumrongpiyawut. - Shared directors between OGE and GOB are Mr. Somboon Aueatchasai, Miss Naruechon Dhumrongpiyawut and Mr. Phongsakorn Damnoen.
Outgrow Wood Supply A Co., Ltd.	OGW-A	Related to Power Plant Business	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GOB was major shareholder of OGW-A for 99.98% stake, GUNKUL held OGW-A pass GOB. - Shared shareholder between OGW-A and GOB is Mr. Phongsakorn Damnoen holding 0.0100% stake in OGW-A. - Shared directors between OGW-A and GUNKUL are Mr. Somboon Aueatchasai and Miss Naruechon Dhumrongpiyawut. - Shared directors between OGW-A and GOB are Mr. Somboon Aueatchasai, Miss Naruechon Dhumrongpiyawut and Mr. Phongsakorn Damnoen.
Outgrow Wood Supply B Co., Ltd.	OGW-B	Related to Power Plant Business	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GOB was major shareholder of OGW-B for 99.98% stake , GUNKUL held OGW-B pass GOB. - Shared shareholder between OGW-B and GOB is Mr. Phongsakorn Damnoen holding 0.0100% stake in OGW-B. - Shared directors between OGW-B and GUNKUL are Mr. Somboon Aueatchasai and Miss Naruechon Dhumrongpiyawut - Shared directors between OGW-B and GOB are Mr. Somboon Aueatchasai, Miss Naruechon Dhumrongpiyawut and Mr. Phongsakorn Damnoen.

Company	Symbol	Type of Business	Relationship
Subsidiaries : GUNKUL holding for 67% stake			
Infinite Alternative Energy Co., Ltd.	IAE	Investing in Generating Electrical Power Business Company	December 31, 2017 <ul style="list-style-type: none"> - GUNKUL was major shareholder of IAE for 67.00% stake. - Shared director between IAE and GUNKUL are Mr. Somboon Aueatchasai and Miss Naruechon Dhumrongpiyawut.
Rang Ngern Solution Co., Ltd.	RNS	Generating Electrical Power	December 31, 2017 <ul style="list-style-type: none"> - IAE was major shareholder of RNS for 99.99% stake, GUNKUL held RNS pass IAE - Shared director between RNS and GUNKUL is Miss Naruechon Dhumrongpiyawut.
Subsidiaries : GUNKUL holding for 51% stake			
Eco Thai Energy Co., Ltd.	ECO	Generating Electrical Power	December 31, 2017 <ul style="list-style-type: none"> - GUNKUL was major shareholder of ECO for 51.00% stake. - Shared directors between ECO and GUNKUL are Miss Naruechon Dhumrongpiyawut and Mr. Somboon Aueatchasai.
Gunkul Myanmar Central Power 1 Co., Ltd.	GMCP-1	Overseas Investment	December 31, 2017 <ul style="list-style-type: none"> - GMP was major shareholder of GMCP-1 for 51.00% stake.
Associated Company and Joint Venture: GUNKUL holding for 51% stake			
Gunkul Chubu Powergen Co., Ltd.	GCPG	Generating Electrical Power	December 31, 2017 <ul style="list-style-type: none"> - GUNKUL was major shareholder of GCPG for 51.00% stake. - GCPG is held by Dhumrongpiyawut family for 0.00005% stake. - Shared director between GCPG and GUNKUL is Mr. Somboon Aueatchasai. - On February 28, 2015. GCPG had sold its shares to Chubu Electric Power G.B. ("CHUBU") for 40.00% stake, sharing control by GUNKUL. - On July 1, 2015. The Board of Committee made an agreement to change the company name from "Gunkun Powergen Co., Ltd. (GPG)" to "Gunkul Chubu Powergen Co., Ltd. (GCPG)"

Company	Symbol	Type of Business	Relationship
Gunkul Myanmar Central Power 1 Co., Ltd.	GMCP-1	Overseas Investment	December 31, 2017 - GUNKUL was major shareholder of GMCP-1 for 51.00% stake.
ECO Thai Energy Co., Ltd. Electrical Power	ECO	Generating	December 31, 2017 - GUNKUL was major shareholder of ECO for 51.00% stake. - Shared directors between ECO and GUNKUL are Miss Naruechon Dhumrongpiyawut and Mr. Sornboon Aueatchasai.
Associated Company and Joint Venture: GUNKUL holding for 48.98% stake			
BMP Solar Co., Ltd. Electrical Power	BMPS	Generating	December 31, 2017 - GUNKUL was major shareholder of BMPS for 48.98% stake. - Shared director between BMPS and GUNKUL is Miss Naruechon Dhumrongpiyawut.
Associated Companies and Joint Ventures : GUNKUL holding for 40% stake			
G- Power Source Co., Ltd. Electrical Power	GPS	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of GPS for 40.00 % stake. - Shared directors between GPS and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mr. Sornboon Aueatchasai.
Siam Wind Energy Co., Ltd. 1. Registration of the dissolution of the Company on June 19, 2017 2. Completion of the registration of the settlement on August 2, 2017	SWE	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of SWE at 40.00% stake. - Shared shareholder between GUNKUL and SWE is Miss Naruechon Dhumrongpiyawut holding 0.01% stake in SWE. - Shared directors between SWE and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mr. Sornboon Aueatchasai, sharing control by GUNKUL.

Company	Symbol	Type of Business	Relationship
Joint Ventures (No Sharing Control) : GUNKUL holding for 25.01% stake			
WHA Gunkul Green Solar Roof 1 Co., Ltd.	WHA_GSR-1	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-1 for 25.01% stake. - Shared director between WHA_GSR-1 GUNKUL is Miss Sopacha Dhumrongpiyawut.
WHA Gunkul Green Solar Roof 2 Co., Ltd. 1. Registration of the dissolution of the Company on September 12, 2017 2. Completion of the registration of the settlement on October 12, 2017	WHA_GSR-2	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-2 for 25.01% stake - Shared director between WHA_GSR-2 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
WHA Gunkul Green Solar Roof 3 Co., Ltd.	WHA_GSR-3	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-3 for 25.01% stake. - Shared director between WHA_GSR-3 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
WHA Gunkul Green Solar Roof 4 Co., Ltd. 1. Registration of the dissolution of the Company on September 12, 2017 2. Completion of the registration of the settlement on October 12, 2017	WHA_GSR-4	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-4 for 25.01% stake. - Shared director between WHA_GSR-4 and GUNKUL is Miss Sopacha Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship
WHA Gunkul Green Solar Roof 5 Co., Ltd. 1. Registration of the dissolution of the Company on September 12, 2017 2. Completion of the registration of the settlement on October 12, 2017	WHA_GSR-5	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-5 for 25.01% stake. - Shared director between WHA_GSR-5 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
WHA Gunkul Green Solar Roof 6 Co., Ltd.	WHA_GSR-6	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-6 for 25.01% stake. - Shared director between WHA_GSR-6 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
WHA Gunkul Green Solar Roof 8 Co., Ltd. 1. Registration of the dissolution of the Company on September 12, 2017 2. Completion of the registration of the settlement on October 12, 2017	WHA_GSR-8	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-8 for 25.01% stake - Shared director between WHA_GSR-8 and GUNKUL is Miss Sopacha Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship
WHA Gunkul Green Solar Roof 9 Co., Ltd. 1. Registration of the dissolution of the Company on September 12, 2017 2. Completion of the registration of the settlement on October 12, 2017	WHA_GSR-9	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-9 for 25.01% stake - Shared director between WHA_GSR-9 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
WHA Gunkul Green Solar Roof 10 Co., Ltd. 1. Registration of the dissolution of the Company on September 12, 2017 2. Completion of the registration of the settlement on October 12, 2017	WHA_GSR-10	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-10 for 25.01% stake. - Shared director between WHA_GSR-10 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
WHA Gunkul Green Solar Roof 16 Co., Ltd. 1. Registration of the dissolution of the Company on September 12, 2017 2. Completion of the registration of the settlement on October 12, 2017	WHA_GSR-16	Generating Electrical Power	December 31, 2017 - GUNKUL was a shareholder of WHA_GSR-16 for 25.01% stake - Shared director between WHA_GSR-16 and GUNKUL is Miss Sopacha Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship
WHA Gunkul Green Solar Roof 17 Co.,Ltd.	WHA_GSR-17	Generating Electrical Power	<p>December 31, 2017</p> <ul style="list-style-type: none"> - GUNKUL was shareholder of WHA_GSR-17 for 25.01% stake. - Shared director between WHA_GSR-17 and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Related Companies			
Gunkul Group Co., Ltd.	GKG	Holding company	<ul style="list-style-type: none"> - GKG is major shareholder of GUNKUL with 49.97% stake. - GKG is held by Dhumrongpiyawut family at 99.64% stake. - GKG has shared director with GUNKUL which is Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut. <p>(Added Registration of Directors on February 20, 2017)</p>
Future Electrical Control Co., Ltd.	FEC	Contractor	<ul style="list-style-type: none"> - FEC has joined major shareholder with GUNKUL which is GKG and Dhumrongpiyawut family by holding 95% and 3.60% respectively. - Previously, FEC was importer of transmission equipment to sell to GUNKUL. Now FEC has changed its business objective to contractor, while transmission equipment business was terminated since 2008.
Kulhatee Co., Ltd.	KNT	Marine Transport in Asian Region	<ul style="list-style-type: none"> - Major shareholder of KNT is Sricharoen family holding 97.93% stake, Sricharoen family is a family of Miss Sopacha Dhumrongpiyawut.
Gunkul Trading & Agency Co., Ltd.	GKT	International Marine Transport	<ul style="list-style-type: none"> - GKT is held by Dhumrongpiyawut family, major shareholding of GKG, Dhumrongpiyawut family holds 67.00% stake. - Shared director between GKT and GUNKUL is Miss Sopacha Dhumrongpiyawut.
Gunkul Marine Line Co., Ltd.	GML	Operating Closed	<ul style="list-style-type: none"> - GML is held by Dhumrongpiyawut family holding 97.00% stake. - Shared director between GML and GUNKUL is Mr. Gunkul Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship	
Gunkul Engineering (2000) Co., Ltd.	GK2000	Rental	<ul style="list-style-type: none"> - Major shareholders of GK2000 are GKG and Dhumrongpiyawut family holding 100% stake. - Shared director between GK2000 and GUNKUL is Mr. Gunkul Dhumrongpiyawut. 	
G.M. Supply & Construction Co., Ltd.	GMS	Rental	<ul style="list-style-type: none"> - GMS is held by Dhumrongpiyawut family holding 98.00% stake. - Shared director between GMS and GUNKUL is Mr. Gunkul Dhumrongpiyawut. 	
Siam Gunkul Power Co., Ltd. 1. Registration of the dissolution of the Company on July 3, 2017 2. Completion of the registration of the settlement on August 18, 2017	SGP	Electricity Industry	<ul style="list-style-type: none"> - SGP is held by Dhumrongpiyawut family holding 75.00% stake. - Shared director between SGP and GUNKUL is Mr. Gunkul Dhumrongpiyawut. 	
Siam Future Co., Ltd.	SF	Electricity Industry	<ul style="list-style-type: none"> - Major shareholder of SF is GKG holding 99.97% stake. - Share directors between SF and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.0001% stake each in SF. - Shared director between SF and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut. 	
Happy Green 2558 Co., Ltd.	HPG	Electricity Industry	<ul style="list-style-type: none"> - Major shareholder of HPG is GKG holding 99.94% stake. - Share directors between HPG and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.02% stake each in HPG. - Shared director between HPG and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut. 	

Company	Symbol	Type of Business	Relationship
Tech-Green Co., Ltd.	TG	Electricity Industry	<ul style="list-style-type: none"> - Major shareholder of TG is GKG holding 99.94% stake. - Share directors between TG and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.02% stake each in TG. - Shared director between TG and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Thong Lo9 Co., Ltd. (Formerly known as Thanasap 2558 Co., Ltd. -TNS Registered change on January 9, 2017)	TL9	Electricity Industry	<ul style="list-style-type: none"> - Major shareholder of TL9 is GKG holding 99.94% stake. - Share directors between TL9 and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.0006% stake each in TL9. - Shared director between TL9 and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Entirety Sap Co., Ltd.	ETS	Electricity Industry	<ul style="list-style-type: none"> - Major shareholder of ETS is GKG holding 99.94% stake. - Share directors between ETS and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.0006% stake each in ETS. - Shared director between ETS and GUNKUL are Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Gunkul Tech Co., Ltd. 1. Registration of the dissolution of the Company on July 3, 2017 2. Completion of the registration of the settlement on August 18, 2017	GTC	Technology	<ul style="list-style-type: none"> - Shareholder of GTC is GKG which holding 50.00% stake and Mr. Somboon Aueatchasai holding 0.005% stake. - Shared directors of GTC and GUNKUL are Miss Sopacha Dhumrongpiyawut and Mr. Somboon Aueatchasai.

Company	Symbol	Type of Business	Relationship
Noppakul Co., Ltd.	NPK	Chattel and Realty	<ul style="list-style-type: none"> - Major shareholder of NPK is Miss Naruechon Dhumrongpiyawut holding 82.00% stake and Srichaoren family holds 18.00% stake. - Shared director between NPK and GUNKUL is Miss Naruechon Dhumrongpiyawut. - Joint venture between BE and FEC has FEC as partner to do construction business. - Joint venture between FEC and SAC has FEC as partner to do construction business. - Shareholder of Greenfield is Mr. Khabaphat Jirakasempong, he is a relative of Mr. Gunkul Dhumrongpiyawut. - Shareholder of PMBG is Ms. Fahmui Trikanjanothai, she is a relative of Mr. Gunkul Dhumrongpiyawut. - Major shareholder of GMA is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA. - Shared directors between GMA and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut. - Major shareholder of GMA-1 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-1 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-1. - Shared directors between GMA-1 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Joint venture between BE-FEC (Liquidated in December 2017)	JV-BE-FEC	Contractor	
Joint venture between FEC and SAC	JV-FEC & SAC	Contractor	
Green Field Energy Co., Ltd.	Greenfield	Real Estate	
P.M. Building Group Co., Ltd.	PMBG	Rental	
Great Miracle Asset Co., Ltd.	GMA	Movable and Immovable	
Great Miracle Asset 1 Co., Ltd. 1. Registration of the dissolution of the Company on December 4, 2017 2. Completion of the registration of the settlement on January 23, 2017	GMA-1	Movable and Immovable	

Company	Symbol	Type of Business	Relationship
Great Miracle Asset 2 Co., Ltd.	GMA-2	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-2 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-2 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-2. - Shared directors between GMA-2 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-3 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-3 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-3. - Shared directors between GMA-3 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-4 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-4 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-4. - Shared directors between GMA-4 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Great Miracle Asset 3 Co., Ltd.	GMA-3	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-5 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-5 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-5. - Shared directors between GMA-5 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-6 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-6 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-6. - Shared directors between GMA-6 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-7 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-7 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-7. - Shared directors between GMA-7 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Great Miracle Asset 4 Co., Ltd.	GMA-4	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-8 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-8 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-8. - Shared directors between GMA-8 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-9 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-9 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-9. - Shared directors between GMA-9 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-10 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-10 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-10. - Shared directors between GMA-10 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Great Miracle Asset 5 Co., Ltd.	GMA-5	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-11 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-11 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-11. - Shared directors between GMA-11 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-12 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-12 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-12. - Shared directors between GMA-12 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-13 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-13 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-13. - Shared directors between GMA-13 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.

Company		Symbol	Type of Business	Relationship
Great Miracle Asset 6 Co., Ltd. 1. Registration of the dissolution of the Company on December 4, 2017 2. Completion of the registration of the settlement on January 23, 2017		GMA-6	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-6 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholders between GMA-6 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-6. - Shared directors between GMA-6 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
		GMA-7	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-7 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholder between GMA-7 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-7. - Shared directors between GMA-7 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
		GMA-8	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-8 is Mr. Gunkul Dhumrongpiyawut holding 99.02% stake. - Shared shareholders between GMA-8 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-8. - Shared directors between GMA-8 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Great Miracle Asset 9 Co., Ltd.		GMA-9	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-9 is Mr. Gunkul Dhumrongpiyawut holding 99.02% stake. - Shared shareholder between GMA-9 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-9. - Shared directors between GMA-9 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship
Great Miracle Asset 10 Co., Ltd.	GMA-10	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-10 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholders between GMA-10 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-10. - Shared directors between GMA-10 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-11 is Mr. Gunkul Dhumrongpiyawut holding 99.02% stake. - Shared shareholder between GMA-11 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-11. - Shared directors between GMA-11 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Shared shareholders between GMA-12 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-12. - Major shareholder of GMA-13 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholders between GMA-13 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-13. - Shared directors between GMA-13 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
			<ul style="list-style-type: none"> - Major shareholder of GMA-14 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholders between GMA-14 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-14. - Shared directors between GMA-14 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Great Miracle Asset 11 Co., Ltd.	GMA-11	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-11 is Mr. Gunkul Dhumrongpiyawut holding 99.02% stake. - Shared shareholder between GMA-11 and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-11. - Shared directors between GMA-11 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Great Miracle Asset 12 Co., Ltd.	GMA-12	Movable and Immovable	<ul style="list-style-type: none"> - Shared shareholders between GMA-12 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-12.
Great Miracle Asset 13 Co., Ltd.	GMA-13	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-13 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholders between GMA-13 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-13. - Shared directors between GMA-13 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Great Miracle Asset 14 Co., Ltd.	GMA-14	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of GMA-14 is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shared shareholders between GMA-14 and GUNKUL are Mr. Gunkul Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut holding 0.000001% stake in GMA-14. - Shared directors between GMA-14 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.

Company	Symbol	Type of Business	Relationship
Pranburi Boulevard Co., Ltd.	PB	Movable and Immovable	<ul style="list-style-type: none"> - Major shareholder of PB is Mr. Gunkul Dhumrongpiyawut holding 99.99% stake. - Shareholder between PB and GUNKUL is Miss Naruechon Dhumrongpiyawut holding 0.000001 % stake in GMA-10. - Shared directors between GMA-10 and GUNKUL are Mr. Gunkul Dhumrongpiyawut, Miss Sopacha Dhumrongpiyawut and Miss Naruechon Dhumrongpiyawut.
Related Person			
Mr. Gunkul Dhumrongpiyawut	-	Director	<ul style="list-style-type: none"> - Mr. Gunkul Dhumrongpiyawut and family hold 49.97% stake in GKG which is major shareholder of GUNKUL. He is a Chairman of the Board Directors of GUNKUL.
Miss Sopacha Dhumrongpiyawut	-	Director	<ul style="list-style-type: none"> - Miss Sopacha Dhumrongpiyawut is Mr. Gunkul Dhumrongpiyawut's wife. She is the Chief Executive Officer of GUNKUL.
Miss Naruechon Dhumrongpiyawut	-	Director	<ul style="list-style-type: none"> - Miss Naruechon Dhumrongpiyawut is Mr. Gunkul Dhumrongpiyawut's daughter. She is a director of GUNKUL.
Mr. Pawich Dhumrongpiyawut	-	Mr. Gunkul Dhumrongpiyawut's son	<ul style="list-style-type: none"> - Mr. Pawich Dhumrongpiyawut is Mr. Gunkul Dhumrongpiyawut's son.
Mr. Chaloepon Srichaen	-	Director	<ul style="list-style-type: none"> - Mr. Chaloepon Srichaen is Miss Sopacha Dhumrongpiyawut's younger brother. He is a director of GUNKUL.

23.4 Summary of Related Transactions in 2016 and 2017

Related Company Companies		Size		Reason and necessity	
Type of Transaction	2016 (Million baht)	2017 (Million baht)			
(1) Sales of goods and rendering of service					
GUNKUL	GKA	Sale of goods	8.76	11.55	GUNKUL sold raw material to GKA on cost plus 5-30% profit, for production of finished goods.
		Account receivables	1.62	-	
		Other Receivable	-	0.49	
	GKP	Sale of goods	0.14	2.68	GUNKUL sold raw material to GKP on cost plus 5-30% profit, for production of finished goods.
	KNP	Sale of goods	10.82	1.34	GUNKUL sold finished goods to KNP for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	0.98	1.44	
		Other Receivable	-	0.01	
	GLEd	Sale of goods	-	-	GUNKUL sold finished goods to GLED for selling to the client for use in operations on cost plus 5-30% profit.
		Other Receivable	-	-	
GPD		Sale of goods	-	2.41	GUNKUL sold finished goods to GPD for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	0.02	1.18	
		Advance Debtors	0.03	2.30	
		Service revenue O&M	8.61	-	
					GUNKUL charged for the maintenance of GPD power plants under a mutually agreed contract.
RNS		Sale of goods	0.44	0.97	GUNKUL sold finished goods to RNS for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	-	1.44	
		Service revenue (S&A)	5.04	5.04	GUNKUL has entered into a service agreement with RNS to manage 11 power plants for a period of 5 years starting 1/1/2016 to 31/12/2020 with a total annual value of 5,040,000 Baht (before VAT) , totaling amount for yearly contract is 25,200,000 Baht
		Other Receivable	-	0.02	

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
SGSE	Sale of goods		0.06	-	GUNKUL sold finished goods to SGSE for selling to the client for use in operations on cost plus 5-30% profit.
		WED	-	0.01	GUNKUL sold finished goods to WED for selling to the client for use in operations on cost plus 5-30% profit.
		GPS5	-	0.03	Book value
		GKT		0.01	
		KWE		0.02	
ECO	Management income (S & A service)		-	0.36	GUNKUL has entered into a service agreement with ECO for a period of 5 years from Jan 1, 2017 to Jan 1, 2022. The contract value is Baht 1,949,876.00.
		Account receivables	-	0.06	
NK	Service revenue O&M		1.50	1.58	GUNKUL has entered into a maintenance agreement with NK for a period of 5 years from November 16, 2013 to November 15, 2018, at a rate of Baht 1.50 million per year.
		Other Receivable	0.05	0.16	The Bo Phoi site in Kanchanaburi is 0.94 MW with a value of Baht 7.65 million.
GPS	Service revenue O&M		23.91	9.10	GUNKUL has entered into a 4-year contract for maintenance of power plant equipment (O&M) with GPS, as a size of 6.5 MW x 4 power plants, total amount Baht 104.30 million.
		Account receivables	5.53	-	
GCPG	Construction receivables		4.92	-	GUNKUL signed the EPC contract for additional Bankluy Phase I in the capacity of 0.69 MW for amount 19.70 million baht to GCPG cost plus 5- 16% profit.
		Service revenue O&M	25.85	26.25	GUNKUL signed the Operation & Maintenance (O&M) with GCPG for 4 solar power plants for 5 years, Site Vicienburi size 8MW for Baht 40.80 million, Site Srichula size 8MW for Baht 40.80 million, Site Nurnpor size 4.5 MW for 25.50 million baht and site Buengsarnpun size 3 MW for Baht 20.40 Million.
	Accrued charges O&M		0.55	-	
		Unearned income O&M	4.61	8.56	
	Service revenue S&A		4.72	4.91	GUNKUL signed the service agreement with GCPG for 5 years starting on 1st of January 2013 to 31 st December 2017 by service fee of 375,000.00 baht per month.
	Account receivables			4.93	
	Advance Debtors		0.42	0.01	

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GKA	FEC	Sale of goods	18.13	10.48	GUNKUL sold finished goods to FEC for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	0.02	7.66	
	KNT	Sale of goods	0.06	0.04	GUNKUL sold finished goods to KNT for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	0.01	0.02	
	GKP	Sale of goods	41.35	20.39	GKA sold finished goods to GKP for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	12.89	5.02	
	KNP	Sale of goods	29.98	-	GKA sold finished goods to KNP for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	2.44	-	
	GLED	Sale of goods	2.64	0.47	GKA sold finished goods to GLED for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	-	0.32	
GKP	GPD	Sale of goods	0.11	1.00	GKA sold finished goods to GPD for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	0.11	0.69	
	GCPG	Sale of goods	0.03	-	GKA sold finished goods to GCPG for selling to the client for use in operations on cost plus 5-30% profit.
	FEC	Sale of goods	37.01	37.03	GKA sold finished goods to FEC for selling to the client for use in operations on cost plus 5-30% profit.
		Service revenue	4.16	-	
		Other income	-	0.42	
		Account receivables	38.88	21.58	
		Accrued charges	3.14	-	
	KNP	Sale of goods	13.78	-	GKP sold finished goods to KNP for selling to the client for use in operations on cost plus 5-30% profit.
	GLED	Sale of goods	-	0.89	GKP sold finished goods to GLED for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	-	0.09	

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GPD	GPD	Sale of goods	0.27	1.15	GKP sold finished goods to GPD for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	0.29	1.23	
	RNS	Sale of goods	0.17	1.17	GKP sold finished goods to RNS for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	-	1.26	
	GCPG	Sale of goods	5.09	-	GKP sold finished goods to GCPG for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	5.45	-	
	FEC	Sale of goods	2.25	0.01	GKA sold finished goods to GPD for selling to the client for use in operations on cost plus 5-30% profit.
		Account receivables	0.08	0.01	
	WED	Sale of goods/services	0.02	0.30	GPD sold finished goods to WED on cost plus 5-30% profit.
		Other Receivable	0.02	-	
	ECO	Service revenue O&M	-	2.50	GPD signed the Operation & Maintenance (O&M) with the ECO for 5 years. The contract date is January 1, 2017 – December 31, 2022, with a contract value of Baht 12,500,000.
		Unearned income	-	-	
GPD	BMP	Account receivables	-	0.05	GPD signed the Operation & Maintenance (O&M) with BMP for 5 years. Commencement date: May 1, 2017 – April 30, 2022. Total contract value is Baht 500,000.
		Service revenue O&M	-	0.07	
		Unearned income O&M	-	0.03	
		Accrued charges O&M	0.07	-	
	SES	Account receivables	-	3.49	
		Construction receivables	1.60	-	
	RNS	Sale of goods/services	0.17	-	GPD signed the Operation & Maintenance (O&M) with RNS total 10 places for 5 years starting contract on November 10, 2015 – October 10, 2020 total amount for 10 contracts is 259.09 million baht.
		Service revenue O&M	51.20	54.63	
		Unearned income O&M	1.80	1.86	

Company	Related Companies	Size		Reason and necessity	
		2016 (Million baht)	2017 (Million baht)		
	GPS	Service revenue O&M	-	20.15	GPD signed the Operation & Maintenance (O&M) with the GPS for 5 years. The contract date is March 2017 – December 2021, with a contract value of Baht 127,543,217.00.
		Account receivables	-	1.19	
	GCPG	Service revenue O&M	-	4.23	GPD signed the Operation & Maintenance (O&M) with the ECO for 5 years. The contract date is January 1, 2017 – December 31, 2021, with a contract value of Baht 21,137,575.
		Unearned income O&M	-	-	
	WHA_ GSR-1	Service revenue O&M	0.53	0.55	GPD signed the Operation & Maintenance (O&M) with WHA_GSR-1, WHA_GSR-3, and WHA_GSR-6 WHA_GSR-17 total 5 places for 5 years starting the contract on July 16, 2014 with contract value Baht 14,13 million.
		Accrued charges O&M	0.05	0.05	
	WHA_ GSR-3	Service revenue O&M	0.70	0.72	GPD signed the Operation & Maintenance (O&M) with WHA_GSR-1, WHA_GSR-3, and WHA_GSR-6 WHA_GSR-17 total 5 places for 5 years starting the contract on July 16, 2014 with contract value Baht 14,13 million.
		Accrued charges O&M	0.06	0.07	
	WHA_ GSR-6	Service revenue O&M	0.70	0.72	GPD signed the Operation & Maintenance (O&M) with WHA_GSR-1, WHA_GSR-3, and WHA_GSR-6 WHA_GSR-17 total 5 places for 5 years starting the contract on July 16, 2014 with contract value Baht 14,13 million.
		Accrued charges O&M	0.06	0.07	
	WHA_ GSR-17	Service revenue O&M	0.84	0.87	GPD signed the Operation & Maintenance (O&M) with WHA_GSR-1, WHA_GSR-3, and WHA_GSR-6 WHA_GSR-17 total 5 places for 5 years starting the contract on July 16, 2014 with contract value Baht 14,13 million.
		Accrued charges O&M	-	0.08	
(2) Purchase of goods and taking of services					
GUNKUL	GKA	Purchase of goods	227.80	255.93	GUNKUL bought finished goods from GKA for use in operations on cost plus 5-30%.
		Account payables	73.55	119.59	
		Check in advance	4.22	-	

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GKP		Purchase of goods	206.74	149.90	GUNKUL bought finished goods from GKP for use in operations on cost plus 5-30%.
		Service cost	-	0.10	
		Account payables	40.96	58.51	
		Purchase of goods	54.89	1.41	
KNP		Purchase of properties		0.20	GUNKUL bought finished goods from KNP for use in operations on cost plus 5-30%.
		Account payables	23.22	1.51	
		Accrued expenses /	-	-	
		other payable			
GLED		Purchase of goods	2.78	2.11	GUNKUL bought finished goods from GLED for use in operations on cost plus 5-30%.
		Accounts payable	0.25	2.21	
GPD		Cost of construction	-	0.13	GUNKUL bought finished goods from GPD for use in operations on cost plus 5-30%.
		Purchase of goods		3.39	
		Other payables	-	1.50	
RNS		Purchase of properties	-	0.97	GUNKUL bought finished goods from RNS for use in operations with book value.
		Other payables	-	0.99	
		Training Fee	-	0.16	
GPS5		Other payables	-	0.10	GUNKUL signed contract for the construction of the wind energy power stations and utilities size 60 MW (Subplu1:8 MW, Subplu2: 2 MW, Wayu: 50 MW) located at Huay Bong, Dan Khuntod, Nakornrachasima, contract value 340 million baht.
		Construction /	255.71	1.52	
FEC		Services cost			GKA bought finished goods from GKP for use in operations on cost plus 5-30%.
		Creditor of retention	36.36	2.36	
		Purchase of goods	0.95	1.35	
		Account payables	0.48	0.58	
GKA	GKP				

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
	GLED	Purchase of goods	0.04	0.03	GUNKUL bought finished goods from GLED for use in operations on cost plus 5-30%.
	FEC	Purchase of goods	-	-	
		Account payables	-	8.92	
WED	FEC	Construction Cost	14.89	-	WED hiring FEC to construct the electric post and electric high voltage line management 115 KV at Huaybong, Nakornrachasima, value contract 147.07 million baht.
		Creditor of retention	16.20	-	
GPD	FEC	Construction Cost	34.05	-	GPD signed contract to hiring for the construction of the solar power station and Utility size 8 MW at Tahkwean, Wattana Nakorn, Sakaew contract valued 67.91 million baht and the management of Solar Roof project. Construction contract of solar power plant size 111 kW Sakaeporong, Amphur Muang, Buriram Province.
		Account payables	1.35	39.20	
	GLED	Purchase of goods	0.01	1.93	GPD bought finished goods from GLED for use in operations on cost plus 5-30%.
		Account payables	-	0.84	
RNS	FEC	Purchase of intangible assets (transmission line costs)	80.58	-	RNS hired FEC to do a turnkey extra project, a flood protection system, an installation of pumping station, a civil and a public utility testing and a transmission line system 115kV, value contract 93.12 million baht.
		Creditor of retention	8.84	6.04	
		Account payables	1.11	-	
KWE	FEC	Purchase of intangible assets (transmission line costs)	24.58	255.55	KWE hired FEC to build a 115KV transmission line and build a renewable energy project at the agreed price.
		Account payables	-	144.50	
		Creditor of asset	19.86	-	
		Creditor of retention	-	12.42	

Related Company Companies		Size		Reason and necessity
		2016 (Million baht)	2017 (Million baht)	
GNP	FEC	Purchase of intangible assets (transmission line costs)	30.51	GNP hired FEC to build alternative energy projects at the agreed price.
		Account payables	-	
		Creditor of retention	55.58	
			33.13	
(3) Acquisition and divestment of assets and rental				
GUNKUL	GK2000	Rental	6.78	6.45
				GK 2000 rented land and building from Mr. Gunkul dhumrongpiyawut and then re-rent it to GUNKUL to use land and building as a warehouse (Ruamjit) and a warehouse (Pichai) with three-years contract starting from July 1, 2012 to June 30, 2015, at average rental rate of 467,000.00 baht/ month and renew a lease for 2 years from January 1, 2016 to December 31, 2017, at average rental rate of 565,000.00 baht/ month or 100.28 baht/ sqm. for land and a head office building. This rental rate is added with 10% from last year rate that is appraised by independent appraiser, Noble Property Company Limited, at 314.38 baht/sq. wah for Ruamjit and 452.63 baht/sq. wah for Pichai warehouse.
	GMS	Rental	1.54	1.46
				GMS who leased 2 little deeds of land including building from Mr.Gunkul Dhumrongpiyawut in the total 0-3-31 Rai (331 squaremeters) at Soi Watsawadiwari Sriramar, Nakornchaisri Road, Nakornchaisri, Dusit, Bangkok and sublease to GUNKUL in the purpose of office and garage using during April 17, 2013 - December 31, 2015 by rental fee in amount of 119,000 baht per month. Then, renew a lease for 2 years from January 1, 2016 to December 31, 2017 at average rental rate of 128,000 baht/ month This rental rate is added with 8% from last year rate which referred to the appraisal from independent appraiser, Thai Surveyor and Advisory Co., Ltd.

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
NK	Rental Income	0.38	0.23	NK Signed lease agreement with GUNKUL for title deed of land NorSor 3 no. 86 located at Nongkum, Borpoy, Kamchanaburi Province in the total area of 19-2-23 Rai for solar power plant construction in the capacity of 0.94 Mw starting June 12, 2013 for 26 years in total rental amount of 6.06 million baht.	
	Advance Rental Revenue	-	0.16		
	Rental Receivable	0.12	-		
	Rental Income	0.02	0.02	GUNKUL allowed GSR1 to rent factory's rooftop in order to install solar panel 600 Sq.m during 3 years, rental fees 1 Sq.m./3 baht (starting September 3, 2014)	
GMA	Rental	-	0.14	As of December 14, 2017, GUNKUL and GK2000 have made the following memorandum of agreement to change the existing sub-lessors of GK2000 as the new tenants: 1. Great Miracle Asset Co., Ltd. 2. Great Miracle Asset 2 Co., Ltd.	
	Other payables		0.14	3. Great Miracle Asset 3 Co., Ltd. (Lease term from January 1, 2016 to December 31, 2017) for land and office buildings, for land and warehouse (Ruamjit), for land at warehouse (Pichai)	
GMA-2	Rental	-	0.17	As of December 14, 2017, GUNKUL and GK2000 have made the following memorandum of agreement to change the existing sub-lessors of GK2000 as the new tenants: 1. Great Miracle Asset Co., Ltd. 2. Great Miracle Asset 2 Co., Ltd.	
	Other payables	-	0.17	3. Great Miracle Asset 3 Co., Ltd. (Lease term from January 1, 2016 to December 31, 2017) for land and office buildings, for land and warehouse (Ruamjit), for land at warehouse (Pichai)	
GMA-3	Rental	-	0.15	As of December 14, 2017, GUNKUL and GK2000 have made the following memorandum of agreement to change the existing sub-lessors of GK2000 as the new tenants: 1. Great Miracle Asset Co., Ltd. 2. Great Miracle Asset 2 Co., Ltd. 3. Great Asset Miracle 3 Co., Ltd. (Lease term from January 1, 2016 to December 31, 2017) for land and office buildings, for land and warehouse (Ruamjit), for land at warehouse (Pichai)	
	Other payables		0.15		

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GKA	GMA-5	Rental	-	0.07	As of December 14, 2017, GUNKUL and GMS have made the same record at the end of the lease to change the existing sub-leaseholder of GMS, a new tenant, namely: 1. Great Miracle Asset 5 Co., Ltd., based on the existing rental rate (Lease term from 1 January 2016 to 31 December 2017) for office land and parking lot, total area of 0-3-31 rai (331 square wah) Soi Wat Sawaswareesrimaram, Nakornchaisri Road, Nakhonratchasima, Dusit, Bangkok.
		Other payables	-	0.07	
	GKP	Rental Income	1.00	1.00	GKA rented manufacturing building to GKP to use for goods assembly, with 3 year contract starting from July 1, 2012 to December 31, 2015 at rental rate of 100,000 baht/month. Then, renew a lease for 2 years from January 1, 2016 to December 31, 2017 at average rental rate of 83,000 baht/ month
	GLED	Rental Income	0.40	0.40	GKA rented some part of factory area to GUNKUL-LED to manufacturing Led bulbs lighting, area size 380 sq.m. at 110/22 M.2. T.Mahasawat, Bang Kruay, Nonthaburi. Agreement during 3 years starting July 1, 2014 to June 30, 2017 rental 48,000.00 baht/month. However, an a rental rate is change into 33,000 baht/ month referred to the appraisal. The new contract will start from January 1, 2016 to December 31, 2017.
	GSR1	Rental Income	0.12	0.12	GKA rented factory rooftop area to GSR1 for install solar panels 3,456 sq.m. Agreement during 3 years rented per month is 3 baht/sq.m (starting September 2, 2014).
Director	Director	Accrued rental income	-	0.02	GKA has entered into a land lease agreement of 3,472 square meters on 2 plots of land, located on the end of Nonthaburi Rd., near the GKA factory, which is rented from Mr. Gunkul Dhurongpiyawut to serve as a storage space for goods and merchandise. The lease agreement is for a period of 3 years from January 1, 2012 to December 31, 2015, at a rental rate of Baht 57,800 per month and renewable for a period of 2 years from 1 January 2016 to 30 June 2017 at a rental rate of Baht 57,800 per month and from July 1, 2017 to December 31, 2017, at a rental rate of 63,600 baht per month.
		Rental	0.69	0.66	

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GKP	GMA-9	Rental	-	0.06	As of December 1, 2016, GKA and Mr. Gunkul Dhumrongpiyawut have made the same record at the end of the lease in order to change the former sub-lessor, Mr. Gunkul Dhumrongpiyawut into the new tenant, namely 1. Great Miracle Asset 9 Company Limited. (Lease term from July 1, 2017 to December 31, 2017, the land was used for storage space and goods.
		Other payables	-	0.06	
GKP	GMS	Rental	0.61	0.56	GMS rented land and building from Mr. Gunkul Dhumrongpiyawut and re-let them to GKP for use as office, testing building and warehouse. The term of rent agreement is 3 years starting from July 1, 2012 to December 30, 2015 at rental rate of 42,000 baht/ month. Then, renew a lease for 2 years from January 1, 2016 to December 31, 2017 at average rental rate of 51,000 baht/ month. This rental rate is added with 10% from last year rate that is appraised by independent appraiser, Noble Property Company Limited.
		Rental	-	0.05	
GMA-7	GMA-7	Rental	-	0.05	As of December 1, 2017, GKP and Mr. Gunkul Dhumrongpiyawut have made the following memorandum in order to change the former sub-lessor, Mr. Gunkul Dhumrongpiyawut into the new tenant, namely 1. Great Miracle Asset 7 Co., Ltd., (Lease term from 1 January 2016 to 31 December 2017) for land and buildings for office use, test Buildings and storage.
		Other payables	-	0.05	
KNP	GK2000	Rental	1.28	1.06	GK2000 who rented land and warehouse (Ratchaneekorn) from Mr. Gunkul Dhumrongpiyawut re-lets the land to KNP for use as an office, testing building and warehouse. The term of contract is 3 years from July 1, 2012 – December 30, 2015 at total rental rate of 88,500 baht/month. Then, renew a lease for 2 years from January 1, 2016 to December 31, 2017 at average rental rate of 107,000 baht/ month or 100.28 baht/ sq.m. for land and a head office building. The rental rate for land and a warehouse (Ratchaneekorn) is 544.86 baht/sq.m. This rental rate is added with 10% from last year rate that is appraised by independent appraiser, Noble Property Company Limited.
		Rental	1.28	1.06	

Related Company Companies		Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
	GMA-4	Rental	-	0.09	As of December 1, 2017, KNP and GK2000 have made the same note at the end of the lease to change the existing sub-lessor, GK2000 into a new tenant- 1. Great Miracle Asset 4 Co., Ltd. with the rental rate under the original contract. (Lease term from 1 January 2016 to 31 December 2017) for land and warehouse (Ratchaneekorn)
		Other payables	-	0.09	
GLED	PMBG	Rental and service	0.68	0.59	GLED rented the office area of PM and PMBG Building to be the head office size 225 sq.m. located at 23 Ruamjit Road, Nakornchisri , Dusit Bangkok during 3 years contract from January 9, 2015 - January 8, 2018, rental rate 28,125.00 baht/month including the service contract of the building at rate 28,125 baht/ month.
		Accrued rent	-	0.06	
(4) Financial Support					
GUNKUL	GPD	Short-term loans			GUNKUL lent money to GPD to use in business by issuing promissory note with charged interest at the rate of 2.60-5.00% per year. The interest rates are mutually agreed.
		Early repayment loan	-	-	
		Loans during the period	230.00	124.00	
		Payment	(230.00)	(124.00)	
		Balance	-	-	
		Interest received	2.38	0.44	
		Short-term loans			
		Early repayment loan	-	-	
		Loans during the period	-	100.00	
		Pay back	-	(100.00)	
Balance	-	-			
		Interest payable	-	0.22	GUNKUL borrowed money from GPD for use in business with an interest at the rate of 2.73% per year, which is in accordance with the mutual agreement.

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GLED	GLED	Short-term loans			GUNKUL lent money to GLED to use in business by issuing promissory note with charged interest at the rate of 2.60-3.13% per year. The interest rates are mutually agreed.
		Early repayment loan	-	47.00	
		Loans during the period	47.00	-	
		Payment	-	(3.00)	
		Balance	47.00	44.00	
		Interest received	1.00	1.34	
BGP	BGP	Accrued interest receivable	1.01	2.32	GUNKUL lent money to BGP to use in business by issuing promissory note with charged interest at the rate of 0% per year. The interest rates are mutually agreed.
		Short-term loans			
		Loans during the period	40.33	40.33	
		Payment	-	-	
		Balance	40.33	40.33	
		Interest received	0.18	-	
RNS	RNS	Short-term loans			GUNKUL lent money to RNS to use in business by issuing promissory note with charged interest at the rate of 4.70% per year. The interest rates are mutually agreed.
		Early repayment loan	345.00	345.00	
		Payment	-	(345.00)	
		Balance	345.00	-	
		Interest received	15.94	3.97	
		Accrued interest receivable	17.69	-	
WED	WED	Short-term loans			GUNKUL lent money to WED to use in business by issuing promissory note with charged interest at the rate of 3.06% per year. The interest rates are mutually agreed.
		Early repayment loan	493.00	-	
		Payment	(493.00)	-	
		Balance	-	-	
		Interest received	3.86	-	

Related Company	Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GIM		<u>Short-term loans</u>			GUNKUL lent money to GIM to use in business without interest.
		Early repayment loan	1,002.86	-	
		Loans during the period		517.81	
		Convert debt to investment	(657.29)	-	
		Payment	(345.57)	(517.81)	
		Balance	-	-	
		Interest received	4.38	-	
		<u>Short-term loans</u>			
		Early repayment loan	-	-	
		Loans during the period	-	349.06	
ECO		Difference from exchange rate change	-	3.06	GUNKUL borrowed money to GIM to use in business without interest.
		Balance	-	352.12	
		Interest payable	-	-	
		<u>Short-term loans</u>			
		Early repayment loan	125.00	125.00	
		Loans during the period	-	57.00	
		Pay back	(125.00)	(182.00)	
		Balance	-	-	
		Interest received	0.17	6.51	
		Accrued interest receivable	0.17	0.78	
					GUNKUL lent money to ECO to use in business by issuing promissory note with charged interest at the rate of 5.00% per year. The interest rates are mutually agreed.

Related Company Companies	Type of Transaction	Size		Reason and necessity
		2016 (Million baht)	2017 (Million baht)	
BMP	<u>Short-term loans</u>			GUNKUL lent money to BMP to use in business by issuing promissory note with charged interest at the rate of 3.01% per year. The interest rates are mutually agreed.
	Early repayment loan	-	-	
	Loans during the period	-	460.98	
	Pay back	-	(20.00)	
	Balance	-	440.98	
	Interest received	-	7.86	
GNP	Accrued interest receivable	-	7.86	GUNKUL lent money to GNP to use in business by issuing promissory note with charged interest at the rate of 2.80-3.27% per year. The interest rates are mutually agreed.
	<u>Short-term loans</u>			
	Early repayment loan	-	-	
	Loans during the period	-	500.00	
	Pay back	-	(500.00)	
	Balance	-	-	
GSP	Interest received	-	1.38	GUNKUL lent money to GSP to use in business by issuing promissory note with charged interest at the rate of 2.97% per year. The interest rates are mutually agreed.
	Accrued interest receivable	-	-	
	<u>Short-term loans</u>			
	Early repayment loan	-	-	
	Loans during the period	-	0.50	
	Pay back	-	-	
	Balance	-	0.50	
	Interest received	-	0.01	
	Accrued interest receivable	-	0.01	

Related Company	Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GSP1		<u>Short-term loans</u>			GSP1 lent money to GUNKUL to use in business by issuing promissory note with charged interest at the rate of 2.65% per year. The interest rates are mutually agreed.
		Early repayment loan	-	-	
		Loans during the period	-	34.00	
		Pay back	-	(34.00)	
		Balance	-	-	
		Interest payable	-	0.14	
GSP2		accrued interest payable	-	-	GSP2 lent money to GUNKUL to use in business by issuing promissory note with charged interest at the rate of 2.65% per year. The interest rates are mutually agreed.
		<u>Short-term loans</u>			
		Early repayment loan	-	-	
		Loans during the period	-	23.00	
		Pay back	-	(23.00)	
		Balance	-	-	
GSP3		Interest payable	-	0.16	GSP3 lent money to GUNKUL to use in business by issuing promissory note with charged interest at the rate of 2.65% per year. The interest rates are mutually agreed.
		accrued interest payable	-	-	
		<u>Short-term loans</u>			
		Early repayment loan	-	-	
		Loans during the period	-	30.00	
		Pay back	-	(30.00)	
		Balance	-	-	
		Interest payable	-	0.13	
		accrued interest payable	-	-	

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GSP4		<u>Short-term loans</u>			GSP4 lent money to GUNKUL to use in business by issuing promissory note with charged interest at the rate of 2.65% per year. The interest rates are mutually agreed.
		Early repayment loan	-	-	
		Loans during the period	-	37.00	
		Pay back	-	(37.00)	
		Balance	-	-	
		Interest payable	-	0.17	
GSP5		accrued interest payable	-	-	GSP5 lent money to GUNKUL to use in business by issuing promissory note with charged interest at the rate of 2.65% per year. The interest rates are mutually agreed.
		<u>Short-term loans</u>			
		Early repayment loan	-	-	
		Loans during the period	-	36.00	
		Pay back	-	(36.00)	
		Balance	-	-	
GSP6		Interest payable	-	0.17	GSP6 lent money to GUNKUL to use in business by issuing promissory note with charged interest at the rate of 2.65% per year. The interest rates are mutually agreed.
		accrued interest payable	-	-	
		<u>Short-term loans</u>			
		Early repayment loan	-	-	
		Loans during the period	-	40.00	
		Pay back	-	(40.00)	
		Balance	-	-	
		Interest payable	-	0.17	
		accrued interest payable	-	-	

Related Company Companies	Type of Transaction	Size		Reason and necessity
		2016 (Million baht)	2017 (Million baht)	
SES	Short-term loans			GUNKUL lent money to SES to use in business by issuing promissory note with charged interest at the rate of 2.77% per year. The interest rates are mutually agreed.
	Early repayment loan	-	-	
	Loans during the period	-	31.00	
	Pay back	-	-	
	Balance	-	31.00	
	Interest received	-	0.41	
	Accrued interest receivable	-	0.41	
GOB	Short-term loans			GUNKUL lent money to GOB to use in business by issuing promissory note with charged interest at the rate of 6.50% per year. The interest rates are mutually agreed.
	Early repayment loan	-	-	
	Loans during the period	-	8.00	
	Pay back	-	(8.00)	
	Balance	-	-	
	Interest received	-	0.05	
	Accrued interest receivable	-	-	
GPD	Short-term loans			GPD short-term loans from GSP1 for use as working capital by issuing promissory note with charged interest at the rate of 2.87% per year. The interest rates are mutually agreed.
	Early repayment loan	-	-	
	Loans during the period	-	15.00	
	Pay back	-	-	
	Balance	-	15.00	
	Interest payable	-	0.03	
	accrued interest payable	-	0.03	

Company	Related Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GSP2	GSP2	<u>Short-term loans</u>			GPD short-term loans from GSP2 for use as working capital by issuing promissory note with charged interest at the rate of 2.87% per year. The interest rates are mutually agreed.
		Early repayment loan	-	-	
		Loans during the period	-	17.00	
		Pay back	-	-	
		Balance	-	17.00	
		Interest payable	-	0.04	
GSP3	GSP3	accrued interest payable	-	0.04	GPD short-term loans from GSP3 for use as working capital by issuing promissory note with charged interest at the rate of 2.87% per year. The interest rates are mutually agreed.
		<u>Short-term loans</u>			
		Early repayment loan	-	-	
		Loans during the period	-	14.00	
		Pay back	-	-	
		Balance	-	14.00	
GSP4	GSP4	Interest payable	-	0.03	GPD short-term loans from GSP4 for use as working capital by issuing promissory note with charged interest at the rate of 2.87% per year. The interest rates are mutually agreed.
		accrued interest payable	-	0.03	
		<u>Short-term loans</u>			
		Early repayment loan	-	-	
		Loans during the period	-	18.00	
		Pay back	-	-	
		Balance	-	18.00	
		Interest payable	-	0.04	
		accrued interest payable	-	0.04	

Related Company	Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
GSP5		Short-term loans			GPD short-term loans from GSP5 for use as working capital by issuing promissory note with charged interest at the rate of 2.87% per year. The interest rates are mutually agreed.
		Early repayment loan	-	-	
		Loans during the period	-	18.00	
		Pay back	-	-	
		Balance	-	18.00	
		Interest payable	-	0.04	
		accrued interest payable	-	0.04	
GSP6		Short-term loans			GPD short-term loans from GSP6 for use as working capital by issuing promissory note with charged interest at the rate of 2.87% per year. The interest rates are mutually agreed.
		Early repayment loan	-	-	
		Loans during the period	-	18.00	
		Pay back	-	-	
		Balance	-	18.00	
		Interest payable	-	0.04	
		accrued interest payable	-	0.04	
GOB	OGA	Short-term loans			GOB short-term loans from OGA for use as working capital by issuing promissory note with charged interest at the rate of 6.30% per year. The interest rates are mutually agreed.
		Early repayment loan	3.50	3.50	
		Pay back	-	-	
		Balance	3.50	3.50	
		Interest payable	0.15	0.23	
		accrued interest payable	0.15	0.12	

Related Company Companies	Type of Transaction	Size		Reason and necessity
		2016 (Million baht)	2017 (Million baht)	
OGB	<u>Short-term loans</u>			GOB short-term loans from OGB for use as working capital by issuing promissory note with charged interest at the rate of 6.30% per year. The interest rates are mutually agreed.
	Early repayment loan	2.60	2.60	
	Pay back	-	-	
	Balance	2.60	2.60	
	Interest payable	0.11	0.17	
OGD	accrued interest payable	0.11	0.09	GOB short-term loans from OGD for use as working capital by issuing promissory note with charged interest at the rate of 6.30% per year. The interest rates are mutually agreed.
	<u>Short-term loans</u>			
	Early repayment loan	0.60	0.60	
	Pay back	-	-	
	Balance	0.60	0.60	
OGE	Interest payable	0.03	0.04	GOB short-term loans from OGE for use as working capital by issuing promissory note with charged interest at the rate of 6.30% per year. The interest rates are mutually agreed.
	accrued interest payable	0.03	0.02	
	<u>Short-term loans</u>			
	Early repayment loan	0.40	0.40	
	Pay back	-	-	
	Balance	0.40	0.40	
	Interest payable	0.02	0.03	
	accrued interest payable	0.02	0.01	

Related Company	Type of Transaction	Size		Reason and necessity	
		2016 (Million baht)	2017 (Million baht)		
(5) Other items					
GUNKUL	GKP	Dividend income	25.00	14.49	- In 2016, GUNKUL got dividend, from GKP approved by Board of director meeting no. 4/2016 on July 25, 2016. Interim dividend payment was approved ending December 31, 2015 and March 31, 2016 rate of 250 baht/share for 99,998 shares held (par value 1000.00 baht each), dividend totally 25.00 million baht and expected to pay in July 2016.
		Dividend receivable	-	-	- In 2017, GUNKUL got dividend, from GKP approved by Board of director meeting no. 7/2017 on December 19, 2017. Interim dividend payment was approved ending December 31, 2016 rate of 144.88 baht/share for 99,998 shares held (par value 1000.00 baht each), dividend totally 14.49 million baht and expected to pay in January 2017.
	KNP	Dividend income	-	10.00	- No dividend payment in 2016
		Dividend receivable	-	-	- In 2017, GUNKUL got dividend, from KNP approved by Board of director meeting no. 5/2017 on September 11, 2017. Interim dividend payment was approved ending June 30, 2017 rate of 20.00 baht/share for 499,998 shares held (par value 1,000.00 baht each), dividend totally 10.00 million baht and expected to pay in October 2017.
	GPS	Dividend income	88.54	70.12	- In 2016, GUNKUL got dividend, from GPS approved by AGM 2016 on March 23, 2016. Dividend payment 2015 was approved from retained earnings rate of 12.00 baht/share from 3,719,998 shares held (par value 100.00 baht each), dividend totally 44.64 million baht. Interim dividend payment was approved from retained earnings rate of 11.80 baht/share. From 3,719,998 shares held (par value 1,000.00 baht each), dividend totally 43.90 million baht, expected to pay regarding to company's financial resource.
		Dividend receivable	91.40	115.80	

Related Company	Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
					<ul style="list-style-type: none"> - In 2017, GUNKUL got dividend, from GPS approved by AGM 2017 on March 30, 2017 and the resolution of the Board of Directors' Meeting No. 3/2017. Interim dividend payment was approved from unappropriated retained earnings at the end of 31 December 2016 at the rate of Baht 11.10 per share and for the period of June 30, 2017 at the rate of Baht 7.75 per share from 3,719,998 shares (at par value of Baht 100.00 per share), dividends received totaling Baht 70.12 million.
GCPG		Dividend income Dividend receivable	119.09 -	107.10 -	<ul style="list-style-type: none"> - In 2016, GUNKUL got dividend, from GCPG approved by AGM on April 4, 2016, Board of director meeting no. 2/2016 on August 8, 2016 and meeting no. 7/2016 on November 8, 2016. Interim dividend payment was approved ending December 31, 2015 rate of 6.50 baht/share and on March 31, 2016 rate of 6.78 baht/share and on June 30, 2016 rate of 5.74 baht/share and on September 30, 2016 rate of 4.52 baht/share for 5,095,195 shares held (par value 100.00 baht each), dividend totally 119.09 million baht and expected to pay in April, June, September and December 2016. - In 2017, GUNKUL received the dividend from GCPG according to the resolution of the Annual General Meeting of Shareholders 2017 held on April 4, 2017 and according to the resolution of the Board of Directors' Meeting No. 2/2017 held on May 8, 2017, No. 3/2017 on August 9, 2017 and 4/2017 held on November 8, 2017, it was resolved to pay dividends from the operation for the year ended December 31, 2016 at the rate of 4.32 baht per share, for the year ended March 31, 2017 at the rate of 5.53 per share, for the period ending June 30, 2017 at the rate of Baht 6.62 per share and at the end of September 30, 2017 at the rate of Baht 4.70 per share. GUNKUL holds 5,059,195 shares (par value Baht 100.00 per share), totaling Baht 107.10 million. The dividend payment expected to pay in April, June, August and November 2017.

Related Company	Type of Transaction	Size		Reason and necessity
		2016 (Million baht)	2017 (Million baht)	
GSP-2	Dividend income	-	1.20	<ul style="list-style-type: none"> - No dividend payment in 2016 - In 2017, GUNKUL received dividends from GSP-2 according to the resolution of the Board of Directors' Meeting No. 2/2017 held on April 10, 2017. Approved the interim dividend from unappropriated retained earnings at the end of Q1 for the period ended March 31, 2017 at the rate of Baht 1.20 per share from the total number of 999,997 shares (par value of Baht 100.00) to be paid within April 2017.
GPD	Dividend income	-	172.80	<ul style="list-style-type: none"> - No dividend payment in 2016 - In 2017, GUNKUL received a dividend from GPD according to the resolution of the Board of Directors' Meeting No. 1/2017 held on February 17, 2017. Approved the interim dividend from unappropriated retained earnings for the period ended December 31, 2016 at the rate of Baht 345.60 per share from the total of 499,997 shares (par value of Baht 100.00), dividend totally Baht 172.80 million and expected to pay in March 2017
IAE	Dividend income	-	238.09	<ul style="list-style-type: none"> - No dividend payment in 2016 - In 2017, GUNKUL received dividends from IAE according to the resolution of the Board of Directors' Meeting No. 2/2017 held on March 9, 2017, No. 4/2017, held on June 13, 2017, No. 6/2017 held on September 8, 2017 and No. 8/2017, held on December 1, 2017, approved an interim dividend for unappropriated retained earnings for the period ended February 28, 2017 at the rate of Baht 12.02 per share, for the period ended May 31, 2017 at the rate of Baht 4.20 per share, for the period ending August 31, 2017 at the rate of Baht 3.55 per share and for the period ended November 30, 2017 at the rate of Baht 2.58 per share, respectively, from the number of shares held by the Company at 10,652,999 shares (par value 100.00 baht each), dividend totally Baht 238.09 million, and expected to pay in March, July, October and November 2017 respectively.

Related Company	Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
NK		Dividend income	-	20.00	- In 2017, GUNKUL received dividends from NK according to the resolution of the Board of Directors' Meeting No. 2/2017 held on April 10, 2017 and No. 6/2017 held on December 14, 2017 approved the payment of interim dividend from unappropriated retained earnings for the period ended February 28, 2017 at the rate of Baht 99.99 per share and for the period ended September 30, 2017 from 2,940 shares (par value of Baht 100.00 per share). The total dividend payment of Baht 20 million is due to be paid within April and December 2017.
					- In 2017, GUNKUL received dividends from SES according to the resolution of the Board of Directors' Meeting No. 2/2017 held on April 10, 2017. approved the interim dividend from unappropriated retained earnings for the period ending February 28, 2017 at the rate of Baht 10.00 per share from the total number of 203,997 shares (par value of Baht 100.00). The total dividend payment of Baht 2.04 million is due to be paid within April 2017.
SES		Dividend income	-	2.04	- In 2017, GUNKUL received dividends from SGSE according to the resolution of the Board of Directors' Meeting No. 2/2017 held on April 10, 2017. approved the interim dividend for unappropriated retained earnings for the period ended February 28, 2017 at the rate of Baht 14.75 per share from the total of 408,997 shares (par value of Baht 100.00). The total dividend payment of Baht 6.03 million is due to be paid within April 2017.
					- In 2017, GUNKUL received dividends from SGSE according to the resolution of the Board of Directors' Meeting No. 2/2017 held on April 10, 2017. approved the interim dividend for unappropriated retained earnings for the period ended February 28, 2017 at the rate of Baht 14.75 per share from the total of 408,997 shares (par value of Baht 100.00). The total dividend payment of Baht 6.03 million is due to be paid within April 2017.
SGSE		Dividend income	-	6.03	- In 2017, GUNKUL received dividends from SGSE according to the resolution of the Board of Directors' Meeting No. 2/2017 held on April 10, 2017. approved the interim dividend for unappropriated retained earnings for the period ended February 28, 2017 at the rate of Baht 14.75 per share from the total of 408,997 shares (par value of Baht 100.00). The total dividend payment of Baht 6.03 million is due to be paid within April 2017.
					- In 2017, GUNKUL received dividends from SGSE according to the resolution of the Board of Directors' Meeting No. 2/2017 held on April 10, 2017. approved the interim dividend for unappropriated retained earnings for the period ended February 28, 2017 at the rate of Baht 14.75 per share from the total of 408,997 shares (par value of Baht 100.00). The total dividend payment of Baht 6.03 million is due to be paid within April 2017.

Related Company	Companies	Type of Transaction	Size		Reason and necessity
			2016 (Million baht)	2017 (Million baht)	
IAE	RNS	Dividend income	-	378.72	<ul style="list-style-type: none"> - No dividend payment in 2016 - In 2017, IAE received dividends from RNS according to the resolution of the Board of Directors' Meeting No. 3/2017 held on February 28, 2017, No. 4/2017 held on May 9, 2017, No.7/2017 held on August 10, 2017, No.8/2017 held on November 7, 2017, approved the interim dividend for unappropriated retained earnings for the period ended January 31, 2017 at the rate of Baht 15.15 per share, for the period ended March 31, 2017 at the rate of Baht 5.25 per share, for the period ended June 30, 2017 at the rate of Baht 4.35 per share, for the period ended September 30, 2017 at the rate of Baht 3.20 per share, representing 13,549,997 shares (par value of Baht 100.00 per share). The total dividend payment will be Baht 378.72 million, is due to be paid within February, June, September and November 2017.

23.5 Policy and procedure of related transaction approval

Related transaction between the Company and its subsidiaries and related companies/person depend on reason, necessity and benefit to the Company as a whole. Price has to be fair or equivalent to normal business condition and in compliance with Securities and Exchange Act and other related rules and regulations. The Company sets procedures and steps of approving such related transactions by not allowing management or related persons who have conflict of interest in that transaction to participate in the approval process. In case this transaction involves related person who may have conflict of interest, or might happen in the future. A management division may propose the transaction to the board of directors or shareholders meeting for approval depend on size list.

In case of a transaction with a person which may cause the conflict of interest, the Board of Directors has set up the policy to ensure the transparency and justice equally for all shareholders based on the following principles;

- The transaction shall gain the approval from the Directors and Executives with the careful, honest and transparent consideration, by which the interested person does not participate in the decision.
- The transaction is conducted with consideration of the Company's benefits like the transaction with the outsider.
- The Company establishes the monitoring and following-up system to ensure that the transaction is in compliance with the process.
- The transaction information is disclosed completely and correctly in the proper time.

The Company's policy on the transaction categorizes the transactions as follows;

- The regular business and regular business promotion between the Company and its subsidiaries / affiliates and Directors, Executives or the related person which gains the approval in principles from the Board of Directors shall be conducted by the Management, if the transaction has the trade agreement in the manner that the respectable person would agree with his counterpart in the same situation with the trade bargain leverage not influenced by the fact that he is the Director, Executive or the related person.

The Company shall make the transaction summary report to propose in the meeting of the Audit Committee and the meeting of the Board of Directors every quarter.

- Other transactions aside from the above-mentioned regular business and regular business promotion such as the short-term rent or lease of immovable property, transaction in relation to the asset or service (for example the investment or sale of the financial investment in the business) or the offer or reception of the financial assistance.

The Company's policy specifies the approval authority in compliance with the principle of Stock Exchange of Thailand.

The Company shall make the transaction summary report to propose in the meeting of the Audit Committee and the meeting of the Board of Directors every quarter.

The Board of Directors shall comply with the Securities and Exchange Act B.E. 2535, regulations, notifications, orders or requirements of Stock Exchange of Thailand. Additionally, it shall comply with regulations regarding the related transaction and the gain / disposal of the key assets of the Company or its subsidiaries / affiliates, so that the transaction does not bring about the conflict of interest and cause the utmost benefits for all shareholders. In this regard, the Company shall disclose the details of transactions in the annual information declaration (Form 56-1), the Company's annual report and the notes to financial statement which shall be audited by the Company's auditors.

23.6 Policy and trend to do related transactions in the future

1. Trend of related transactions with persons with possible conflict of interest

- K.N.P.Supply Co.,Ltd., G.K Assembly Co., Ltd., G.K. Power Products Co., Ltd., and Gunkul LED Lighting Co., Ltd.: The Company will continue to have related transactions with these subsidiaries, which are purchase/sale of goods, purchase/sale of assets, lending/borrowing including guarantees of loans, and taking pledges of the subsidiaries' assets for the Company's loans.
- Wind Energy Development Co., Ltd., Greenovation Power Co., Ltd., Korat Wind Energy Co., Ltd., Gunkul Solar Power Co., Ltd., Gunkul Solar Power 1 Co., Ltd., Gunkul Solar Power 2 Co., Ltd., Gunkul Solar Power 3 Co., Ltd., Gunkul Solar Power 4 Co., Ltd., Gunkul Solar Power 5 Co., Ltd., Gunkul Solar Power 6 Co., Ltd., Bright Green Power Co., Ltd., Siam Gunkul Solar Energy Co., Ltd., Solar Energy Society Co., Ltd., Gunkul Solar Roof 1 Co., Ltd., NK Power Solar Co., Ltd., Gunkul Solar Community Co., Ltd., Rang Ngern Solution Co., Ltd., GO Bioenergy Co., Ltd. and its subsidiaries, Eco Thai Energy Co., Ltd., BMP Solar Co., Ltd., and Gunkul Bioenergy Co., Ltd. : operate electricity power production and generation business. Therefore, the subsidiaries may have related transactions constantly, which are sales of goods, purchase/sales of assets, lending/ borrowing including guarantees of loans, and taking pledges of the subsidiaries' assets for the Company's loans.

In case, that any previous power plant has already entered Commercial Operation, will trend to reduce related transactions or non-related transactions. Upon any company that has enough incomes and circulating funds.

- Gunkul International (Mauritius), Gunkul Investment (Singapore) Pte. Ltd., and Gunkul Myanmar Power (Hlawga)Ple, Ltd.: Operating oversea investment. Therefore, the Company may have related transactions constantly, which are lending/borrowing including guarantees of loans, and taking pledges for the Company's loans.
- Gunkul Power development Co., Ltd.: operate solar rooftop construction and electricity power production and generating business. Therefore, the Company and the subsidiaries may have related transactions constantly, which are sale of goods, purchase/sale of assets, lending/borrowing including guarantees of loans, and taking pledges of the subsidiaries' assets for the Company's loans.
- Gunkul Training Center Co., Ltd.: Operate educational service, seminar management, training management and any other related to the study. As a result, such subsidiary companies may continue to make inter-transactions, such as providing training to employees of the Company and the Group.
- GK Sendai, GK Kimitsu, GK Utsunomiya and GK Iwakuni Project: are the projects which GUNKUL invested for operating electricity power production and generation. Therefore, these projects might have related transactions constantly, which is financial supporting, lending/borrowing from the Company.
- Gunkul Chubu Powergen Co., Ltd. : operate electricity power production and generation business. Therefore, such joint venture and jointly control companies may continue to make intercompany transactions, which are sale of goods and power plant maintenance.
- G-Power Source Co., Ltd.: operates electricity power production and generating business. Therefore, the Company and the associated company may have related transactions constantly, which are sale of goods and power plant maintenance.
- WHA Gunkul Green Solar Roof 1 Co., Ltd., WHA Gunkul Green Solar Roof 3 Co., Ltd., WHA Gunkul Green Solar Roof 6 Co., Ltd., WHA Gunkul Green Solar Roof 17 Co., Ltd.: operate electricity generation and distribution business Therefore, the Company and such joint venture may continue to be connected to each other, including maintenance services for power plants.
- Gunkul Group Co., Ltd.: Being the major shareholder of the Company, it has given the Company some financial supports such as loans and credit guarantees. After the successful debt restructuring, GUNGUL will seek less financial support from this company
- Future Electrical Control Co., Ltd., and JV FEC & SAC: As the Company and those JVs are in construction business for civil and system work, related transactions happens as usual like purchase of goods or hire to produce finished goods etc. Such related transactions are necessary

and based on normal business practice to support the Company's operations. The Company, however, has no policy to sell its products to JVs for any other purpose, such as for re-reselling, except for its core business. The Company also has no policy to give financial aids or guarantee/pledge to JVs.

- Gunkul Marine Line Co., Ltd.: GUNKUL will no longer give financial aids to this company.
- Kulnatee Co., Ltd., and Gunkul Trading & Agency Co., Ltd.: GUNKUL will no longer give financial aids to this company.
- Gunkul Engineering (2000) Co., Ltd., and G.M. Supply and Construction Co., Ltd.: As these two companies rent land and buildings which belong to Mr.Gunkul Dhumrongpiyawut. So the Company has to sub-rent such land and buildings from these companies for use in business operations. However, after 2017 the lease agreement will be changed to a contract with the Great Miracle Asset Group, a company that set up to lease real estate and movable property.
- Great Miracle Asset Co., Ltd. Group: operate a real estate and movable property business. The land and buildings are leased to the Company and the Group in order to use in business.
- Mr.Gunkul Dhumrongpiyawut and Ms.Sopacha Dhumrongpiyawut: The Company and its subsidiaries have already pledged all of their guarantee obligations to the bank which has granted the credit facilities in 2017.

2. Policy on related transactions in the future

The Company has a policy on related transactions by set up a normal practical business terms, set up a market price which can compare with a price from outsider and comply with the law or the principle of Stock Exchange of Thailand including, regulations, notifications, orders or requirements. The Company sets measures and procedures of approving such related transactions by not allowing management or related persons who have conflict of interest in that transaction to participate in the approval process. In case this transaction involves related person who may have conflict of interest, or might happen in the future. A management division may propose the transaction to the board of directors or shareholders meeting for approval depend on size list. In purpose to comply with a policy and a table of approval authority, which set up to be a guideline for proceeding the matter and for ensuring the transparency.

The Company will comply with regulations about disclosure of related transactions as well as make the transaction summary report to propose in the meeting of the Audit Committee and the meeting of the Board of Directors every quarter. The Company will disclose related transactions in its annual report and in the notes to the audited financial statements.

24. Board of Directors' Responsibility for Financial Reporting

According to the Public Company Act B.E. 2535 (1992), Accounting Act, B.E. 2543 (2000) Securities, the Exchange Act BE 2535 (1992) and the Notification of Capital Market by the subject of criteria, conditions, and procedures for disclosing information in financial status and performance of a securities issuing company stated that the board of directors should prepare the financial statement to present their financial status, operational performance, the change of shareholder's equity, and statement of cash flows of the previous fiscal year which is true and reasonable.

Since the board of directors becomes aware of obligations and responsibilities of overseeing the financial reports preparation to ensure efficient operational processes, the audit committee has been appointed to response for auditing the accounting policy and quality of the financial report, reviewing the internal control system, internal auditing to an organization's overall risk management framework, developing appropriate and efficiency internal controls ensuring accurate, complete, reasonably and consistent accounting data and must be sufficient to maintain the property and to significantly prevent fraud or unusual operation, disclosure transparent information related to all transactions between each other and financial information contained in the annual report. The financial statements prepared in accordance with a generally accepted accounting standard by selecting the most appropriate policy, practice consistently, very careful in the judgments, preparing a good estimate, and adequate disclosure of important information in notes to the financial statement for benefit of shareholders and general investors with transparency.

The financial statements of the Company and the consolidated financial statements of Company and its subsidiaries for the year ended December 31, 2017 have been examined by an external auditor, SP Auditor Co., Ltd. To conduct the audits and express an opinion in accordance with generally accepted auditing standards, the auditor was provided with all of the Company's records and related data as requested. The auditor's opinion is presented in the auditor's report as part of this annual report.

The Board of Directors considers the Company's overall internal control system satisfactory and provides credibility and reliability to Gunkul Engineering Public Company Limited and its subsidiaries' consolidated financial statements for the year ended December 31, 2017. The Board of Directors also believes that all these financial statements have been prepared in accordance with generally accepted accounting principle and related regulations.



(Mr. Gunkul Dhumrongpiyawut)

Chairman of the Board

21st February 2018

25. Summary of Financial Statements

Financial Statements

(1) Independent Auditor's Report

- Miss Susan Eiamvanicha, Certified Public Accountant (Thailand) No. 4306 from S.P. Audit Company Limited has audited the consolidated and separate financial statements of Gunkul Engineering Public Company Limited and its subsidiaries (the "Group") and of Gunkul Engineering Public Company Limited (the "Company"), respectively, which comprise the consolidated and separate statements of financial position as of 31 December 2015, and expressed the unqualified opinion that the consolidated and separate financial statements, consolidated and separate cash flows statements for the year then ended, and notes, comprising a summary of significant in accordance with Thai Financial Reporting Standards.
- Miss Susan Eiamvanicha, Certified Public Accountant (Thailand) No. 4306 from S.P. Audit Company Limited has audited the consolidated and separate financial statements of Gunkul Engineering Public Company Limited and its subsidiaries (the "Group") and of Gunkul Engineering Public Company Limited (the "Company"), respectively, which comprise the consolidated and separate statements of financial position as of 31 December 2016, and expressed the unqualified opinion that the consolidated and separate financial statements, consolidated and separate cash flows statements for the year then ended, and notes, comprising a summary of significant in accordance with Thai Financial Reporting Standards.
- Mr. Waiyawut Kosamarnchaiyakij, Certified Public Accountant (Thailand) No. 6333 from KPMG Phoomchai Audit Ltd. has audited the consolidated and separate financial statements of Gunkul Engineering Public Company Limited and its subsidiaries (the "Group") and of Gunkul Engineering Public Company Limited (the "Company"), respectively, which comprise the consolidated and separate statements of financial position as of 31 December 2017, and expressed the unqualified opinion that the consolidated and separate financial statements, consolidated and separate cash flows statements for the year then ended, and notes, comprising a summary of significant in accordance with Thai Financial Reporting Standards.

(2) Table Summary of Financial Statements

Gunkul Engineering Public Company Limited and Its Subsidiaries

Statements of Financial Position As at 31 December 2015, 31 December 2016 and 31 December 2017

Unit : Baht

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
Assets						
Current assets						
Cash and cash equivalents	1,048,230,302	2,468,235,940	3,570,789,981	240,328,765	1,043,943,100	2,593,990,315
Current investments	605,020,371	964,357,175	367,225,824	550,020,906	949,668,647	367,225,824
Short-term deposits from financial institution pledged as collateral	964,049,692	585,106,438	-	-	-	-
Trade accounts receivable	1,182,394,884	730,122,051	1,091,647,099	223,096,299	472,975,037	799,446,524
Unbilled revenue	759,609,883	336,760,467	328,097,608	12,148,598	12,294,188	179,983,357
Other receivables	322,363,656	237,296,705	83,813,000	171,580,815	138,475,797	53,996,672
Revenue Department receivable	100,734,948	348,773,321	371,816,992	-	-	1,898,355
Short-term loans to related parties	-	-	-	556,807,750	557,327,750	457,000,000
Inventories	403,770,833	402,336,809	361,415,219	194,904,660	226,817,716	220,641,102
Total current assets	5,386,174,569	6,072,988,906	6,174,805,723	1,948,887,793	3,401,502,235	4,674,182,149

Unit : Baht

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
Non-current assets						
Long-term deposits from financial institution pledged as collateral	40,769,169	47,007,084	216,750,091	-	45,572,105	195,402,928
Investments in associates	381,407,019	356,891,224	351,679,172	397,594,800	397,694,800	397,694,800
Investments in joint ventures	1,005,233,337	939,043,106	880,069,437	520,050,150	521,281,892	521,281,893
Investments in subsidiaries	-	-	-	12,272,402,201	10,135,282,120	6,557,342,006
Investment properties	-	-	-	3,143,658	3,143,658	3,143,658
Property, plant and equipment	18,124,996,874	13,604,874,869	7,646,247,634	70,572,269	70,861,343	78,827,992
Intangible assets and goodwill	4,431,268,781	3,358,594,134	2,952,231,130	4,091,404	4,663,578	4,367,689
Advance for shares subscription	-	180,000,000	-	-	180,000,000	-
Deposit for purchase of assets	362,141,578	384,815,570	-	-	-	-
Advance for land lease	215,440,843	209,441,988	179,762,100	-	-	-
Deferred tax assets	21,505,222	37,353,056	23,995,685	9,392,391	6,666,921	5,059,086
Other non-current assets	408,078,797	404,821,409	389,716,899	273,070,614	330,923,338	283,677,953
Total non-current assets	24,990,841,620	19,522,842,440	12,640,452,150	13,550,317,487	11,696,089,755	8,046,798,004
Total assets	30,377,016,189	25,595,831,346	18,815,257,874	15,499,205,280	15,097,591,990	12,720,980,152
Liabilities and equity						
Current liabilities						
Short-term loans from financial institutions	2,231,925,456	3,980,796,802	3,875,611,128	1,957,821,723	3,922,101,802	3,656,882,214
Short-term loans from related parties	-	-	100,499,379	352,121,984	-	135,719,755.41
Trade accounts payable	712,123,735	526,068,047	666,917,240	259,998,139	310,963,054	469,008,684
Unearned revenues	196,211,114	220,548,132	3,302,023	14,813,972	1,844,128	2,983,355

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
Payable for purchases of assets	1,702,854,567	745,730,428	1,188,505,203	-	16,474	533,986
Revenue Department payable	10,627,769	12,781,005	5,711,965	1,171,368	6,359,001	-
Retention payables	322,150,409	292,188,859	14,365,388	10,113,851	27,603,885	7,447,103
Other payables	332,054,089	196,999,134	388,800,000	98,421,099	65,579,772	388,800,000
Current portion of long-term loans	632,315,625	528,346,274	38,773,475	-	-	-
Current portion of debentures	280,000,000	300,000,000	-	280,000,000	300,000,000	-
Current portion of finance lease liabilities	12,400,544	12,861,359	15,496,459	9,426,787	9,205,418	11,079,291
Income tax payable	33,807,045	5,141,588	73,840,452	-	1,762,540	39,644,805
Total current liabilities	6,466,470,353	6,821,461,628	6,371,822,712	2,983,888,923	4,645,436,074	4,712,099,192
Non-current liabilities						
Long-term loans	9,750,699,546	6,781,774,331	3,027,190,017	-	-	-
Debentures	3,765,500,000	1,780,000,000	300,000,000	3,765,500,000	1,780,000,000	300,000,000
Retention payables	255,594,595	159,124,067	57,156,148	170,031	17,273,980	17,410,129
Finance lease liabilities	20,139,428	29,247,659	42,109,003	14,230,162	20,012,632	29,217,976
Provisions for employee benefits	43,642,126	22,641,602	19,200,213	30,038,092	15,136,780	12,851,220
Deferred tax liabilities	220,370,962	220,950,092	402,033,521	-	-	-
Other non-current liabilities	51,943,648	31,376,686	5,521,585	15,285,122	19,656,204	981,036
Total non-current liabilities	14,107,890,305	9,025,114,437	3,853,210,487	3,825,223,407	1,852,079,596	360,460,361
Total liabilities	20,574,360,658	15,846,576,065	10,225,033,199	6,809,112,330	6,497,515,670	5,072,559,553

Unit : Baht

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
Liabilities and equity						
Equity						
Share capital						
Authorised share capital	1,982,967,060	1,699,686,359	1,374,905,589	1,982,967,060	1,699,686,359	1,374,905,589
Issued and paid-up share capital	1,854,655,373	1,589,693,963	1,283,245,216	1,854,655,373	1,589,693,963	1,283,245,216
Additional paid in capital:						
Premium on ordinary shares	5,179,473,454	5,179,217,075	4,272,855,645	5,179,473,454	5,179,217,075	4,272,855,645
Retained earnings						
Appropriated						
Legal reserve	198,300,000	159,000,000	129,000,000	198,300,000	159,000,000	129,000,000
Unappropriated	2,241,132,095	2,176,589,681	2,265,007,656	1,457,643,217	1,672,165,282	1,963,319,738
Surplus on business restructuring under common control	93,622,450	93,622,450	93,622,449	-	-	-
Other components of equity	(362,631,882)	(90,160,466)	19,649,514	20,906	-	-
Equity attributable to owners of the Company	9,204,551,490	9,107,962,703	8,063,380,480	8,690,092,950	8,600,076,320	7,648,420,599
Non-controlling interests	598,104,041	641,292,578	526,844,196	-	-	-
Total equity	9,802,655,531	9,749,255,281	8,590,224,675	8,690,092,950	8,600,076,320	7,648,420,599
Total liabilities and equity	30,377,016,189	25,595,831,346	18,815,257,874	15,499,205,280	15,097,591,990	12,720,980,152

Gunkul Engineering Public Company Limited and Its Subsidiaries

Statements of Compensation Income As of 31 December 2015, 31 December 2016 and 31 December 2017

Unit : Baht

Items	Consolidated Financial Statements			Saparate Financial Statements		
	2017	2016	2015	2017	2016	2015
Revenue						
Revenue from sale	1,201,043,997	1,351,394,673	3,761,275,350	1,079,644,994	1,203,428,170	2,962,369,269
Revenue from sale of electricity	1,114,880,961	778,977,757	50,205,932	-	-	-
Revenue from rendering of services	68,088,980	80,074,234	70,118,395	44,485,943	87,424,815	66,495,338
Revenue from construction services	1,962,577,157	909,497,080	566,764,219	25,549,214	484,387,200	358,977,974
Revenue from adlder	420,683,775	88,950,089	11,935,047	-	-	-
Dividend income	-	-	-	641,879,081	232,628,903	390,188,894
Net foreign exchange gain	6,158,107	-	13,998,340	-	-	19,715,939
Interest income	27,307,142	84,225,961	-	42,851,382	105,953,249	-
Other income	54,543,694	73,714,107	116,394,469	43,039,588	67,110,815	107,773,953
Total revenue	4,855,283,813	3,366,833,901	4,590,691,752	1,877,450,202	2,180,933,152	3,905,521,367
Expenses						
Cost of sale	829,720,582	930,260,549	2,930,096,559	826,499,809	892,774,492	2,385,512,894
Cost of sale of electricity	492,986,887	277,932,210	10,568,021	-	-	-
Cost of rendering of services	64,568,671	51,547,864	36,388,863	33,681,167	41,241,578	33,850,099
Cost of construction services	1,674,095,697	834,476,370	448,182,828	25,744,897	413,122,248	326,915,706
Selling expenses	50,935,202	40,801,778	51,720,024	46,644,733	31,138,007	41,653,415
Administrative expenses	662,168,354	492,743,564	469,311,844	385,955,086	300,849,874	279,958,504
Net foreign exchange loss	-	24,336,792	-	13,689,898	7,438,025	-
Total expenses	3,774,475,393	2,652,099,127	3,946,268,139	1,332,215,590	1,686,564,224	3,067,890,618

Unit : Baht

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
Share of profit of associates and joint ventures	269,262,917	271,815,171	280,003,752	-	-	-
Profit before finance costs and income tax expense (income)	1,350,071,337	986,549,945	924,427,365	545,234,612	494,368,928	837,630,749
Finance costs	568,734,633	329,800,388	115,890,065	191,465,116	132,762,852	107,134,207
Profit before income tax expense (income)	781,336,704	656,749,557	808,537,300	353,769,496	361,606,076	730,496,542
Income tax expense (income)	69,779,944	41,379,419	134,695,666.8	(241,807)	26,625,205	68,994,085
Profit for the year	711,556,760	615,370,138	673,567,733	354,011,303	334,980,871	661,502,457
Other comprehensive income						
<i>Component of other comprehensive income that will be reclassified to profit or loss</i>						
Exchange differences on translating financial statement	(272,491,787)	(109,809,980)	19,679,800	-	-	-
Net change in fair value of available-for-sale investments	20,371	-	-	20,906	-	-
Total component of other comprehensive income that will be reclassified to profit or loss	(272,471,416)	(109,809,980)	19,679,800	20,906	-	-
<i>Component of other comprehensive income that will not be reclassified to profit or loss</i>						
Defined benefit plan actuarial losses	(17,915,837)	-	(2,806,949)	(12,418,314)	-	(1,944,656)
Income tax relating to comprehensive income that will not be reclassified to profit or loss	3,582,143	-	-	2,483,663	-	-

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
Total component of other comprehensive income that will not be reclassified to profit or loss	(14,333,694)	-	-	(9,934,651)	-	(1,944,656)
Other comprehensive income (loss) for the year, net of income tax	(286,805,110)	(109,809,980)	16,872,851	(9,913,745)	-	(1,944,656)
Total comprehensive income for the year	424,751,650	505,560,158	690,440,584	344,097,558	334,980,871	659,557,801
Profit attributable to:						
Owners of parent	635,363,378	537,717,353	685,136,880	354,011,303	334,980,871	661,502,457
Non-controlling interests	76,193,382	77,652,785	(11,569,147)	-	-	-
Profit for the year	711,556,760	615,370,138	673,567,733	354,011,303	334,980,871	661,502,457
Total comprehensive income attributable to:						
Owners of parent	348,558,268	427,907,373	702,009,731	344,097,558	334,980,871	659,557,801
Non-controlling interests	76,193,382	77,652,785	(11,569,147)	-	-	-
Total comprehensive income for the year	424,751,650	505,560,158	690,440,584	344,097,558	334,980,871	659,557,801
Basic earnings per share (Baht)	0.09	0.07	0.59	0.05	0.05	0.57

As at 31st December 2017, the Company has a registered capital 1,982,967,060.25 Baht and paid-up capital 1,854,655,373.25 Baht with total 7,418,621,493 common shares, at a par value of 0.25 Baht.

Gunkul Engineering Public Company Limited and Its Subsidiaries

Statements of Cash Flow As of 31 December 2015, 31 December 2016 and 31 December 2017

Unit : Baht

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
Cash flows from operating activities						
Profit for the year	711,556,760	615,370,138	820,106,446	354,011,303	334,980,871	730,496,542
<i>Adjustments to reconcile profit to cash receipts (payments)</i>						
Income tax expense (income)	69,779,944	41,379,419	-	(241,807)	26,625,205	(425,045)
Finance costs	568,734,633	329,800,388	118,735,163	191,465,116	132,762,852	107,134,207
Depreciation and amortisation	470,422,192	264,535,188	36,309,609	13,631,544	12,264,034	9,604,842
Provisions for employee benefits	5,309,386	3,435,811	2,949,738	4,304,947	2,285,560	1,947,351
Unrealised (gain) loss on foreign exchange	(26,864,540)	34,063,951	(27,052,878)	18,133,716	6,901	(9,927,550)
Share of profit of associates and joint ventures	(269,262,917)	(271,815,171)	(291,572,899)	-	-	-
(Gain) loss on disposal of investment in subsidiary, associates and joint ventures	-	(131,727)	-	614,038	-	-
Benefit received from advance payment of machinery for investment	(41,158,080)	(47,980,456)	(64,603,079)	(41,158,080)	(47,980,456)	(64,603,079)
Dividend income	-	-	-	(641,879,081)	(232,628,903)	(390,188,894)
(Reversal of) bad and doubtful debts expenses	-	(248,488)	(306,044)	-	-	(442,780)
(Reversal of) allowance for decline in value of inventories	2,801,346	(2,580,478)	(19,284,691)	(337,460)	(5,094,843)	(16,363,941)
(Gain) loss on disposal of property, plant and equipment	3,744,938	2,945,354	-	(1,125)	(32,939)	-
Interest income	(27,307,142)	(84,225,961)	(27,420,722)	(42,851,382)	(105,953,249)	(26,734,897)
	1,467,756,520	884,547,968	547,860,644	(144,308,271)	117,235,033	340,496,756

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
<i>Changes in operating assets and liabilities</i>						
Short-term deposits from financial institution pledged as collateral	(372,705,339)	(341,238,002)	-	45,572,105	149,830,823	
Trade accounts receivable	(452,272,833)	174,582,675	(204,424,510)	249,881,056	110,775,326	(21,155,175)
Unbilled revenue	(422,849,416)	(8,662,860)	(286,723,677)	145,590	167,689,169	(153,339,426)
Other receivables	(104,331,073)	5,440,351	(36,325,610)	(7,915,100)	51,483,550	(50,439,527)
Revenue Department receivable	248,038,373	23,043,671	(176,659,479)	-	1,898,355	(1,898,355)
Inventories	(4,235,370)	(34,641,485)	(38,321,499)	32,250,516	(1,081,771)	(5,912,560)
Advance for land lease	(16,978,091)	(26,496,218)	-	-	-	-
Other non-current assets	(3,257,388)	(87,280,317)	(6,639,975)	57,852,724	(47,245,384)	(40,472,876)
Trade accounts payable	186,055,688	(11,908,306)	314,202,983	(50,907,204)	(140,280,953)	176,729,430
Unearned revenues	(24,337,018)	120,892,549	85,995,998	12,969,844	(97,811,455)	(13,978,254)
Revenue Department payable	(2,153,236)	7,069,040	(2,417,542)	(5,187,633)	6,359,001	(6,019,888)
Retention payables	143,764,709	379,791,390	19,479,653	(34,593,983)	20,020,633	(17,689,326)
Other payables	322,107,772	(11,757,435)	(173,957,500)	(10,560,966)	(7,160,296)	-
Provisions for employee benefits	(2,224,699)	-	(1,663,402)	(1,821,949)	-	(1,663,402)
Other non-current liabilities	20,566,962	25,855,101		(4,371,082)	18,675,168	-
Cash generated from operating activities	982,945,561	1,099,238,122	40,406,084	139,005,647	350,387,199	204,647,397
Taxes received (paid)	(53,141,418)	(136,195,649)	-	(14,442,422)	(66,115,306)	(66,115,306)
Net cash from operating activities	929,804,143	963,042,473	40,406,084	124,563,225	284,271,893	138,532,091

Unit : Baht

Items	Consolidated Financial Statements			Saparate Financial Statements		
	2017	2016	2015	2017	2016	2015
Cash flows from investing activities						
Proceeds from disposal (payment) of investment in subsidiary	-	(455,549)	-	-	1,874,975	-
Proceeds from disposal of investment in associates and joint ventures	717,704	-	-	717,704	-	-
Acquisition of non-controlling interest	(4,059,900)	-	-	(4,059,900)	-	-
Payment for increment of capital in subsidiaries	-	-	(739,349,460)	(1,926,122,245)	(2,920,954,190)	(3,581,773,048)
Proceeds from sale of current investments	604,999,854	-	-	1,560,550,603	-	-
Payment for purchase of current investments	(949,669,036)	(597,131,351)	(367,225,824)	(1,160,881,956)	(582,442,823)	(367,225,824)
Payment for advance for shares subscription	-	(180,000,000)	(198,650,000)	-	(180,000,000)	(198,650,000)
Payment for payable for shares subscription	-	(388,800,000)	-	-	(388,800,000)	-
Benefit received from advance payment of machinery for investment	45,502,708	60,484,888	39,175,204	45,502,708	60,484,888	39,175,204
Payment for deposit for purchase of assets	22,673,992	(398,183,623)	(132,053,047)	-	-	(149,687,223)
Acquisition of property, plant and equipment	(4,063,457,960)	(6,698,647,204)	(5,758,488,537)	(8,330,875)	(4,720,153)	(5,581,070)
Acquisition of intangible assets	(615,199,672)	(600,510,612)	(160,937,442)	(449,850)	(397,880)	-
Proceeds from sale of property, plant and equipment	-	46,350	772,933	6,000	40,187	330,677
Proceeds of short-term loans to related parties	-	-	-	1,689,806,414	814,055,286	(450,000,000)
Payment for short-term loans to related parties	-	-	-	(1,689,286,414)	(1,567,343,669)	-
Dividend received	177,255,128	187,504,251	206,103,545	617,475,894	311,383,043	276,103,009
Interest received	46,571,264	86,603,094	-	50,399,905	91,197,051	-
Net cash used in investing activities	(4,734,665,918)	(8,529,089,756)	(7,110,652,629)	(824,672,012)	(4,365,623,285)	(4,437,308,275)

Items	Consolidated Financial Statements			Saparate Financial Statements		
	2017	2016	2015	2017	2016	2015
<i>Cash flows from financing activities</i>						
Proceeds from issue of ordinary shares	-	943,738,111	4,319,202,590	-	906,361,430	4,031,056,390
Proceeds from exercise of share options	270,401	-	-	270,401	-	-
Proceeds of short-term loans	2,729,587,613	103,857,584	-	5,904,946,049	265,162,051	-
Repayment of short-term loans	(4,477,969,083)	-	1,778,906,709	(7,869,173,322)	-	1,624,967,308
Proceeds of short-term loans to related parties	-	-	-	649,060,352	-	-
Repayment of short-term loans to related parties	-	-	(38,419,122)	(300,000,000)	-	(230,500,000)
Proceeds of long-term loans	3,658,803,291	4,325,509,574	3,071,673,492	-	-	-
Repayment of long-term loans	(550,753,000)	(6,852,000)	(162,210,000)	-	-	-
Proceeds from issuance of debentures	2,265,500,000	1,780,000,000	300,000,000	2,265,500,000	1,780,000,000	300,000,000
Repayment of debentures	(300,000,000)	-	-	(300,000,000)	-	-
Payment by a lessee for reduction of the outstanding liability relating to a finance lease	(13,579,966)	(18,175,305)	(112,180,416)	(9,572,021)	(12,967,817)	(12,388,520)
Dividend paid to owners of the Company	(254,320,025)	(289,669,715)	(24,633,156)	(254,320,025)	(289,669,715)	(24,633,156)
Dividends paid to non-controlling interests	(117,270,472)	-	-	-	-	-
Interest paid	(543,706,103)	(291,157,423)	1,567,964	(178,510,463)	(117,581,772)	-
Net cash cash from (used in) financing activities	2,396,562,656	6,547,250,826	9,133,908,061	(91,799,029)	2,531,304,177	5,688,502,021
Net decrease in cash and cash equivalents	(1,408,299,119)	(1,018,796,457)	2,063,661,516	(791,907,816)	(1,550,047,215)	1,389,725,837
Effect of exchange rate changes on balances held in foreign currencies	(11,706,519)	(9,632,156)	-	(11,706,519)	-	-
Cash and cash equivalents as at 1 January	2,468,235,940	3,496,664,553	1,507,128,465	1,043,943,100	2,593,990,315	1,204,264,477
Cash and cash equivalents at 31 December	1,048,230,302	2,468,235,940	3,570,789,981	240,328,765	1,043,943,100	2,593,990,314

3) Table of Key Financial Ratios

Unit : Baht

Items	Consolidated Financial Statements			Separate Financial Statements		
	2017	2016	2015	2017	2016	2015
Liquidity Ratio						
Liquidity Ratio (time)	0.83	0.97	0.97	0.65	0.77	0.99
Quick Liquidity Ratio (time)	0.77	0.91	0.91	0.59	0.72	0.95
Cash Flow Liquidity Ratio (time)	0.16	0.52	0.62	0.08	0.56	0.63
Trade Account Receivable						
Turnover (time)	3.17	2.51	4.3	3.19	1.58	5.69
Average Collection Period (days)	115.19	145.66	84.9	114.37	230.33	64.13
Inventory Turnover (days)	7.58	5.21	9.48	4.55	3.36	12.45
Average Selling Period (days)	48.14	70.11	38.51	80.3	108.7	29.32
Payable Turnover (time)	4.94	2.93	5.01	3.1	2.04	4.41
Credit Term (days)	73.81	124.69	72.89	117.62	179.29	82.69
Cash Cycle (days)	89.51	91.08	50.53	77.06	159.74	10.77
Profitability Ratio						
Gross Profit Margin (%)	35.78	34.74	23.21	22.94	21.94	22.07
Operating Profit Margin (%)	28.32	34.74	23.21	47.42	21.94	18.93
Net Profit Margin (%)	14.93	19.18	15.1	30.79	16.58	18.93
Return on Equity (%)	7.26	6.25	7.84	4.07	1.92	8.64

Unit : Baht

Items	Consolidated Financial Statements			Saparate Financial Statements		
	2017	2016	2015	2017	2016	2015
Efficiency Ratio						
Return on Assets (%)	2.34	2.89	3.58	2.28	1.29	5.2
Return on Fixed Assets (%)	2.85	3.99	5.33	2.61	1.29	8.22
Asset Turnover (time)	0.16	0.15	0.24	0.07	0.08	0.27
Financial Ratio						
Debt to Equity Ratio (time)	2.1	1.31	1.19	0.78	0.49	0.66
Interest Coverage Ratio (time)	1.25	3.41	5.98	1.85	1.93	5.82
Dividend Payout (%)	50.00	84.02	48.17	90.00	343.32	46.62
Other Ratios						
Earnings Per Share (Baht) ¹⁾	0.09	0.1	0.58	0.04	0.02	0.43
Basic Earnings Per Share (Baht) ²⁾	0.09	0.08	0.13	0.05	0.05	0.12
Book Value Per Share (Baht) ²⁾	1.32	1.33	6.37	1.17	1.33	2.43

Remarks
¹⁾ Earnings per Share: to calculate with the number of all average weighted common shares which have been paid up.

²⁾ Basic Earnings per Share and Book Value per Share: to calculate with the total number of all paid up common stocks at the end of the period by using the par value of the shares at 0.25 Baht per share to be used for comparison.

26.

Management Discussion and Analysis

Operating Performance

Revenue

The main revenue of the Group during the years 2016 – 2017 comes from three main types of revenue: the revenue from manufacturing, supply and distribution of electrical equipment business, renewable power plant business and construction services business which began in 2016 and 2017, the Group generated 4,767.27 million baht from sales revenue according to consolidated financial statements 48.56% increase compared to 2016. The significant increase in revenue is from sales of electricity that increased by 667.64 million baht, or 76.92% and from construction services of renewable power plants for unrelated companies or subsidiaries that increased by 1,053.08 million baht or 115.79%.

The Company had revenue from supply and distribution of electrical equipment for the year ended December 31, 2017 amounting to 1,201.04 million baht, decreased from the same period of last year with the total amount 1,351.39 million baht or decreased by 150.35 million baht or 11.13% due to the government has changed its procurement method from the E-Bidding format to the E-Auction since August 23, 2016, the government and state enterprises have to develop regulations and procedures to support such procedures. As a result, the number of delinquent proclamations has decreased. This effect has slowed down in the first quarter of 2018.

The Company has revenue from electricity production and distribution for the year ended December 31, 2017, total amount 1,535.56 million baht, increased from the same period of last year with the total amount 867.96 million baht or increased by 667.64 million baht or 76.92%. This is a 60 MW increase in commercial electricity sales, up from 10 MW in the previous year, as well as sales of commercial electricity from solar energy.

The Company has revenue from construction services for the year ended December 31, 2017, total amount 1,962.58 million baht, increased from the same period of last year with the total amount 909.50 million baht or increased by 1,053.08 million baht or 115.79%.

As a result of the overall revenue, the Company has generated revenue from commercial electricity of renewable energy, which generates electricity for all projects with also revenue from the construction business grew as a result of revenue recognition under the Company's operating plan. The delivery of the service is in accordance with the construction contract.

Revenue structure of group by product line

Revenue Type	2015		2016		2017	
	THB mln	%	THB mln	%	THB mln	%
1. Revenue from the manufacturing, supply and distribution of equipment business for electrical systems and renewable energy systems						
1.1 Sourcing for Distribution	3,346.59	75.03	791.97	24.68	521.74	10.94
1.2 Production for Distribution	425.67	9.54	559.42	17.43	679.30	14.25
2. Revenue from electricity generation and distribuion business from renewable energy						
- Produce and sell electricity from solar energy	51.16	1.15	867.93	27.05	1,535.56	32.21
3. Revenue from construction of renewable energy power plants	566.76	12.71	909.5	28.34	1,962.58	41.17
4. Service Revenue	70.12	1.57	80.07	2.50	68.09	1.43
Total Revenue	4,460.30	100.00	3,208.89	100.00	4,767.27	100.00

The Group sells goods both domestically and internationally. The proportion of domestic sales was approximately 80% of total sales revenue of the Group in the years 2015 - 2017. Main customers of the Group are the government agencies both domestic and foreign and electricity generating business customers from renewable energy.

Revenue structure by customer Segment

Revenue Type	2015		2016		2017	
	THB mln	%	THB mln	%	THB mln	%
Public Sector Customer						
- Revenue from the sale of equipment for electrical and renewable energy systems	259.09	5.81	504.89	15.73	304.19	6.38
- Revenue from electricity distribution	51.16	1.15	867.93	27.05	1,533.22	32.16
Private Sector Customer						
- Revenue from the sale of equipment for electrical and renewable energy systems	3,554.09	79.68	894.33	27.87	930.13	19.51
- Revenue from construciton of power plants	566.76	12.71	909.5	28.34	1,962.58	41.17
Foreign customers	29.20	0.65	32.24	1.01	37.15	0.78
Total Revenue	4,460.30	100	3,208.89	100.00	4,767.27	100.00



Cost of Sales and Gross margin

The Group's gross profit margin was 35.78% and 34.74% in 2017 and 2016, respectively. This trend of gross margin was in line with the increase in proportion of revenue from sale of electricity of wind and solar energy including an increase in revenue from the construction of the successful completion of the target of the company.

Sales and Administrative Expenses

Sales and administrative expenses of the Company accounted for approximately 10-13% of total revenue of the Group, which was higher in proportion to the increase in revenue and the number of executive under the use of a flexible control budget system.

The Group's selling and administrative expenses were 713.10 million baht and 557.88 million baht, accounted for 14.96% and 17.39% of sales and service income for the year 2017 and 2016, respectively, which was the ratio that varies with sales and expansion expenses including accounting standards.

Net Profit

The Company's net profit for the year 2017 was 711.56 million baht, the year 2016 was 615.37 million baht, decrease 96.19 million baht, considering the normal operating performance of the Company and subsidiaries based on the consolidated financial statements for the year 2017 compared with the same period last year. Due to the company discharged 60 MW of commercial electricity into the system and the cost of generating electricity were not very high compared to the received revenue. Therefore, the profit margin is higher than the revenue.

Financial Status

Total Assets

The Company's total assets at the end of 2017 and 2016 are 30,377.02 million baht, 25,595.83 million baht and 7,259.20 million baht, respectively. The main items of current assets are Accounts Receivables and merchandise Inventory, which vary according to sales. Also the construction of renewable power plants for external companies and the ability of the Group to invoice customer. Investments in subsidiaries increase; as well as, the cash flow that the Company must reserve for investment, operation and dividend payments. The main items of non-current assets are buildings and equipment invested by the Group to generate electricity.

In providing financing for working capital and investing in fixed assets, the Group has financing both from the capital increase and borrowing from financial institutions and disposal of investment. As a result, the Group debt-to-equity ratios are 2.10 times and 2.63 times, according to the consolidated financial statements as at the end of 2017 and 2016, respectively.

Trade Account Receivables

The Company and its subsidiaries have a policy to provide credit to customers based on their financial position, payment history, order frequency and order value. The average credit term was approximately 30-60 days for both private and government customers and credit term 60-120 days for foreign customers.

As at the end of 2017 and 2016 according to consolidated financial statements, the Group had total Trade Account Receivables 1,942.00 million baht and 1,066.88 million baht (excluding other receivables and allowance), respectively. With an average collection period at the end of 2017 and 2016, was 115 days and 146 days, respectively. In 2017, the Company's trade account receivables increased. Due to building construction loan, energy group and power plant customers that not yet due.

Details of the Group's Trade Account Receivables are as follows:

Related Party receivables

	2015		2016		2017	
	THB mln	%	THB mln	%	THB mln	%
Not Yet Due	23.27	52.47	12.81	23.54	14.77	41,4422
Overdue						
- Not over 3 months			41.61	76.46	4.34	12.177
- During 3-6 months			0		16.53	46,3805
- During 6-12 months			0			
- Over than 12 months	21.08	47.53	0			
Total Trade Receivable	44.35	100	54.42	100	35.64	100.00
Deduction of Allowance for Doubtful Accounts	-	-	-	-	-	-
Net Trade Receivables	44.35	100	54.42	100	35.64	100.00

Other Trade Account Receivables

	2015		2016		2017	
	THB mln	%	THB mln	%	THB mln	%
Not Yet Due	382.82	44.45	462.48	68.45	1,425.62	74.75
Overdue						
- Not over 3 months	470.94	54.68	196.12	29.03	456.74	23.95
- During 3-6 months	6.35	0.74	10.25	1.52	8.96	0.47
- During 6-12 months	0.00	0.00	0.53	0.08	3.52	0.18
- Over than 12 months	1.14	0.14	7.20	1.07	12.42	0.65
Total Trade Receivable	861.25	100.01	676.58	100.13	1,907.26	100.00
Deduction of Allowance for Doubtful Accounts	(0.90)	(0.01)	(0.89)	0.13	(0.89)	(0.00)
Net Trade Receivables	860.35	100.00	677.47	100.00	1,906.37	100.00

Inventory

When considering the consolidated financial statements as at the end of 2017, 2016 and 2015, the Group's inventories amounted to 403.77 million baht, 402.34 million baht and 361.41 million baht.

	2015		2016		2017	
	THB mln	%	THB mln	%	THB mln	%
Raw Material	74.02	19.34	99.47	23.38	90.92	21.38
Inter-Production	35.75	9.34	40.61	9.70	44.89	10.56
Instant Product	240.74	62.91	260.59	61.89	233.93	55.01
Goods in Transit	32.18	8.41	20.36	5.04	55.53	236.15
Total	382.69	100.00	421.03	100.00	425.27	100.00
Deduction of Allowance for Devaluation	(12.52)	(3.27)	(18.69)	0.00	(21.50)	(5.06)
Net Inventories	361.41	96.73	402.34	100.00	403.77	94.94

The Group has a policy to set allowance for diminution in value of inventories for obsolete, defective and outdated inventories by considering each item. The products of the Company are used for basic electricity systems in countries where technology is often unlikely to change. As a result, the Company's products can be sold continuously without obsolete. However, the Group reversed allowance for diminution in value of inventories because the Company had already sold such products at 21.50 million baht, 18.69 million baht and 12.52 million baht at year-end 2017, 2016 and 2015, respectively.

The Company has average selling period from 48 days, 70 days and 39 days in 2017, 2016 and 2015, most of them are products related to sourcing for distribution and for solar construction projects.

Investments in Subsidiaries and Associates

The Company's investment structure in subsidiaries and associates is as follows:

Company Name	Paid-up Capital (Thousand Baht)			Proportion of Investment (%)			Cost Method (Thousand Baht)			Dividend (Thousand Baht)		
	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
G.K. Power Products Co., Ltd.	100,000	100,000	100,000	100	100	100	80,425	80,425	80,425	14,488	25,000	45,000
G.K. Assembly Co., Ltd.	200,000	200,000	200,000	100	100	100	163,188	163,188	163,188	-	-	80,000
K.N.P. Supply Co., Ltd.	50,000	50,000	50,000	100	100	100	41,408	41,408	41,408	10,000	-	41,000
Wind Energy Development Co., Ltd.	1,575,000	1,575,000	1,575,000	99.99	99.99	70	2,226,150	2,226,150	2,226,150	-	-	-
NK Power Sola Co., Ltd.	2,600	2,600	2,600	100	100	100	40,854	40,854	40,854	20,000	-	-
Gunkul Solar Roof 1 Co., Ltd.	21,000	21,000	21,000	100	100	100	21,000	21,000	21,000	-	-	735
Gunkul Training Center Co., Ltd. (Gunkul Solar Roof 2 Co., Ltd.)	250	250	250	100	100	100	250	250	250	-	-	-
Solar Energy Society Co., Ltd.	20,400	20,400	20,400	100	100	100	20,400	20,400	20,400	2,040	-	-
Bright Green Power Co., Ltd.	102,850	89,900	33,340	100	100	100	102,850	89,900	33,340	-	-	-
Gunkul Power Development Co., Ltd.	15,000	15,000	15,000	100	100	100	23,749	23,749	15,000	172,799	-	-
Gunkul Solar Power 1 Co., Ltd.	-	25,000	2,500	100	100	100	-	25,000	2,500	-	-	-
Gunkul Solar Power 2 Co., Ltd.	-	54,250	39,000	100	100	100	-	54,250	39,000	1,200	-	2,145
Gunkul International (Mauritius) Ltd.	4,740,445	3,239,983	1,016,552	100	100	100	4,740,445	3,239,983	1,016,552	-	-	-
Gunkul LED Lighting Co., Ltd.	40,600	40,600	40,600	100	89.99	89.99	40,600	36,540	36,540	-	-	-
Gunkul Solar Community Co., Ltd.	2,750	2,750	2,750	100	100	100	2,750	2,750	2,750	-	-	-

Company Name	Paid-up Capital (Thousand Baht)			Proportion of Investment (%)			Cost Method (Thousand Baht)			Dividend (Thousand Baht)		
	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
Siam Gunkul Solar Energy Co., Ltd.	40,900	40,900	40,900	100	100	100	40,899	40,899	40,899	6,033	-	-
Gunkul Bio Energy Co., Ltd.	125	125	-	100	100	-	125	125	-	-	-	-
Gunkul and UCI Power Co., Ltd.	-	-	2,500	-	-	-	-	-	1,875	-	-	-
Greenovation Power Co., Ltd.	1,485,000	1,138,100	436,025	100	100	100	1,916,500	1,569,600	867,525	-	-	-
Korat Wind Energy Co., Ltd.	778,360	778,360	336,750	100	100	100	1,240,920	1,210,110	768,500	-	-	-
Gunkul Solar Power Co., Ltd.	179,250	-	-	100	-	-	179,250	-	-	-	-	-
Gunkul Solar Power 3 Co., Ltd.	-	25,000	2,500	-	100	100	-	25,000	2,500	-	-	-
Gunkul Solar Power 4 Co., Ltd.	-	25,000	2,500	-	100	100	-	25,000	2,500	-	-	-
Gunkul Solar Power 5 Co., Ltd.	-	25,000	2,500	-	100	100	-	25,000	2,500	-	-	-
Infinite Alternative Energy Co., Ltd.	1,590,000	1,590,000	1,590,000	67	67	67	1,105,996	1,105,996	1,105,996	238,094	-	-
Gio Bio Energy Co., Ltd.	34,300	34,300	34,300	74.9	74.9	74.9	25,690	25,690	25,690	-	-	-
Eco Thai Energy Co., Ltd.	76,500	76,500	-	51	51	-	42,015	42,015	-	-	-	-
BMP Solar Co., Ltd.	980	-	-	100.00	-	-	216,938	-	-	-	-	-
Total							12,272,402	10,135,282	6,557,342	464,654	25,000	168,880

Land, Buildings and Equipments

The Company's and the Group's offices and warehouses are located on the subleased land of Mr. Gunkul Dhumrongpiyawut. The Company had buildings and equipment net amount 70.57 million baht, 70.86 million baht and 78.83 million baht in 2017, 2016 and 2015, respectively. Since the Company has invested in buildings and equipment by increase in vehicle parts, tools, appliances and office equipment due to the increase of staff and executive from the expansion of the company.

For the consolidated financial statements of the Group as at the end of 2017, 2016 and 2015 were 18,124.99 million baht, 13,604.87 million baht and 7,646.25 million baht, respectively. The substantial increase in land, buildings and equipments were based on the consolidated financial statements as compared to the separate financial statements of the Company. It was due to the consolidation of land value, building and equipment of 4 subsidiaries especially GK Assembly Co., Ltd., which has land and buildings, is owned by the subsidiary itself. While the other 2 subsidiaries are located in the subleased area of Mr. Gunkul Dhumrongpiyawut, are the same as the Company. The details of the property, building and equipment of the subsidiary are as follows:

- **Wind Energy Development Co., Ltd.**

In 2012, the Company purchased a land for constructing an energy power plant at the price of Baht 378 million. The construction of 60 MW wind energy power plant was underway.

- **Greenovation Power Co., Ltd.**

In 2014, the Company began acquiring land for the construction of the wind power plant by purchasing land assets for the power plant business in amount to 204 million baht.

In 2014 – 2015, the Company started to supply land in Japan for solar power plant construction. It is a land for the power plant business.

Total Liabilities

The Company's total liabilities at the end of 2017, 2016 and 2015 are 20,574.36 million baht, 15,846.58 million baht and 10,225.03 million baht, respectively. In 2017, the Group began to have a higher total liability. Since in 2017, the Company and its subsidiaries have grown and expanded. The Company has issued debentures to raise funds for investment expansion. As a result, the Company has short-term and long-term loans project and trust receipts to support sales and the increasing construction since 2016 to 2017.



Total liabilities of the Company contain mostly current liabilities such as, short-term loans from financial institutions accounted for 11–20% of the Group's total liabilities. Accounts payable accounted for approximately 12% of total liabilities of the Group and Long-term loans accounted for 65.59% of total liabilities. These 4 lists, the Company are used as a source of funds for the procurement of raw materials and commercial credits and construction of power plants of the Group.

The Group's liquidity ratio according to the consolidated financial statements for the year 2017–2015 was 0.83 times 0.97 times and 0.97 times, respectively. For quick liquidity ratios, 0.77 times, 0.91 times and 0.91 times, the average repayment period was 74 days, 125 days and 73 days. The Company has a cash cycle of 90 days, 91 days and 51 days, respectively. The selling period was 48 days, 71 days and 39 days. The collection period was 115 days, 146 days and 85 days, respectively. There was more time to collect revenue due to the increase in construction income and there was a way to recognize revenue including payment which was different from the case of the purchase.

In 2017 and 2016, the Company's debt-to-equity ratio increased significantly from 2.10 times to 1.31 times. The Company has higher debt to equity ratio, due to issuance of debentures for investment in public utilities from renewable energy.

Shareholders' Equity

Shareholders' equity of the Company was 8,690.92 million baht, 8,600.08 million baht and 7,648.42 million baht at the end of the year 2017, 2016 and 2015, according to the separate financial statements, respectively.

For the consolidated financial statements as at the end of 2017, 2016 and 2015, The Group's shareholders' equity was 9,802.66 million baht, 9,749.25 million baht and 8,590.22 million baht, respectively. The increase in shareholders' equity in 2017, 2016 and 2015, as compared to the separate financial statements, was the result of the consolidation of assets, liabilities and operating results of subsidiaries. There was a surplus on business combination under common control, which was the difference between the acquisition cost of the subsidiary and the increasing book value of the subsidiary's net assets in 2017, due to the registration of capital increase and share premium. In order to invest in the construction of a solar power plant for outsider and from financial investments in subsidiaries, due to the acquisition of control in domestic and foreign subsidiaries, respectively.

Cash Flow

In 2017, the Company's net cash flow from operation was 929.80 million baht, due to in 2017, the Company has a higher revenue growth especially investing in subsidiaries in the renewable energy sector to invest in a subsidiary company on renewable energy. In the investment activity of 4,734.67 million and capital increase, there has cash flow from short-term loans, debentures and long-term loans from banks for investing in 170 MW of wind power projects.

In 2016, the Company's net cash flow from operating activities was approximately 963.04 million baht. Since in 2016, the Company has a considerably revenue grow from sales of equipment, unearned revenue and retention payables by power plant contractors. The Company has borrowed money to invest in the construction of the power plant and has paid loan of 341.24 million baht.

However, the Company had cash flow from investing activities of Baht 4,734.66 million baht; such as from an investment in a subsidiary and associates in the amount of 949.67 million baht, invested in short-term investments of 605 million and cash payment for purchasing property plant and equipment of 4,063.46 million baht.

For the year 2016, the Company still had to raise funds from issuing debentures of 2,265.50 million baht and long-term earnings from financial institutions amounted 3,658.80 million baht. Meanwhile, the Company has already paid the debt from the financing of 4,777.97 million baht and has paid a dividend of 371.59 million baht. Cash flow was approximately 1,048.23 million baht to use in administration in the year 2018.

27.

Independent Auditor's Report, Financial Statements and Notes

To the Shareholders of Gunkul Engineering Public Company Limited

Opinion

I have audited the consolidated and separate financial statements of Gunkul Engineering Public Company Limited and its subsidiaries (the "Group") and of Gunkul Engineering Public Company Limited (the "Company"), respectively, which comprise the consolidated and separate statements of financial position as at 31 December 2017, the consolidated and separate statements of comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

In my opinion, the accompanying consolidated and separate financial statements present fairly, in all material respects, the financial position of the Group and the Company, respectively, as at 31 December 2017 and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

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

Key Audit Matters

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

Acquisition of subsidiary

Refer to Notes 3 and 4

The key audit matter

On 30 May 2017, the Group acquired an investment in a company whose main business is generating and selling electricity which has the identifiable assets acquired and liabilities assumed resulting in the recording of goodwill of Baht 49 million in the consolidated statement of financial position as at 31 December 2017.

I considered this to be the key audit matter because the amount of this business combination is significant and the identification and fair value measurement of assets acquired and liabilities assumed requires significant judgment.

How the matter was addressed in the audit

My audit procedures in this area included, among others:

- Reading the sale and purchase agreement and analysis memorandum of business acquisition prepared by the Group to understand key terms and conditions;
- Evaluating the assessment by the Group of the identification of all the assets acquired and liabilities assumed and consideration transferred;
- Inquiring about the qualifications and independence of the independent valuer of the Group
- Involving KPMG valuation specialists to evaluate the financial parameters applied to the discount rate, identification of the intangible assets, valuation methodology and mathematical accuracy.
- Evaluating the assumptions underpinning the valuations;
- Evaluating the adequacy of the disclosures in accordance with the relevant Thai Financial Reporting Standards.

Impairment testing for cash-generating units containing goodwill

Refer to Note 3 and 15

The key audit matter

The Group holds significant amounts of goodwill from the business combination in the past. There is a risk that the carrying values of the Group's goodwill balances might exceed its recoverable values.

The annual impairment testing of goodwill requires the significant judgement of management in determining the assumptions to estimate the recoverable amount. These models use several key assumptions, including estimates of

How the matter was addressed in the audit

My audit procedures in this areas included, among others;

- Understanding the estimate of the recoverable amount;
- Involving KPMG valuation specialists to assist in evaluating the appropriateness of the discount rate applied, which included comparing the weighted average cost of capital with sector averages for the relevant markets in which the Group operate;
- Evaluating the appropriateness of the assumptions applied to key inputs such as sales volumes and

future sales volumes and prices, operating costs, terminal value growth rates and the weighted-average cost of capital (discount rate). I considered the measurement of the recoverable amount as the key audit matter.

How the matter was addressed in the audit

prices, operating costs, and long-term growth rates, which included comparing these inputs with externally derived data as well as my knowledge of the Group and the industry;

- Performing a sensitivity analysis, which included assessing the possible effect in growth rates and forecast cash flows and the discount rate.
- Evaluating the adequacy of the disclosures in accordance with the relevant Thai Financial Reporting Standards.

Revenue and cost of construction services

Refer to Note 3, 5 and 9

The key audit matter

The Group accounts for revenue and cost of construction services by referencing the stage of completion of the constructions. This is assessed by the responsible project's engineers and considered with the actual costs and the estimated costs to complete the constructions.

The management and the project's engineers are required to exercise significant judgement to estimate the cost of construction services to complete the contracts that will affect the stage of completion. I considered the stage of completion and estimation for cost of construction services as the key audit matter.

How the matter was addressed in the audit

My audit procedures in this areas included, among others;

- Understanding the processes of the estimation and revision of the estimated costs of construction services;
- Testing the estimated costs of construction services which were approved by the management, actual costs, revenue from construction services and unbilled revenue with related contracts and documents;
- Comparing the stage of completion determined by engineers with the actual costs and the estimated costs including tested customers' acceptance documents;
- Performing site visits together with the engineers to assess the appropriateness of the actual constructions progress and the stage of completion;
- Performing analyses of the actual costs incurred and the estimated costs comparison, gross profits, progress of constructions and challenging the management for any deviations;

How the matter was addressed in the audit

- Testing the stage of completions and unbilled revenue calculations;
- Testing the actual costs incurred after the period ended with related documents;
- Evaluating the adequacy of the disclosures in accordance with the relevant Thai Financial Reporting Standards.

Other Matter

The consolidated and separate financial statements of the Group and the Company for the year ended 31 December 2016 were audited by another auditor who expressed an unmodified opinion on those statement on 27 February 2017.

Other Information

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

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

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

Responsibilities of Management and Those Charged with Governance for the Consolidated and Separate Financial Statements

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

In preparing the consolidated and separate financial statements, management is responsible for assessing the Group's and the Company'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 and the Company or to cease operations, or has no realistic alternative but to do so.

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

Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate 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 TSAs 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 consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate 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 and the Company'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 and the Company'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 consolidated and separate 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 and the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate 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 consolidated and separate 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.



(Waiyawat Kosamarnchaiyakij)
Certified Public Accountant
Registration No. 6333

Statement of financial position

Gunkul Engineering Public Company Limited and its Subsidiaries

As at 31 December 2017

(Unit : Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Assets					
Current assets					
Cash and cash equivalents	6	1,048,230,302	2,468,235,940	240,328,765	1,043,943,100
Current investments	7	605,020,371	964,357,175	550,020,906	949,668,647
Short-term deposits from financial institution pledged as collateral	18	964,049,692	585,106,438	-	-
Trade accounts receivable	5, 8	1,182,394,884	730,122,051	223,096,299	472,975,037
Unbilled revenue	9	759,609,883	336,760,467	12,148,598	12,294,188
Other receivables	5	322,363,656	237,296,705	171,580,815	138,475,797
Revenue Department receivable		100,734,948	348,773,321	-	-
Short-term loans to related parties	5	-	-	556,807,750	557,327,750
Inventories	10	403,770,833	402,336,809	194,904,660	226,817,716
Total current assets		5,386,174,569	6,072,988,906	1,948,887,793	3,401,502,235
Non-current assets					
Long-term deposits from financial institution pledged as collateral	18	40,769,169	47,007,084	-	45,572,105
Investments in associates	11	381,407,019	356,891,224	397,594,800	397,694,800
Investments in joint ventures	11	1,005,233,337	939,043,106	520,050,150	521,281,892
Investments in subsidiaries	12	-	-	12,272,402,201	10,135,282,120
Investment properties		-	-	3,143,658	3,143,658
Property, plant and equipment	14	18,124,996,874	13,604,874,869	70,572,269	70,861,343
Intangible assets and goodwill	15	4,431,268,781	3,358,594,134	4,091,404	4,663,578
Advance for shares subscription	4	-	180,000,000	-	180,000,000
Deposit for purchase of assets		362,141,578	384,815,570	-	-
Advance for land lease		215,440,843	209,441,988	-	-
Deferred tax assets	16	21,505,222	37,353,056	9,392,391	6,666,921

Notes to financial statements are an integral part of these financial statements

Statement of financial position (continued)

Gunkul Engineering Public Company Limited and its Subsidiaries

As at 31 December 2017

(Unit : Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Other non-current assets	17	408,078,797	404,821,409	273,070,614	330,923,338
Total non-current assets		24,990,841,620	19,522,842,440	13,550,317,487	11,696,089,755
Total assets		30,377,016,189	25,595,831,346	15,499,205,280	15,097,591,990
Current liabilities					
Short-term loans from financial institutions	18	2,231,925,456	3,980,796,802	1,957,821,723	3,922,101,802
Short-term loans from related parties	5	-	-	352,121,984	-
Trade accounts payable	5	712,123,735	526,068,047	259,998,139	310,963,054
Unearned revenues		196,211,114	220,548,132	14,813,972	1,844,128
Payable for purchases of assets		1,702,854,567	745,730,428	-	16,474
Revenue Department payable		10,627,769	12,781,005	1,171,368	6,359,001
Retention payables	5	322,150,409	292,188,859	10,113,851	27,603,885
Other payables	5	332,054,089	196,999,134	98,421,099	65,579,772
Current portion of long-term loans	18	632,315,625	528,346,274	-	-
Current portion of debentures	18	280,000,000	300,000,000	280,000,000	300,000,000
Current portion of finance lease liabilities	18	12,400,544	12,861,359	9,426,787	9,205,418
Income tax payable		33,807,045	5,141,588	-	1,762,540
Total current liabilities		6,466,470,353	6,821,461,628	2,983,888,923	4,645,436,074
Non-current liabilities					
Long-term loans	18	9,750,699,546	6,781,774,331	-	-
Debentures	18	3,765,500,000	1,780,000,000	3,765,500,000	1,780,000,000
Retention payables	5	255,594,595	159,124,067	170,031	17,273,980
Finance lease liabilities	18	20,139,428	29,247,659	14,230,162	20,012,632
Provisions for employee benefits	20	43,642,126	22,641,602	30,038,092	15,136,780
Deferred tax liabilities	16	220,370,962	220,950,092	-	-
Other non-current liabilities		51,943,648	31,376,686	15,285,122	19,656,204
Total non-current liabilities		14,107,890,305	9,025,114,437	3,825,223,407	1,852,079,596
Total liabilities		20,574,360,658	15,846,576,065	6,809,112,330	6,497,515,670

Notes to financial statements are an integral part of these financial statements

Statement of financial position (continued)

Gunkul Engineering Public Company Limited and its Subsidiaries

As at 31 December 2017

(Unit : Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Equity					
Share capital	21				
Authorised share capital		1,982,967,060	1,699,686,359	1,982,967,060	1,699,686,359
Issued and paid-up share capital		1,854,655,373	1,589,693,963	1,854,655,373	1,589,693,963
Additional paid in capital:					
Premium on ordinary shares	23	5,179,473,454	5,179,217,075	5,179,473,454	5,179,217,075
Retained earnings					
Appropriated					
Legal reserve	23, 32	198,300,000	159,000,000	198,300,000	159,000,000
Unappropriated		2,241,132,095	2,176,589,681	1,457,643,217	1,672,165,282
Surplus on business restructuring under common control		93,622,450	93,622,450	-	-
Other components of equity		(362,631,882)	(90,160,466)	20,906	-
Equity attributable to owners of the Company		9,204,551,490	9,107,962,703	8,690,092,950	8,600,076,320
Non-controlling interests	13	598,104,041	641,292,578	-	-
Total equity		9,802,655,531	9,749,255,281	8,690,092,950	8,600,076,320
Total liabilities and equity		30,377,016,189	25,595,831,346	15,499,205,280	15,097,591,990

Notes to financial statements are an integral part of these financial statements

Statement of comprehensive income

Gunkul Engineering Public Company Limited and its Subsidiaries
For the year ended 31 December 2017

(Unit : Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Revenue					
Revenue from sale	5	1,201,043,997	1,351,394,673	1,079,644,994	1,203,428,170
Revenue from sale of electriciy		1,114,880,961	778,977,757	-	-
Revenue from rendering of services	5	68,088,980	80,074,234	44,485,943	87,424,815
Revenue from construction services		1,962,577,157	909,497,080	25,549,214	484,387,200
Revenue from adder		420,683,775	88,950,089	-	-
Dividend income	5, 11, 12	-	-	641,879,081	232,628,903
Net foreign exchange gain		6,158,107	-	-	-
Interest income	5	27,307,142	84,225,961	42,851,382	105,953,249
Other income	5	54,543,694	73,714,107	43,039,588	67,110,815
Total revenue		4,855,283,813	3,366,833,901	1,877,450,202	2,180,933,152
Expenses					
Cost of sale	5, 10	829,720,582	930,260,549	826,499,809	892,774,492
Cost of sale of electricity		492,986,887	277,932,210	-	-
Cost of rendering of services	5	64,568,671	51,547,864	33,681,167	41,241,578
Cost of construction services	5	1,674,095,697	834,476,370	25,744,897	413,122,248
Selling expenses		50,935,202	40,801,778	46,644,733	31,138,007
Administrative expenses	5, 25	662,168,354	492,743,564	385,955,086	300,849,874
Net foreign exchange loss		-	24,336,792	13,689,898	7,438,025
Total expenses		3,774,475,393	2,652,099,127	1,332,215,590	1,686,564,224
Share of profit of associates and joint ventures	11	269,262,917	271,815,171	-	-
Profit before finance costs and income tax expense (income)		1,350,071,337	986,549,945	545,234,612	494,368,928
Finance costs	28	568,734,633	329,800,388	191,465,116	132,762,852
Profit before income tax expense (income)		781,336,704	656,749,557	353,769,496	361,606,076
Income tax expense (income)	29	69,779,944	41,379,419	(241,807)	26,625,205
Profit for the year		711,556,760	615,370,138	354,011,303	334,980,871

Notes to financial statements are an integral part of these financial statements

Statement of comprehensive income (continued)

Gunkul Engineering Public Company Limited and its Subsidiaries
For the year ended 31 December 2017

(Unit : Baht)

Note	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Other comprehensive income				
<i>Component of other comprehensive income that will be reclassified to profit or loss</i>				
Exchange differences on translating financial statement	(272,491,787)	(109,809,980)	-	-
Net change in fair value of available-for-sale investments	20,371	-	20,906	-
Total component of other comprehensive income that will be reclassified to profit or loss	(272,471,416)	(109,809,980)	20,906	-
<i>Component of other comprehensive income that will not be reclassified to profit or loss</i>				
Defined benefit plan actuarial losses 20	(17,915,837)	-	(12,418,314)	-
Income tax relating to comprehensive income that will not be reclassified to profit or loss 16	3,582,143	-	2,483,663	-
Total component of other comprehensive income that will not be reclassified to profit or loss	(14,333,694)	-	(9,934,651)	-
Other comprehensive income (loss) for the year, net of income tax	(286,805,110)	(109,809,980)	(9,913,745)	-
Total comprehensive income for the year	424,751,650	505,560,158	344,097,558	334,980,871
Profit attributable to:				
Owners of parent	635,363,378	537,717,353	354,011,303	334,980,871
Non-controlling interests 13	76,193,382	77,652,785	-	-
Profit for the year	711,556,760	615,370,138	354,011,303	334,980,871
Total comprehensive income attributable to:				
Owners of parent	348,558,268	427,907,373	344,097,558	334,980,871
Non-controlling interests 13	76,193,382	77,652,785	-	-
Total comprehensive income for the year	424,751,650	505,560,158	344,097,558	334,980,871
Basic earnings per share (Baht) 31	0.09	0.07	0.05	0.05

Notes to financial statements are an integral part of these financial statements

Statement of changes in equity

Gunkul Engineering Public Company Limited and its Subsidiaries

For the year ended 31 December 2017

(Unit : Baht)

Consolidated financial statements												
		Retained earnings		Other components of equity								
		Issued and paid-up share capital	Premium on ordinary shares	Legal reserve	Unappropriated	Surplus on business restructuring under common control	Exchange differences on translating financial statement	Net change in fair value of available-for-sale investments	Equity attributable to owners of parent			Total equity
									Total other components of equity	Non-controlling interests		
Note												
Year ended 31 December 2016												
	Balance at 1 January 2016	1,283,245,216	4,272,855,645	129,000,000	2,285,007,655	93,622,450	19,649,514	-	19,649,514	8,063,380,480	526,844,195	8,590,224,675
21	Issue of ordinary shares	41,500,055	906,361,430	-	-	-	-	-	-	947,861,485	-	947,861,485
12	Increment of capital in subsidiaries	-	-	-	-	-	-	-	-	-	37,376,681	37,376,681
12	Disposal of investment in subsidiary	-	-	-	-	-	-	-	-	-	(581,083)	(581,083)
32	Stock dividend	264,948,692	-	-	(264,948,692)	-	-	-	-	-	-	-
32	Dividend paid to shareholders	-	-	-	(331,186,635)	-	-	-	-	(331,186,635)	-	(331,186,635)
Comprehensive income (loss) for the year												
	Profit	-	-	-	537,717,353	-	-	-	-	537,717,353	77,652,785	615,370,138
	Other comprehensive income (loss)	-	-	-	-	(109,809,980)	(109,809,980)	-	(109,809,980)	(109,809,980)	-	(109,809,980)
	Total comprehensive income (loss) for the year	-	-	-	537,717,353	-	(109,809,980)	-	(109,809,980)	427,907,373	77,652,785	505,560,158
23, 32	Transfer to legal reserve	-	-	30,000,000	(30,000,000)	-	-	-	-	-	-	-
	Balance at 31 December 2016	1,589,693,963	5,179,217,075	159,000,000	2,176,569,681	93,622,450	(90,160,466)	-	(90,160,466)	9,107,962,703	641,292,578	9,749,255,281

Notes to financial statements are an integral part of these financial statements

Statement of changes in equity (continued)

Gunkul Engineering Public Company Limited and its Subsidiaries
For the year ended 31 December 2017

(Unit : Baht)

	Consolidated financial statements											
	Note	Retained earnings		Other components of equity								
		Issued and paid-up share capital	Premium on ordinary shares	Legal reserve	Unappropriated	Surplus on business restructuring under common control	Exchange differences on translating financial statement	Net change in fair value of available-for-sale investments	Total other components of equity	Equity attributable to owners of parent	Non-controlling interests	Total equity
Year ended 31 December 2017												
		1,589,693,963	5,179,217,075	159,000,000	2,176,589,681	93,622,450	(90,160,466)	-	(90,160,466)	9,107,962,703	641,292,578	9,749,255,281
	21	14,022	256,379	-	-	-	-	-	-	270,401	-	270,401
	12	-	-	-	-	-	-	-	-	-	(117,270,472)	(117,270,472)
	32	264,947,388	-	-	(264,947,388)	-	-	-	-	-	-	-
	32	-	-	-	(254,351,329)	-	-	-	-	(254,351,329)	-	(254,351,329)
		Acquisition of non-controlling interests										
	13	-	-	-	2,111,447	-	-	-	-	2,111,447	(2,111,447)	-
Comprehensive income (loss) for the year												
		-	-	-	635,363,378	-	-	-	-	635,363,378	76,193,382	711,556,760
		-	-	-	(14,333,694)	-	(272,491,787)	20,371	(272,471,416)	(286,805,110)	-	(286,805,110)
		-	-	-	621,029,684	-	(272,491,787)	20,371	(272,471,416)	348,558,268	76,193,382	424,751,650
	23, 32	-	-	39,300,000	(39,300,000)	-	-	-	-	-	-	-
		1,854,655,373	5,179,473,454	198,300,000	2,241,132,095	93,622,450	(362,652,253)	20,371	(362,631,882)	9,204,551,490	598,104,041	9,802,655,531
Balance at 31 December 2017												

Notes to financial statements are an integral part of these financial statements

Statement of changes in equity

Gunkul Engineering Public Company Limited and its Subsidiaries
For the year ended 31 December 2017

(Unit : Baht)

		Separate financial statements				
		Retained earnings				Other components
						of equity
						Net change in
						fair value of
Note	Issued and paid-up share capital	Premium on ordinary shares	Legal reserve	for-sale Unappropriated	Total investments	equity
(in Baht)						
Year ended 31 December 2016						
Balance at 1 January 2016	1,283,245,216	4,272,855,645	129,000,000	1,963,319,738	-	7,648,420,599
Issue of ordinary shares	21	41,500,055	906,361,430	-	-	- 947,861,485
Stock dividend	32	264,948,692	-	-	(264,948,692)	- -
Dividend paid to shareholders	32	-	-	-	(331,186,635)	- (331,186,635)
Comprehensive income for the year						
Profit		-	-	-	334,980,871	- 334,980,871
Other comprehensive income		-	-	-	-	- -
Total comprehensive income for the year		-	-	-	334,980,871	- 334,980,871
Transfer to legal reserve	23, 32	-	-	30,000,000	(30,000,000)	- -
Balance at 31 December 2016		1,589,693,963	5,179,217,075	159,000,000	1,672,165,282	- 8,600,076,320
Year ended 31 December 2017						
Balance at 1 January 2017		1,589,693,963	5,179,217,075	159,000,000	1,672,165,282	- 8,600,076,320
Shares options exercised	21	14,022	256,379	-	-	- 270,401
Stock dividend	32	264,947,388	-	-	(264,947,388)	- -
Dividend paid to shareholders	32	-	-	-	(254,351,329)	- (254,351,329)
Comprehensive income for the year						
Profit		-	-	-	354,011,303	- 354,011,303
Other comprehensive income (loss)		-	-	-	(9,934,651)	20,906 (9,913,745)
Total comprehensive income for the year		-	-	-	344,076,652	20,906 344,097,558
Transfer to legal reserve	23, 32	-	-	39,300,000	(39,300,000)	- -
Balance at 31 December 2017		1,854,655,373	5,179,473,454	198,300,000	1,457,643,217	20,906 8,690,092,950

Notes to financial statements are an integral part of these financial statements

Statement of cash flows

Gunkul Engineering Public Company Limited and its Subsidiaries
For the year ended 31 December 2017

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
<i>Cash flows from operating activities</i>				
Profit for the year	711,556,760	615,370,138	354,011,303	334,980,871
<i>Adjustments to reconcile profit to cash receipts (payments)</i>				
Income tax expense (income)	69,779,944	41,379,419	(241,807)	26,625,205
Finance costs	568,734,633	329,800,388	191,465,116	132,762,852
Depreciation and amortisation	470,422,192	264,535,188	13,631,544	12,264,034
Provisions for employee benefits	5,309,386	3,435,811	4,304,947	2,285,560
Unrealised (gain) loss on foreign exchange	(26,864,540)	34,063,951	18,133,716	6,901
Share of profit of associates and joint ventures	(269,262,917)	(271,815,171)	-	-
(Gain) loss on disposal of investment in subsidiary, associates and joint ventures	-	(131,727)	614,038	-
Benefit received from advance payment of machinery for investment	(41,158,080)	(47,980,456)	(41,158,080)	(47,980,456)
Dividend income	-	-	(641,879,081)	(232,628,903)
(Reversal of) bad and doubtful debts expenses	-	(248,488)	-	-
(Reversal of) allowance for decline in value of inventories	2,801,346	(2,580,478)	(337,460)	(5,094,843)
(Gain) loss on disposal of property, plant and equipment	3,744,938	2,945,354	(1,125)	(32,939)
Interest income	(27,307,142)	(84,225,961)	(42,851,382)	(105,953,249)
	1,467,756,520	884,547,968	(144,308,271)	117,235,033
<i>Changes in operating assets and liabilities</i>				
Short-term deposits from financial institution pledged as collateral	(372,705,339)	(341,238,002)	45,572,105	149,830,823
Trade accounts receivable	(452,272,833)	174,582,675	249,881,056	110,775,326

Notes to financial statements are an integral part of these financial statements

Statement of cash flows (continued)

Gunkul Engineering Public Company Limited and its Subsidiaries
For the year ended 31 December 2017

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Unbilled revenue	(422,849,416)	(8,662,860)	145,590	167,689,169
Other receivables	(104,331,073)	5,440,351	(7,915,100)	51,483,550
Revenue Department receivable	248,038,373	23,043,671	-	1,898,355
Inventories	(4,235,370)	(34,641,485)	32,250,516	(1,081,771)
Advance for land lease	(16,978,091)	(26,496,218)	-	-
Other non-current assets	(3,257,388)	(87,280,317)	57,852,724	(47,245,384)
Trade accounts payable	186,055,688	(11,908,306)	(50,907,204)	(140,280,953)
Unearned revenues	(24,337,018)	120,892,549	12,969,844	(97,811,455)
Revenue Department payable	(2,153,236)	7,069,040	(5,187,633)	6,359,001
Retention payables	143,764,709	379,791,390	(34,593,983)	20,020,633
Other payables	322,107,772	(11,757,435)	(10,560,966)	(7,160,296)
Provisions for employee benefits	(2,224,699)	-	(1,821,949)	-
Other non-current liabilities	20,566,962	25,855,101	(4,371,082)	18,675,168
Cash generated from operating activities	982,945,561	1,099,238,122	139,005,647	350,387,199
Taxes received (paid)	(53,141,418)	(136,195,649)	(14,442,422)	(66,115,306)
Net cash from operating activities	929,804,143	963,042,473	124,563,225	284,271,893
<i>Cash flows from investing activities</i>				
Proceeds from disposal (payment) of investment in subsidiary	-	(455,549)	-	1,874,975
Proceeds from disposal of investment in associates and joint ventures	717,704	-	717,704	-
Acquisition of non-controlling interest	(4,059,900)	-	(4,059,900)	-
Payment for increment of capital in subsidiaries	-	-	(1,926,122,245)	(2,920,954,190)
Proceeds from sale of current investments	604,999,854	-	1,560,550,603	-
Payment for purchase of current investments	(949,669,036)	(597,131,351)	(1,160,881,956)	(582,442,823)
Payment for advance for shares subscription	-	(180,000,000)	-	(180,000,000)

Notes to financial statements are an integral part of these financial statements

Statement of cash flows (continued)

Gunkul Engineering Public Company Limited and its Subsidiaries
For the year ended 31 December 2017

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Payment for payable for shares subscription	-	(388,800,000)	-	(388,800,000)
Benefit received from advance payment of machinery for investment	45,502,708	60,484,888	45,502,708	60,484,888
Payment for deposit for purchase of assets	22,673,992	(398,183,623)	-	-
Acquisition of property, plant and equipment	(4,063,457,960)	(6,698,647,204)	(8,330,875)	(4,720,153)
Acquisition of intangible assets	(615,199,672)	(600,510,612)	(449,850)	(397,880)
Proceeds from sale of property, plant and equipment	-	46,350	6,000	40,187
Proceeds of short-term loans to related parties	-	-	1,689,806,414	814,055,286
Payment for short-term loans to related parties	-	-	(1,689,286,414)	(1,567,343,669)
Dividend received	177,255,128	187,504,251	617,475,894	311,383,043
Interest received	46,571,264	86,603,094	50,399,905	91,197,051
Net cash used in investing activities	(4,734,665,918)	(8,529,089,756)	(824,672,012)	(4,365,623,285)
<i>Cash flows from financing activities</i>				
Proceeds from issue of ordinary shares	-	943,738,111	-	906,361,430
Proceeds from exercise of share options	270,401	-	270,401	-
Proceeds of short-term loans	2,729,587,613	103,857,584	5,904,946,049	265,162,051
Repayment of short-term loans	(4,477,969,083)	-	(7,869,173,322)	-
Proceeds of short-term loans to related parties	-	-	649,060,352	-
Repayment of short-term loans to related parties	-	-	(300,000,000)	-
Proceeds of long-term loans	3,658,803,291	4,325,509,574	-	-
Repayment of long-term loans	(550,753,000)	(6,852,000)	-	-
Proceeds from issuance of debentures	2,265,500,000	1,780,000,000	2,265,500,000	1,780,000,000
Repayment of debentures	(300,000,000)	-	(300,000,000)	-
Payment by a lessee for reduction of the outstanding liability relating to a finance lease	(13,579,966)	(18,175,305)	(9,572,021)	(12,967,817)
Dividend paid to owners of the Company	(254,320,025)	(289,669,715)	(254,320,025)	(289,669,715)

Notes to financial statements are an integral part of these financial statements

Statement of cash flows (continued)

Gunkul Engineering Public Company Limited and its Subsidiaries
For the year ended 31 December 2017

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Dividends paid to non-controlling interests	(117,270,472)	-	-	-
Interest paid	(543,706,103)	(291,157,423)	(178,510,463)	(117,581,772)
Net cash cash from (used in) financing activities	2,396,562,656	6,547,250,826	(91,799,029)	2,531,304,177
Net decrease in cash and cash equivalents	(1,408,299,119)	(1,018,796,457)	(791,907,816)	(1,550,047,215)
Effect of exchange rate changes on balances held in foreign currencies	(11,706,519)	(9,632,156)	(11,706,519)	-
Cash and cash equivalents as at 1 January	2,468,235,940	3,496,664,553	1,043,943,100	2,593,990,315
Cash and cash equivalents at 31 December	1,048,230,302	2,468,235,940	240,328,765	1,043,943,100
Non-cash transaction				
Payables for purchases of property, plant and equipment	1,515,866,345	758,879,459	-	16,474
Finance costs and front end fee capitalise as assets	14,691,022	26,366,660	-	-
Payables for purchases of intangible assets	186,988,222	20,972,120	-	-
Acquisition of assets under finance lease contracts	4,010,921	-	4,010,921	-
Payable for share subscription	-	-	22,000,000	-
Stock dividends	264,947,389	264,948,692	264,947,389	264,948,692
Dividend payable	37,229	42,194	37,229	42,194
Converted loan to related company to investment	-	-	-	658,860,899

Notes to financial statements are an integral part of these financial statements

Notes to Financial Statements

GUNKUL ENGINEERING PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES

DECEMBER 31, 2016

These notes form an integral part of the financial statements.

The financial statements issued for Thai statutory and regulatory reporting purposes are prepared in the Thai language. These English language financial statements have been prepared from the Thai language statutory financial statements, and were approved and authorised for issue by the Board of Directors on 21 February 2018.

1. General information

Gunkul Engineering Public Company Limited, the “Company”, is incorporated in Thailand and had its registered office at 1038-1046 Nakornchaisri Road, Nakornchaisri, Dusit, Bangkok. Starting from 23 January 2018, the Company moved its office from 1038-1046 Nakornchaisri Road, Nakornchaisri, Dusit, Bangkok to 1177 Pearl Bangkok Building, 8th floor, Phahonyothin Road, Phaya Thai, Bangkok.

The Company was listed on the Stock Exchange of Thailand on 15 October 2010.

The Company's major shareholder during the financial period was Gunkul Group Co., Ltd. (49.79% shareholding) which was incorporated in Thailand. The principal shareholder of the Company's major shareholder is Dhumrongpiyawut family.

The principal activities of the Company are distribution of equipments for electrical systems, construction and investing in the generating and selling electricity business. Details of the Company's direct and indirect subsidiaries as at 31 December 2017 and 2016 were as follows:

Direct subsidiaries

Name of the entities	Type of business	Country of incorporation	Ownership interest (%)	
			2017	2016
G.K. Power Product Co., Ltd.	Manufacturing and selling of equipments for electrical systems	Thailand	99.99	99.99
G.K. Assembly Co., Ltd.	Manufacturing and selling of equipments for electrical systems	Thailand	99.99	99.99
K.N.P. Supply Co., Ltd.	Import-export and selling equipments for electrical systems	Thailand	99.99	99.99
Greenovation Power Co., Ltd.	Generating and selling electricity	Thailand	99.99	99.99

Name of the entities	Type of business	Country of incorporation	Ownership interest (%)	
			2017	2016
Wind Energy Development Co., Ltd.	Generating and selling electricity	Thailand	99.99	99.99
NK Power Sola Co., Ltd.	Generating and selling electricity	Thailand	99.99	99.99
Gunkul Solar Roof 1 Co., Ltd.	Generating and selling electricity	Thailand	99.99	99.99
Gunkul Training Center Co., Ltd. (Formerly: Gunkul Solar Roof 2 Co., Ltd.)	Providing training services	Thailand	99.97	99.97
Solar Energy Society Co., Ltd.	Generating and selling electricity	Thailand	99.99	99.99
Bright Green Power Co., Ltd.	Generating and selling electricity and investing in companies	Thailand	99.99	99.99
Gunkul Power Development Co., Ltd.	Construction	Thailand	99.99	99.99
Gunkul Solar Community Co., Ltd.	Generating and selling electricity	Thailand	99.99	99.99
Siam Gunkul Solar Energy Co., Ltd.	Generating and selling electricity	Thailand	99.99	99.99
Korat Wind Energy Co., Ltd.	Generating and selling electricity	Thailand	99.99	99.99
Gunkul LED Lighting Co., Ltd.* of energy - saving products	Manufacturing and selling	Thailand	99.98	89.99
GO Bioenergy Co., Ltd.	Investing in companies	Thailand	74.90	74.90
Infinite Alternative Energy Co., Ltd.	Investing in companies	Thailand	67.00	67.00
Eco Thaienergy Co., Ltd.	Generating and selling electricity	Thailand	51.00	51.00
Gunkul Bioenergy Co., Ltd.	Generating and selling electricity	Thailand	99.94	99.94
Gunkul International (Mauritius)	Investing in companies	Mauritius	100.00	100.00
Gunkul Solar Power 1 Co., Ltd.*	Generating and selling electricity	Thailand	-	99.99
Gunkul Solar Power 2 Co., Ltd.*	Generating and selling electricity	Thailand	-	99.99
Gunkul Solar Power 3 Co., Ltd.*	Generating and selling electricity	Thailand	-	99.99
Gunkul Solar Power 4 Co., Ltd.*	Generating and selling electricity	Thailand	-	99.99
Gunkul Solar Power 5 Co., Ltd.*	Generating and selling electricity	Thailand	-	99.99
Gunkul Solar Power Co., Ltd.	Generating and selling electricity	Thailand	99.99	-
BMP Solar Co., Ltd.	Generating and selling electricity	Thailand	48.98	-
Indirect subsidiaries				
Rang-Ngern Solution Co., Ltd.	Generating and selling electricity	Thailand	67.00	67.00
Outgrow A Co., Ltd.	Generating and selling electricity	Thailand	74.90	74.90
Outgrow B Co., Ltd.	Generating and selling electricity	Thailand	74.90	74.90
Outgrow D Co., Ltd.	Generating and selling electricity	Thailand	74.90	74.90

Name of the entities	Type of business	Country of incorporation	Ownership interest (%)	
			2017	2016
Outgrow E Co., Ltd.	Generating and selling electricity	Thailand	74.90	74.90
Outgrow Wood Supply A Co., Ltd.	Wood dealer as a raw material	Thailand	74.90	74.90
Outgrow Wood Supply B Co., Ltd.	Wood dealer as a raw material	Thailand	74.90	74.90
Gunkul Investment (Singapore) Pte. Ltd.	Investing in companies	Singapore	100.00	100.00
Gunkul Myanmar Power (Hlawga) Pte. Ltd.	Investing in companies	Singapore	100.00	100.00
Gunkul Myanmar Central Power 1 Company Limited	Generating and selling electricity	Myanmar	51.00	51.00
Sendai Okura GD Daiichi Godo Kaisha	Generating and selling electricity	Japan	100.00	100.00
Kimitsu Mega Solar Godo Kaisha	Generating and selling electricity	Japan	100.00	100.00
Future Asset Management Kabushiki Kaisha	Assets management	Japan	100.00	100.00
GD Solar Utsunomiya Godo Kaisha	Generating and selling electricity	Japan	100.00	100.00
East Japan Solar 13 Godo Kaisha	Generating and selling electricity	Japan	100.00	100.00
Gunkul Solar Power 1 Co., Ltd.*	Generating and selling electricity	Thailand	99.99	-
Gunkul Solar Power 2 Co., Ltd.*	Generating and selling electricity	Thailand	99.99	-
Gunkul Solar Power 3 Co., Ltd.*	Generating and selling electricity	Thailand	99.99	-
Gunkul Solar Power 4 Co., Ltd.*	Generating and selling electricity	Thailand	99.99	-
Gunkul Solar Power 5 Co., Ltd.*	Generating and selling electricity	Thailand	99.99	-
Gunkul Solar Power 6 Co., Ltd.	Generating and selling electricity	Thailand	99.99	-

*See note to the financial statements 12

2. Basis of preparation of the financial statements

(a) Statement of compliance

The financial statements are prepared in accordance with Thai Financial Reporting Standards (TFRS); guidelines promulgated by the Federation of Accounting Professions (“FAP”); and applicable rules and regulations of the Thai Securities and Exchange Commission.

The FAP has issued new and revised TFRS effective for annual accounting periods beginning on or after 1 January 2017. The initial application of these new and revised TFRS has resulted in changes in certain of the Group’s accounting policies. These changes have no material effect on the financial statements.

In addition to the above new and revised TFRS, the FAP has issued a number of other new and revised TFRS which are effective for annual financial periods beginning on or after 1 January 2018 and have not been adopted in the preparation of these financial statements. The Group has made a preliminary assessment of the potential initial impact on the consolidated and separate financial statements of these new and revised TFRS and expects that there will be no material impact on the financial statements in the period of initial application.

(b) *Basis of measurement*

The financial statements have been prepared on the historical cost basis except for the following items.

Items	Measurement bases
Foreign currency forward contracts	Fair value
Available-for-sale investments	Fair value
Defined benefit liability	Present value of the defined benefit obligation as explained in Note 3 (o)

(c) *Functional and presentation currency*

The financial statements are presented in Thai Baht, which is the Company's functional currency. All financial information presented in Thai Baht has been rounded in the notes to the financial statements to the nearest thousand unless otherwise stated.

(d) *Use of judgements and estimates*

The preparation of financial statements in conformity with TFRS requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

Information about assumption and estimation uncertainties that have a significant risk of resulting in a material adjustments to the amounts recognised in the financial statements is included in the following notes:

Note 4	Acquisition of subsidiary;
Note 5 and 9	Determination of stage of completion
Note 15	Impairment test: key assumptions underlying recoverable amounts; and
Note 20	Measurement of defined benefit obligations: key actuarial assumptions.



Measurement of fair values

A number of the Group's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities.

The Group has an established control framework with respect to the measurement of fair values. This includes a valuation team that has overall responsibility for overseeing all significant fair value measurements, including Level 3 fair values, and reports directly to the chief financial officer.

The valuation team regularly reviews significant unobservable inputs and valuation adjustments. If third party information, such as broker quotes or pricing services, is used to measure fair values, then the valuation team assesses the evidence obtained from the third parties to support the conclusion that such valuations meet the requirements of TFRS, including the level in the fair value hierarchy in which such valuations should be classified.

Significant valuation issues are reported to the Group Audit Committee.

When measuring the fair value of an asset or a liability, the Group uses market observable data as far as possible. Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- *Level 1* : quoted prices (unadjusted) in active markets for identical assets or liabilities.
- *Level 2* : inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- *Level 3* : inputs for the asset or liability that are not based on observable market data (unobservable inputs).

If the inputs used to measure the fair value of an asset or liability might be categorised in different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

Further information about the assumptions made in measuring fair values is included in the following notes:

- Note 4 Acquisition of subsidiary
- Note 33 Financial instruments.

3. Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statements.

(a) Basis of consolidation

The consolidated financial statements relate to the Company and its subsidiaries (together referred to as the “Group”) and the Group’s interests in associates and joint ventures.

Business combinations

The Group applies the acquisition method for all business combinations when control is transferred to the Group other than those with entities under common control.

The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The acquisition date is the date on which control is transferred to the acquirer. Judgment is applied in determining the acquisition date and determining whether control is transferred from one party to another.

Goodwill is measured as the fair value of the consideration transferred including the recognised amount of any non-controlling interest in the acquiree, less the net recognised amount (generally fair value) of the identifiable assets acquired and liabilities assumed, all measured as of the acquisition date.

Consideration transferred includes the fair values of the assets transferred, liabilities incurred by the Group to the previous owners of the acquiree, and equity interests issued by the Group. Consideration transferred also includes the fair value of any contingent consideration and share-based payment awards of the acquiree that are replaced mandatorily in the business combination. If a business combination results in the termination of pre-existing relationships between the Group and the acquiree, then the lower of the termination amount, as contained in the agreement, and the value of the off-market element is deducted from the consideration transferred and recognised in other expenses.

A contingent liability of the acquiree is assumed in a business combination only if such a liability represents a present obligation and arises from a past event, and its fair value can be measured reliably.

Transaction costs that the Group incurs in connection with a business combination, such as legal fees, and other professional and consulting fees are expensed as incurred.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period, or additional assets or liabilities are recognised, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognised at that date.

Acquisitions from entities under common control

Business combinations of entities or businesses under common control are accounted for using a method similar to the pooling of interest method and in accordance with the Guideline issued in 2009 by the FAP.

Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

Non-controlling interests

At the acquisition date, the Group measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

Loss of control

When the Group loses control over a subsidiary, it derecognises the assets and liabilities of the subsidiary, and any related non-controlling interests and other components of equity. Any resulting gain or loss is recognised in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

Interests in equity-accounted investees

The Group's interests in equity-accounted investees comprise interests in associates and joint ventures.

Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies. A joint venture is an arrangement in which the

Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

Interests in associates and joint ventures are accounted for using the equity method. They are recognised initially at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which significant influence or joint control ceases.

Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income or expenses arising from intra-group transactions, are eliminated. Unrealised gains arising from transactions with equity-accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

(b) Foreign currencies

Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at exchange rates at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies are translated to the functional currency at the exchange rate at the reporting date.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated to the functional currency at the exchange rates at the dates of the transactions.

Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on acquisition, are translated to Thai Baht at the exchange rates at the reporting date.

The revenues and expenses of foreign operation are translated to Thai Baht at rates approximating the exchange rates at the dates of the transactions.

Foreign exchange differences are recognised in other comprehensive income and accumulated in the translation reserve, except to extent that the translation difference is allocated to non-controlling interest.

When a foreign operation is disposed of in its entirety or partially such that control, significant influence or joint control is lost, the cumulative amount in the translation reserve related

to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal. If the Group disposes of part of its interest in a subsidiary but retains control, then the relevant proportion of the cumulative amount is reattributed to non-controlling interests. When the Group disposes of only part of an associate or joint venture while retaining significant influence or joint control, the relevant proportion of the cumulative amount is reclassified to profit or loss.

When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, exchange gains and losses arising from such a monetary item are considered to form part of a net investment in a foreign operation and are recognised in other comprehensive income, and presented in the foreign currency translation reserve in equity until disposal of the investment.

(c) *Derivative financial instruments*

Derivative financial instruments are used to manage exposure to foreign exchange, interest rate arising from operational, financing and investment activities. Derivative financial instruments are not used for trading purposes. However, derivatives that do not qualify for hedge accounting are accounted for as trading instruments.

Foreign currency forward contracts

Foreign currency forward contracts protect the Company from risks in fluctuation of exchange rates by establishing the future exchange rate. Derivatives are recognised initially at fair value; attributable transaction costs are recognised in profit or loss when incurred. Subsequent to initial recognition, they are remeasured at fair value. The gain or loss on remeasurement to fair value is recognised immediately in profit or loss.

Foreign exchange option contracts

Foreign exchange option contracts protect the Company from risks in fluctuation of exchange rates by establishing the future exchange rate. This instrument is not recognised in the financial statement on inception. The differences between contracted rates and the transaction rates are recognised in profit or loss as incurred.

Interest rate swap contracts

Interest rate swap contracts protect the Company from risks in fluctuation of interest rates. This instrument is not recognised in the financial statement on inception. The differences under interest rate swaps are recorded as adjustments to the interest expense relating to the financial obligations in profit or loss.

(d) Cash and cash equivalents

Cash and cash equivalents in the statements of cash flows comprise cash balances, current and savings accounts, and highly liquid short-term investments. Bank overdrafts that are repayable on demand are a component of financing activities for the purpose of the statement of cash flows.

(e) Trade and other accounts receivable

Trade and other accounts receivable are stated at their invoice value less allowance for doubtful accounts.

The allowance for doubtful accounts is assessed primarily on analysis of payment histories and future expectations of customer payments. Bad debts are written off when incurred.

(f) Inventories

Inventories are measured at the lower of cost and net realisable value.

Cost of inventories is calculated using the first in first out principle, and comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of production overheads based on normal operating capacity.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs to complete and to make the sale.

(g) Unbilled revenue

Unbilled revenue represents the gross unbilled amount expected to be collected from customers for contract work performed to date. It is measured at cost plus profit recognised to date (see note 9) less progress billings and recognised losses, presented as current asset in the statement of financial position.

(h) Investments

Investments in subsidiaries, associates and joint ventures

Investments in subsidiaries, associates and joint ventures in the separate financial statements of the Company are accounted for using the cost method. Investments in associates and joint ventures in the consolidated financial statements are accounted for using the equity method.

*Investments in other debt and equity securities*

Debt securities and marketable equity securities held for trading are classified as current assets and are stated at fair value, with any resultant gain or loss recognised in profit or loss.

Debt securities that the Group has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are stated at amortised cost, less any impairment losses. The difference between the acquisition cost and redemption value of such debt securities is amortised using the effective interest rate method over the period to maturity.

Debt securities and marketable equity securities, other than those securities held for trading or intended to be held to maturity, are classified as available-for-sale investments. Available-for-sale investments are, subsequent to initial recognition, stated at fair value, and changes therein, other than impairment losses and foreign currency differences on available-for-sale monetary items, are recognised directly in equity. Impairment losses and foreign exchange differences are recognised in profit or loss. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss.

Equity securities which are not marketable are stated at cost less any impairment losses.

The fair value of financial instruments classified as held-for-trading and available-for-sale is determined as the quoted bid price at the reporting date.

Disposal of investments

On disposal of an investment, the difference between net disposal proceeds and the carrying amount together with the associated cumulative gain or loss that was reported in equity is recognised in profit or loss.

If the Group disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the FIFO method applied to the carrying value of the total holding of the investment.

Any changes in the equity interest in subsidiaries of the Group while control is retained are recorded in equity.

(i) *Investment properties*

Investment properties are land which are held to earn rental income, for capital appreciation or for both, but not for sale in the ordinary course of business, use in the production or supply of goods or services or for administrative purposes.

Investment properties are stated at cost less impairment losses.

(j) *Property, plant and equipment*

Recognition and measurement

Owned assets

Property, plant and equipment are stated at cost less accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the assets to a working condition for their intended use, the costs of dismantling and removing the items and restoring the site on which they are located, and capitalised borrowing costs. Cost also may include transfers from other comprehensive income of any gain or loss on qualifying cash flow hedges of foreign currency purchases of property, plant and equipment. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Gain and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and are recognised net within other income or expense in profit or loss.

Leased assets

Leases in terms of which the Group substantially assumes all the risk and rewards of ownership are classified as finance leases. Property, plant and equipment acquired by way of finance leases is capitalised at the lower of its fair value and the present value of the minimum lease payments at the inception of the lease, less accumulated depreciation and impairment losses. Lease payments are apportioned between the finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are charged directly to the profit or loss.



Subsequent costs

The cost of replacing a part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group, and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

Depreciation

Depreciation is calculated based on the depreciable amount, which is the cost of an asset, or other amount substituted for cost, less its residual value.

Depreciation is charged to profit or loss on a straight-line basis over the estimated useful lives of each component of an item of plant and equipment. The estimated useful lives are as follows:

Building improvement and utility system	25-30	years
Machinery and equipment	5-25	years
Fixtures and office equipments	5	years
Vehicles	8-10	years

No depreciation is provided on freehold land or assets under construction.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

(k) Intangible assets

Goodwill

Goodwill that arises upon the acquisition of subsidiaries is included in intangible assets. The measurement of goodwill at initial recognition is described in note 3(a). Subsequent to initial recognition, goodwill is measured at cost less accumulated impairment losses.

Other intangible assets

Other intangible assets that are acquired by the Group and have finite useful lives are measured at cost less accumulated amortisation and accumulated impairment losses.

Subsequent expenditure

Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognised in profit or loss as incurred.

Amortisation

Amortisation is based on the cost of the asset, or other amount substituted for cost, less its residual value.

Amortisation is recognised in profit or loss on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill, from the date that they are available for use, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset.

The estimated useful lives for the current and comparative periods are as follows:

Software licences	3–5 years
Right to use electrical transmission line	25 years
Right to power purchase agreement and right to operate	25 years

Amortisation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

(I) Impairment

The carrying amounts of the Group's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated. For goodwill and intangible assets that have indefinite useful lives or are not yet available for use, the recoverable amount is estimated each year at the same time.

An impairment loss is recognised if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. The impairment loss is recognised in profit or loss.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the value of the asset is impaired, the cumulative loss that had been recognised directly in equity is recognised in profit or loss even though the financial asset has not been derecognised. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in profit or loss.

Calculation of recoverable amount

The recoverable amount of available-for-sale financial assets is calculated by reference to the fair value.

The recoverable amount of a non-financial asset is the greater of the asset's value in use and fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss in respect of a financial asset is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised in profit or loss. For financial assets carried at amortised cost and available-for-sale financial assets that are debt securities, the reversal is recognised in profit or loss. For available-for-sale financial assets that are equity securities, the reversal is recognised in other comprehensive income.

An impairment loss in respect of goodwill is not reversed. Impairment losses recognised in prior periods in respect of other non-financial assets are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

(m) *Interest-bearing liabilities*

Interest-bearing liabilities are recognised initially at fair value less attributable transaction charges. Subsequent to initial recognition, interest-bearing liabilities are stated at amortised cost with any difference between cost and redemption value being recognised in profit or loss over the period of the borrowings on an effective interest basis.

(n) *Trade and other accounts payable*

Trade and other accounts payable are stated at cost.

(o) *Employee benefits*

Defined contribution plans

Obligations for contributions to defined contribution plans are expensed as the related service is provided.

Defined benefit plans

The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount.

The calculation of defined benefit obligations is performed annually by a qualified actuary using the projected unit credit method. When the calculation results in a potential asset for the Group, the recognised asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. To calculate the present value of economic benefits, consideration is given to any application minimum funding requirements.

Remeasurements of the net defined benefit liability, actuarial gain or loss are recognized immediately in OCI. The Group determines the interest expense on the net defined benefit liability for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period, taking into account any changes in the net defined benefit liability during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognized in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in profit or loss. The Group recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs.

Other long-term employee benefits

The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognized in profit or loss in the period in which they arise.

Termination benefits

Termination benefits are expensed at the earlier of when the Group can no longer withdraw the offer of those benefits and when the Group recognizes costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

*Short-term employee benefits*

Short-term employee benefits are expensed as the related service is provided. A liability is recognised for the amount expected to be paid if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

(p) Provisions

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as finance cost.

(q) Revenue

Revenue excludes value added taxes and is arrived at after deduction of trade discounts.

Sale of goods and services rendered

Revenue is recognised in profit or loss when the significant risks and rewards of ownership have been transferred to the buyer. No revenue is recognised if there is continuing management involvement with the goods or there are significant uncertainties regarding recovery of the consideration due, associated costs or the probable return of goods. Service income is recognised as services are provided.

Revenue from sale of electricity

Revenue from sale of electricity is recognised in profit or loss based on the units of sales delivered at the applicable tariff rates.

Construction contracts

Contract revenue includes the initial amount agreed in the contract plus any variations in contract work, claims and incentive payments to the extent that it is probable that they will result in revenue and can be measured reliably. As soon as the outcome of a construction contract can be estimated reliably, contract revenue and expenses are recognised in profit or loss in proportion to the stage of completion of the contract.

The stage of completion is assessed by reference to surveys of work performed. When the outcome of a construction contract cannot be estimated reliably, contract revenue is recognised only to the extent of contract costs incurred that are likely to be recoverable. An expected loss on a contract is recognised immediately in profit or loss.

Rental income

Rental income is recognised in profit or loss on a straight-line basis over the term of the lease. Lease incentives granted are recognised as an integral part of the total rental income. Contingent rentals are recognised as income in the accounting period in which they are earned.

Dividend income

Dividend income is recognised in profit or loss on the date the Group's right to receive payments is established.

Interest and other income

Interest and other income are recognised in profit or loss as it accrues.

(r) Expenses

Finance costs

Interest expenses and similar costs are charged to profit or loss for the period in which they are incurred, except to the extent that they are capitalised as being directly attributable to the acquisition, construction or production of an asset which necessarily takes a substantial year of time to be prepared for its intended use or sale.

Lease payments

Payments made under operating leases are recognised in profit or loss on a straight-line basis over the term of the lease.

Contingent lease payments are accounted for by revising the minimum lease payments over the remaining term of the lease when the lease adjustment is confirmed.

Other expenses

Other expenses are recognised in profit or loss as it accrues.

(s) Income tax

Income tax expense for the year comprises current and deferred tax. Current and deferred tax are recognised in profit or loss except to the extent that they relate to a business combination, or items recognised directly in equity or in other comprehensive income.



Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for the following temporary differences: the initial recognition of goodwill; the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss; and differences relating to investments in subsidiaries and joint ventures to the extent that it is probable that they will not reverse in the foreseeable future.

The measurement of deferred tax reflects the tax consequences that would follow the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date.

In determining the amount of current and deferred tax, the Group takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.

(t) Basic earnings per share

The Group presents basic earnings per share (EPS) data for its ordinary shares. Basic earnings per share is calculated by dividing the profit or loss attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares outstanding during the year.

(u) Segment reporting

Segment results that are reported to the Group's CEO (the chief operating decision maker) include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

4. Acquisition of subsidiary

On 17 November 2016, the Company entered into agreement of preferred shares purchase in BMP Solar Company Limited (BMP Solar), which is the solar power plant operator with contract capacity at 8.0 MW generating to the Provincial Electricity Authority (PEA). Management believes that the acquisition will support the Group's policy in becoming the leader in renewable energy power plant operator and to be a significant supporter of driving to increase the renewable energy power plant. Later, on 30 May 2017, the Company acquired 48,000 preferred shares in BMP Solar. This will allow the Company or the buyer to receive dividends and the right to vote at 99.99 percent of the total dividend or voting rights. This is in accordance with the terms of the share purchase agreement. Also, with the changing process of the Board of Directors and the structure of shareholding in BMP Solar was completed on that date in order to meet the terms agreed by the Company. However, the Company will acquire more ordinary shares after the Company has sold commercial electricity for 3 years.

TFRS required Management to make preliminary assessment of the fair values of the assets, liabilities and contingent liabilities specified at the acquisition date. The Group hired an independent appraiser to determine the fair value of assets and liabilities acquired during the measurement period, which must not exceed one year from the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date. Finalisation of the valuation of net assets of BMP Solar Company Limited which the Company acquired on 30 May 2017 was completed in November 2017.

The following summarises the major classes of consideration transferred, and the recognised amounts of assets acquired and liabilities assumed at the acquisition date:

Consideration transferred

(in thousand Baht)

	Fair value
Cash	180,000
Payables- share capital	26,713
Contingent consideration	327
	207,040

Identifiable assets acquired and liabilities assumed

(in thousand Baht)

	Note	Fair value
Cash and cash equivalents		207
Trade receivables		5,859
Other receivables		36,564
Property, plant and equipment	14	376,084
Intangible assets	15	209,687
Deferred tax asset	16	27,479
Other payables		(19,401)
Borrowing		(449,022)
Deferred tax liabilities	16	(29,652)
Total identifiable net assets		157,805
Non-controlling interests		-
Total identifiable net assets – equity holder of the Company		157,805
Goodwill arising acquisition	15	49,235
Purchase consideration transferred		207,040
Net cash acquired with the subsidiary		(207)
Cash paid		180,000
Net cash outflow		179,793

The valuation techniques used for measuring the fair value of material assets acquired are as follows.

- Machine and equipments is estimated at its fair value at the acquisition date
- Fair value of intangible assets which consisted of right to power purchase agreement and right to operate is estimated by an independent appraiser using the income approach.

For the period from acquisition date to 31 December 2017, BMP Solar Co., Ltd contributed revenue of Baht 31.31 million and net profit of Baht 13.25 million to the Group's results. If the acquisition had occurred on 1 January 2017, management estimates that consolidated revenue and consolidated profit for the period would have increased by Baht 36.78 million and Baht 13.25 million, respectively. In determining these amounts, management has assumed that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same if the acquisition had occurred on 1 January 2017.

Acquisition-related costs

The Group incurred acquisition-related costs of Baht 0.6 million related to external legal fees and due diligence costs. The legal fees and due diligence costs have been included in administrative expenses in the Group's consolidated statement of comprehensive income

5. Related parties

For the purposes of these financial statements, parties are considered to be related to the Group if the Group has the ability, directly or indirectly, to control or joint control the party or exercise significant influence over the party in making financial and operating decisions, or vice versa, or where the Group and the party are subject to common control or common significant influence. Related parties may be individuals or other entities.

Relationships with subsidiaries, associates, joint ventures, key management and other related parties were as follows:

Name of entities	Country of Incorporation/ /Nationality	Nature of relationships
Gunkul Group Co., Ltd.	Thailand	Major shareholder
G.K. Power Product Co., Ltd.	Thailand	Subsidiary and/or common directors
G.K. Assembly Co., Ltd.	Thailand	Subsidiary and/or common directors
K.N.P Supply Co., Ltd.	Thailand	Subsidiary and/or common directors
Greenovation Power Co., Ltd.	Thailand	Subsidiary and/or common directors

Name of entities	Country of Incorporation/ /Nationality	Nature of relationships
Wind Energy Development Co., Ltd.	Thailand	Subsidiary and/or common directors
NK Power Sola Co., Ltd.	Thailand	Subsidiary and/or common directors
Gunkul Solar Roof 1 Co., Ltd.	Thailand	Subsidiary and/or common directors
Gunkul Training Center Co., Ltd. (Formerly: Gunkul Solar Roof 2 Co., Ltd.)	Thailand	Subsidiary and/or common directors
Solar Energy Society Co., Ltd.	Thailand	Subsidiary and/or common directors
Bright Green Power Co., Ltd.	Thailand	Subsidiary and/or common directors
Gunkul Power Development Co., Ltd.	Thailand	Subsidiary and/or common directors
Gunkul Solar Community Co., Ltd.	Thailand	Subsidiary and/or common directors
Siam Gunkul Solar Energy Co., Ltd.	Thailand	Subsidiary and/or common directors
Korat Wind Energy Co., Ltd.	Thailand	Subsidiary and/or common directors
Gunkul LED Lighting Co., Ltd.	Thailand	Subsidiary and/or common directors
GO Bioenergy Co., Ltd.	Thailand	Subsidiary and/or common directors
Infinite Alternative Energy Co., Ltd.	Thailand	Subsidiary and/or common directors
Eco Thaienergy Co., Ltd.	Thailand	Subsidiary and/or common directors
Gunkul Bioenergy Co., Ltd.	Thailand	Subsidiary and/or common directors
Gunkul International (Mauritius)	Mauritius	Subsidiary and/or common directors
Gunkul Solar Power Co., Ltd.	Thailand	Subsidiary and/or common directors
BMP Solar Co., Ltd.	Thailand	Subsidiary and/or common directors
Rang-Ngern Solution Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Outgrow A Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Outgrow B Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Outgrow D Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Outgrow E Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Outgrow Wood Supply A Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Outgrow Wood Supply B Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Gunkul Investment (Singapore) Pte. Ltd.	Singapore	Indirect subsidiary and/or common directors
Gunkul Myanmar Power (Hlawga) Pte. Ltd.	Singapore	Indirect subsidiary and/or common directors
Gunkul Myanmar Central Power 1 Company Limited	Myanmar	Indirect subsidiary and/or common directors
Sendai Okura GD Daiichi Godo Kaisha	Japan	Indirect subsidiary
Kimitsu Mega Solar Godo Kaisha	Japan	Indirect subsidiary
Future Asset Management Kabushiki Kaisha	Japan	Indirect subsidiary

Country of Incorporation/		
Name of entities	/Nationality	Nature of relationships
GD Solar Utsunomiya Godo Kaisha	Japan	Indirect subsidiary
East Japan Solar 13 Godo Kaisha	Japan	Indirect subsidiary
Gunkul Solar Power 1 Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Gunkul Solar Power 2 Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Gunkul Solar Power 3 Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Gunkul Solar Power 4 Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Gunkul Solar Power 5 Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
Gunkul Solar Power 6 Co., Ltd.	Thailand	Indirect subsidiary and/or common directors
G-Power Source Co., Ltd.	Thailand	Associate and/or common directors
Siam Wind Energy Co., Ltd.	Thailand	Associate and/or common directors
Future Electrical Control Co., Ltd.	Thailand	Holding by major shareholder
Gunkul Chubu Powergen Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 1 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 2 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 3 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 4 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 5 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 6 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 8 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 9 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 10 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 16 Co., Ltd.	Thailand	Joint venture
WHA Gunkul Green Solar Roof 17 Co., Ltd.	Thailand	Joint venture
Gunkul Trading and Agency Co., Ltd.	Thailand	Common directors
FEC & SAC Joint venture	Thailand	Common directors
G.M. Supply and Construction Co., Ltd.	Thailand	Common directors
Gunkul Engineering (2000) Co., Ltd.	Thailand	Common directors
Great Miracle Asset Company Limited	Thailand	Common directors
Great Miracle Asset 2 Company Limited	Thailand	Common directors
Great Miracle Asset 3 Company Limited	Thailand	Common directors
Great Miracle Asset 4 Company Limited	Thailand	Common directors
Great Miracle Asset 5 Company Limited	Thailand	Common directors
Great Miracle Asset 7 Company Limited	Thailand	Common directors

Name of entities	Country of Incorporation/ /Nationality	Nature of relationships
Great Miracle Asset 8 Company Limited	Thailand	Common directors
Great Miracle Asset 9 Company Limited	Thailand	Common directors
Great Miracle Asset 10 Company Limited	Thailand	Common directors
Great Miracle Asset 11 Company Limited	Thailand	Common directors
Great Miracle Asset 13 Company Limited	Thailand	Common directors
Great Miracle Asset 14 Company Limited	Thailand	Common directors
Gunkul Tech Co., Ltd.	Thailand	Holding by major shareholder
Noprakul Co., Ltd.	Thailand	Holding by the director
Gunkul Marine Line Co., Ltd.	Thailand	Holding by the director
Siam Gunkul Power Co., Ltd.	Thailand	Holding by the director
Thonglor 9 Co., Ltd.	Thailand	Holding by major shareholder
Kulnatee Co., Ltd.	Thailand	Holding by close relative of a director
Green filed energy Co., Ltd.	Thailand	Holding by close relative of a director
P.M. Building Group Co., Ltd.	Thailand	Holding by close relative of a director
Tech-Green Co., Ltd.	Thailand	Holding by major shareholder
Siam Future Co., Ltd.	Thailand	Holding by major shareholder
Entirety Sap Co., Ltd.	Thailand	Holding by major shareholder
Happy Green 2558 Co., Ltd.	Thailand	Holding by major shareholder
Key management personnel	Thailand	Persons having authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of the Group

The pricing policies for transactions are explained further below:

Transactions	Pricing policies
Purchase and sale of goods	Cost price plus 5% to 30%
Services fee	Contractually agreed prices
Interest income and expense	Interest rate equal to interest rate of loan from financial institution
Rental	Nearby the appraisal value by independent appraiser
Purchase and sales of assets	Net book value
Construction expense	Contractually agreed prices

Significant transactions for the years ended 31 December with related parties were as follows:

(in thousand Baht)

Year ended 31 December	Consolidated		Separate	
	financial statements		financial statements	
	2017	2016	2017	2016
Subsidiaries				
Revenue from sale	-	-	18,968	28,848
Revenue from rendering of services	-	-	1,575	10,121
Management service income	-	-	5,400	5,040
Rental income	-	-	255	400
Interest income	-	-	21,971	27,918
Dividend income	-	-	464,654	25,000
Purchase of goods and service	-	-	409,347	492,212
Cost of construction	-	-	130	-
Service expense	-	-	263	-
Interest expenses	-	-	1,154	-
Purchase assets	-	-	200	-
Associates				
Revenue from rendering of services	29,246	23,914	9,101	23,914
Dividend income	-	-	70,122	88,536
Joint ventures				
Revenue from sale	-	5,122	-	-
Revenue from rendering of services	33,345	28,622	26,250	25,852
Management service income	4,913	4,724	4,913	4,724
Dividend income	-	-	107,103	119,094
Other related parties				
Revenue from sale	47,569	61,621	10,528	18,191
Other income	417	-	-	-
Purchase of goods and service	1,524	255,711	1,524	255,711
Cost of construction	-	251,409	-	217,355
Office and warehouse rental fee	11,265	11,243	8,439	8,316
Service expense	253	338	-	-
Purchase of electrical transmission line	626,557	150,565	-	-
Sales of assets	6	-	6	-

Key management personnel compensation

Key management personnel compensation are benefits paid to directors and executives of the Company. They comprise of management compensation such as salaries, related benefit, included post-employment benefits and directors' remuneration.

(in thousand Baht)

Year ended 31 December	Consolidated		Separate	
	financial statements		financial statements	
	2017	2016	2017	2016
Short-term benefits	97,532	87,454	86,516	75,440
Post-employment benefits	1,898	1,320	1,705	1,221
Total	99,430	88,774	88,221	76,661

Balances as at 31 December with related parties were as follows:

(in thousand Baht)

	Consolidated		Separate	
	financial statements		financial statements	
	2017	2016	2017	2016
Trade accounts receivable – related parties				
Subsidiaries				
G.K. Assembly Co., Ltd.	-	-	-	1,622
G.K. Power Product Co., Ltd.	-	-	-	4
K.N.P Supply Co., Ltd.	-	-	1,436	978
Gunkul Power Development Co., Ltd.	-	-	1,181	18
Rang-Ngern Solution Co., Ltd.	-	-	1,441	-
Gunkul Solar Roof 1 Co., Ltd.	-	-	4	-
Eco Thaienergy Co., Ltd.	-	-	64	-
Associates				
G-Power Source Co., Ltd.	1,189	5,528	-	5,528
Joint ventures				
Gunkul Chubu Powergen Co., Ltd.	4,932	5,996	4,932	548
WHA Gunkul Green Solar Roof 1 Co., Ltd.	50	45	-	-
WHA Gunkul Green Solar Roof 3 Co., Ltd.	66	59	-	-
WHA Gunkul Green Solar Roof 6 Co., Ltd.	66	59	-	-
WHA Gunkul Green Solar Roof 17 Co., Ltd.	79	71	-	-

(in thousand Baht)

	Consolidated		Separate	
	financial statements		financial statements	
	2017	2016	2017	2016
Other related parties				
Future Electrical Control Co., Ltd.	29,242	42,662	7,655	551
Kulnatee Co., Ltd.	15	8	15	8
Total	35,639	54,428	16,728	9,298
Other receivables – related parties				
Subsidiaries				
G.K. Assembly Co., Ltd.	-	-	487	10
K.N.P Supply Co., Ltd.	-	-	8	8
Gunkul Power Development Co., Ltd.	-	-	2,303	32
Gunkul LED Lighting Co., Ltd.	-	-	2,318	1,011
Rang-Ngern Solution Co., Ltd.	-	-	15	17,689
Eco Thaienergy Co., Ltd.	-	-	778	17
NK Power Sola Co., Ltd.	-	-	164	124
Gunkul Solar Power Co., Ltd.	-	-	9	-
Gunkul Solar Power 5 Co., Ltd.	-	-	27	-
BMP Solar Co., Ltd.	-	-	7,862	-
Korat Wind Energy Co., Ltd.	-	-	23	-
Solar Energy Society Co., Ltd.	-	-	407	-
Associates				
G-Power Source Co., Ltd.	115,804	91,400	115,804	91,400
Joint ventures				
Gunkul Chubu Powergen Co., Ltd.	10	421	10	421
Total	115,814	91,821	130,215	110,866

Short-term loans to related parties

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
	(%)		(in thousand Baht)	
Subsidiaries				
Bright Green Power Co., Ltd.	-	3.10	40,328	40,328
Gunkul LED Lighting Co., Ltd.	2.65 - 3.13	2.65 - 3.13	44,000	47,000
Rang-Ngern Solution Co., Ltd.	-	4.7	-	345,000
Eco Thaienergy Co., Ltd.	-	5.00	-	125,000
Gunkul Solar Power Co., Ltd.	2.97	-	500	-
BMP Solar Co., Ltd.	2.69 - 3.01	-	440,980	-
Solar Energy Society Co., Ltd.	2.77	-	31,000	-
Total			556,808	557,328

Movements during the years ended 31 December of short-term loans to related parties were as follows:

Short-term loan from related parties

(in thousand Baht)

	Separate financial statements	
	2017	2016
As at 1 January	557,328	457,000
Increase	1,699,286	1,573,244
Decrease	(1,699,806)	(814,055)
Transfer to investment	-	(658,861)
As at 31 December	556,808	557,328

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Trade accounts payable – related parties				
Subsidiaries				
G.K. Assembly Co., Ltd.	-	-	119,586	73,551
G.K. Power Product Co., Ltd.	-	-	58,511	40,964
K.N.P Supply Co., Ltd.	-	-	1,508	23,219
Gunkul LED Lighting Co., Ltd.	-	-	2,214	247
Other related party				
Future Electrical Control Co., Ltd.	48,121	1,350	-	1
Total	48,121	1,350	181,819	137,982
Other payable – related parties				
Subsidiaries				
K.N.P Supply Co., Ltd.	-	-	-	1
Gunkul Power Development Co., Ltd.	-	-	1,505	-
Gunkul Solar Power 5 Co., Ltd.	-	-	98	-
Joint venture				
Gunkul Chubu Powergen Co., Ltd.	8,555	4,609	8,555	4,609
Other related parties				
P.M. Building Group Co., Ltd.	58	58	-	-
Great Miracle Asset Co., Ltd.	145	-	145	-
Great Miracle Asset Co 2., Ltd.	168	-	168	-
Great Miracle Asset Co 3., Ltd.	148	-	148	-
Great Miracle Asset Co 4., Ltd.	92	-	-	-
Great Miracle Asset Co 5., Ltd.	67	-	67	-
Great Miracle Asset Co 7., Ltd.	51	-	-	-
Great Miracle Asset Co 9., Ltd.	64	-	-	-
Total	9,348	4,667	10,686	4,610
Payable for purchases of assets –				
Other related parties				
Future Electrical Control Co., Ltd.	200,077	20,972	-	-
Retention payables– Other related parties				
Future Electrical Control Co., Ltd.	53,955	61,396	2,362	36,362

Short-term loans from related parties

(in thousand Baht)

	Interest rate		Separate financial statements	
	2017	2016	2017	2016
	(%)		(in thousand Baht)	
Subsidiaries				
Gunkul International (Mauritius)	-	-	352,122	-
Total			352,122	-

Movements during the years ended 31 December of short-term loans from related parties were as follows:

Short-term loans from related parties

(in thousand Baht)

	Separate financial statements	
	2017	2016
As at 1 January	-	-
Increase	652,122	-
Decrease	(300,000)	-
As at 31 December	352,122	-

Significant agreements with related parties

As at 31 December 2017, the Group had agreements with related parties as follows:

Land building and properties lease/sublease agreements

The Company has land lease agreement for power plants construction with a subsidiary for the period of 26 years expiring in June 2039. The subsidiary has committed to pay rental fee as stipulated in the agreement.

The Company and certain subsidiaries have land lease, sublease land building and properties with certain related parties. The agreements are for period of 2-3 years and shall be renewable. The Company and subsidiaries have committed to pay rental fee as stipulated in the agreements.

A subsidiary has land agreement with the Company's directors expiring in December 2017 and shall be renewable. The subsidiary has committed to pay rental fee as stipulated in the agreement.

The Company and certain subsidiaries have lease/sublease land building property and rooftop space with its subsidiaries in the Group. The agreements are for period of 2 to 26 years and shall be renewable. The Company and subsidiaries has committed to pay rental fee as stipulated in the agreements.

Operation and maintenance agreements

The Company and a subsidiary had several operation and maintenance agreements with subsidiaries, associate and joint venture whereby the service fees are stipulated in the agreements. These agreements expire in December 2021.

Service agreements

Joint ventures and subsidiaries had several service agreements with the Company whereby the agreements is for a period of 5 years and shall be renewable. The service fees are stipulated in the agreements. These agreements expire in February 2018 to January 2022.

Construction service agreements

The certain subsidiaries had several construction service agreements with a related party. The subsidiaries have committed to pay services fee as stipulated in the agreements.

Asset management service agreements

Four subsidiaries in Japan have asset management service agreements with other subsidiary in Japan. These agreements have a period of 20 years commencing from commercial operation date. The agreements expire during April 2038 to December 2041. The services fee are stipulated in the agreements.

6. Cash and cash equivalents

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Cash on hand	2,397	952	205	335
Cash at banks-current accounts	100,199	98,050	98,615	96,004
Cash at banks-savings accounts	945,118	1,869,151	141,484	447,579
Highly liquid short-term investments	516	500,083	25	500,025
Cash and cash equivalents in the statement of financial position	1,048,230	2,468,236	240,329	1,043,943

7. Other investments

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Promissory notes	-	964,357	-	949,668
Equity securities available-for-sale	605,020	-	550,021	-
	605,020	964,357	550,021	949,668

As at 31 December 2017, the Group has current investments in equity securities available-for-sale with a financial institution (2016: current investments in promissory notes, the periods are from 3 months to 6 months and interest bearing at the rate between 4.9% to 6.5% per annum).

Movements during the years ended 31 December of marketable equity was as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Current investment				
Available-for-sale securities				
At 1 January	-	-	-	-
Purchases during the year	605,000	-	550,000	-
Sales during the year	-	-	-	-
Valuation adjustment	20	-	21	-
At 31 December	605,020	-	550,021	-

8. Trade accounts receivable

(in thousand Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Related parties	5	35,639	54,428	16,728	9,298
Other parties		1,147,652	676,590	207,264	464,573
Total		1,183,291	731,018	223,992	478,871
Less allowance for doubtful accounts		(896)	(896)	(896)	(896)
Net		1,182,395	730,122	223,096	472,975
Bad and doubtful debts expense for the year		-	-	-	-

Aging analyses for trade accounts receivable were as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Related parties				
Within credit terms	14,767	12,813	14,555	8,612
Overdue:				
Less than 3 months	4,338	41,615	1,178	686
3-6 months	16,534	-	3	-
6-12 months	-	-	992	-
	35,639	54,428	16,728	9,298
Other parties				
Within credit terms	666,012	462,476	143,476	285,647
Overdue:				
Less than 3 months	456,741	196,123	43,009	169,014
3-6 months	8,964	10,255	8,258	5,015
6-12 months	3,516	536	205	536
Over 12 months	12,419	7,200	12,316	4,361
	1,147,652	676,590	207,264	464,573
Less allowance for doubtful accounts	(896)	(896)	(896)	(896)
	1,146,756	675,694	206,368	463,677
Net	1,182,395	730,122	223,096	472,975

The normal credit term granted by the Group ranges from 30 days to 90 days.

9. Unbilled revenue

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Cost and attributable profit	2,435,451	1,670,414	28,649	726,000
Progress billings	(1,675,841)	(1,333,654)	(16,500)	(713,706)
Net	759,610	336,760	12,149	12,294

10. Inventories

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Finished goods	233,925	260,591	186,195	224,599
Work in progress	43,880	39,539	-	-
Raw materials	90,923	99,467	-	-
Factory supplies	1,010	1,070	-	-
Construction in progress	30,352	93	11	-
Goods in transit	25,177	20,271	15,791	9,648
Total	425,267	421,031	201,997	234,247
Less allowance for declining in value of inventories	(21,496)	(18,694)	(7,092)	(7,429)
Net	403,771	402,337	194,905	226,818
Inventories recognised as an expense in 'cost of sales of goods':				
- Cost	832,523	927,680	826,163	887,680
- Write-down to net realisable value	(10,750)	(3,267)	(2,411)	(469)
- Reversal of write-down	7,948	5,848	2,748	5,564
Net	829,721	930,261	826,500	892,775

11. Investments in associates and joint ventures

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
At 1 January	1,295,934	1,231,749	918,977	918,977
Share of net profit of associates and joint ventures	269,263	271,815	-	-
Dividend income	(177,225)	(207,630)	-	-
Disposals	(1,332)	-	(1,332)	-
At 31 December	1,386,640	1,295,934	917,645	918,977

Investment in associates and joint ventures as at 31 December 2017 and 2016, and dividend income for the years then ended were as follows:
(in thousand Baht)

	Consolidated financial statements									
	Ownership interest		Paid-up capital		Cost		Equity		Dividend income	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
	(%)						(in thousand Baht)			
Associates										
G-Power Source Co., Ltd.	40.00	40.00	930,000	930,000	397,595	397,595	381,407	356,864	70,122	88,536
Siam Wind Energy Co., Ltd.*	-	40.00	-	250	-	100	-	27	-	-
					397,595	397,695	381,407	356,891	70,122	88,536
Joint ventures										
Gunkul Chubu Powergen Co., Ltd.	51.00	51.00	992,000	992,000	505,920	505,920	997,010	932,176	107,103	119,094
WHA Gunkul Green Solar Roof 1 Co., Ltd.	25.01	25.01	11,500	11,500	2,876	2,876	1,318	909	-	-
WHA Gunkul Green Solar Roof 2 Co., Ltd.**	-	25.01	-	250	-	62	-	7	-	-
WHA Gunkul Green Solar Roof 3 Co., Ltd.	25.01	25.01	14,500	14,500	3,626	3,626	2,220	1,606	-	-
WHA Gunkul Green Solar Roof 4 Co., Ltd.**	-	25.01	-	250	-	63	-	7	-	-
WHA Gunkul Green Solar Roof 5 Co., Ltd.**	-	25.01	-	250	-	63	-	9	-	-
WHA Gunkul Green Solar Roof 6 Co., Ltd.	25.01	25.01	14,500	14,500	3,626	3,626	2,151	1,533	-	-
WHA Gunkul Green Solar Roof 8 Co., Ltd.**	-	25.01	-	100	-	25	-	-	-	-

(in thousand Baht)

	Consolidated financial statements									
	Ownership interest		Paid-up capital		Cost		Equity		Dividend income	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
	(%)				(in thousand Baht)					
WHA Gunkul Green Solar Roof 9 Co., Ltd.**	-	25.01	-	100	-	25	-	-	-	-
WHA Gunkul Green Solar Roof 10 Co., Ltd.**	-	25.01	-	3,875	-	969	-	882	-	-
WHA Gunkul Green Solar Roof 16 Co., Ltd.**	-	25.01	-	100	-	25	-	-	-	-
WHA Gunkul Green Solar Roof 17 Co., Ltd.	25.01	25.01	16,000	16,000	4,002	4,002	2,534	1,914	-	-
Total					520,050	521,282	1,005,233	939,043	107,103	119,094
					917,645	918,977	1,386,640	1,295,934	177,225	207,630

None of the Group's associates and joint ventures are publicly listed and consequently do not have published price quotations.

* The liquidation was completed on 2 August 2017.

** The liquidation was completed on 12 October 2017.

(in thousand Baht)

Separate financial statements											
Ownership interest			Paid-up capital		Cost		Equity		At cost – net		Dividend income
2017	2016		2017	2016	2017	2016	2017	2016	2017	2016	2016
	(%)						(in thousand Baht)				
Associates	40.00	40.00	930,000	930,000	397,595	397,595	-	-	397,595	397,595	70,122
	-	40.00	-	250	-	100	-	-	-	100	-
					397,595	397,695	-	-	397,595	397,695	70,122
											88,536
Joint ventures	51.00	51.00	992,000	992,000	505,920	505,920	-	-	505,920	505,919	107,103
	25.01	25.01	11,500	11,500	2,876	2,876	-	-	2,876	2,876	-
	-	25.01	-	250	-	62	-	-	-	63	-
	25.01	25.01	14,500	14,500	3,626	3,626	-	-	3,626	3,626	-
	-	25.01	-	250	-	63	-	-	-	63	-
	25.01	25.01	-	250	-	63	-	-	-	63	-
	-	25.01	-	250	-	63	-	-	-	63	-

(in thousand Baht)

Separate financial statements											
Ownership interest		Paid-up capital		Cost		Equity		At cost – net		Dividend income	
2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
	(%)										
WHA Gunkul Green											
Solar Roof 6 Co., Ltd.	25.01	25.01	14,500	14,500	3,626	3,626	-	3,626	3,626	-	-
WHA Gunkul Green											
Solar Roof 8 Co., Ltd.**	-	25.01	-	100	-	25	-	-	25	-	-
WHA Gunkul Green											
Solar Roof 9 Co., Ltd.**	-	25.01	-	100	-	25	-	-	25	-	-
WHA Gunkul Green											
Solar Roof 10 Co., Ltd.**	-	25.01	-	3,875	-	969	-	-	969	-	-
WHA Gunkul Green											
Solar Roof 16 Co., Ltd.**	-	25.01	-	100	-	25	-	-	25	-	-
WHA Gunkul Green											
Solar Roof 17 Co., Ltd.	25.01	25.01	16,000	16,000	4,002	4,002	-	4,002	4,002	-	-
					520,050	521,282	-	520,050	521,282	107,103	119,094
Total					917,645	918,977	-	917,645	918,977	177,225	207,630

None of the Company's associates and joint ventures are publicly listed and consequently do not have published price quotations.

* The liquidation was completed on 2 August 2017.

** The liquidation was completed on 12 October 2017.

Associates and joint ventures

The following table summarises the financial information of the associates and joint ventures as included in their own financial statements, adjusted for fair value adjustments at acquisition and differences in accounting policies. The table also reconciles the summarised financial information to the carrying amount of the Group's interest in these companies.

(in thousand Baht)

	Associates		Joint ventures	
	G-Power Source		Gunkul Chubu Powergen	
	Co., Ltd.		Co., Ltd.	
	2017	2016	2017	2016
Revenue	475,825	495,228	590,980	616,022
Profit from continuing operations	227,288	224,611	345,267	352,321
Other comprehensive income (loss)	-	-	(21)	-
Total comprehensive income (100%)	227,288	224,611	345,246	352,321
Total comprehensive income (40% and 51% hold)	90,916	89,844	176,075	179,683
Elimination of unrealised profit on sales of property, plant and equipment	8,134	8,308	7,256	7,251
Power purchase agreement	(4,384)	(4,384)	(11,394)	(11,394)
Group's share of total comprehensive income	94,666	93,768	171,937	175,540
Current assets	126,322	114,717	367,082	350,974
Non-current assets	2,404,433	2,532,933	2,548,880	2,674,059
Current liabilities	(241,749)	(473,136)	(265,626)	(269,267)
Non-current liabilities	(1,151,218)	(1,088,710)	(855,174)	(1,095,844)
Net assets (100%)	1,137,788	1,085,804	1,795,162	1,659,922
Group's share of net assets (40% and 51% hold)	455,115	434,321	915,533	846,561
Elimination of unrealised profit on sales of property, plant and equipment	(158,769)	(166,903)	(149,524)	(156,780)
Power purchase agreement	85,061	89,445	231,001	242,395
Carrying amount of interest in associate/joint ventures	381,407	356,863	997,010	932,176
The Group's interests in net asset-accounted investee at 1 January	356,863	351,631	932,176	875,729
Other comprehensive income of the Group	94,666	93,768	171,937	175,541
Dividend during the year	(70,122)	(88,536)	(107,103)	(119,094)
Carrying value of equity-accounted investee at 31 December	381,407	356,863	997,010	932,176

Immaterial associates –and joint ventures

The following is summarised financial information for the Group's interest in immaterial associates and joint ventures based on the amounts reported in the Group's consolidated financial statements:

(in thousand Baht)

	Immaterial Associates		Immaterial Joint ventures	
	2017	2016	2017	2016
Carrying amount of interests in immaterial associates and joint ventures	-	27	8,223	6,867
Group's share of:				
- Profit (loss) from continuing operations	73	(20)	2,588	2,527
- Other comprehensive income (loss)	-	-	-	-
- Total comprehensive income (loss)	73	(20)	2,588	2,527

12. Investments in subsidiaries

(in thousand Baht)

	Note	Separate financial statements	
		2017	2016
At 1 January		10,135,282	6,557,342
Increase in share capital of subsidiaries		1,926,122	3,537,675
Acquisition of subsidiary	4	206,938	42,140
Acquisition of Non-controlling interests		4,060	-
Disposal		-	(1,875)
At 31 December		12,272,402	10,135,282

Establishment of subsidiary

On 9 May 2017, the Company established Gunkul Solar Power Co., Ltd. in order to invest in renewable energy projects. The registered capital of such subsidiary was Baht 599.99 million and Baht 179.25 million for to the issued and paid-up share capital. The Company hold 99.99% in such subsidiary. The Company paid for subsidiary's share capital by swapping of the Company's shareholding in 5 subsidiaries instead of paying by cash (Baht 154 million) and paid the remaining of Baht 25 million with cash.

increase in share capital of subsidiaries***Greenovation Power Co., Ltd.***

During the year ended 31 December 2017, the Company paid for the additional share capital amounting to Baht 347 million, totalling paid-up share capital amount of Baht 1,485 million.

Gunkul International (Mauritius)

During the period ended 31 December 2017, the Company paid for the additional share capital amounting to Baht 1,500 million, totalling paid-up share capital amount of Baht 4,741 million.

BMP Solar Co., Ltd.

During the period ended 31 December 2017, the Company paid for the additional share capital amounting to Baht 10 million, totalling paid-up share capital amount of Baht 0.98 million.

Bright Green Power Co., Ltd.

During the period ended 31 December 2017, the Company paid for the additional share capital amounting to Baht 13 million, totalling paid-up share capital amount of Baht 103 million.

Korat Wind Energy Co., Ltd.

During the period ended 31 December 2017, the Company paid for the additional share capital amounting to Baht 31 million, totalling paid-up share capital amount of Baht 809 million.

Acquisition of non-controlling interests

On 11 August 2017, the meeting of the board of directors approved the additional acquiring of share capital in Gunkul LED Lighting Co., Ltd at 9.99% of the issued and paid-up share amounting to Baht 4.06 million, resulting in an increase of the Company's interests in Gunkul LED Lighting Co., Ltd from 89.99% to 99.98%.

(in thousand Baht)

	Separate financial statements									
	Ownership interest		Paid-up capital		Cost		Impairment		At cost – net	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
	(%)						(in thousand Baht)			
Infinite Alternative Energy Co., Ltd.	67.00	67.00	1,590,000	1,590,000	1,105,996	1,105,996	-	-	1,105,996	1,105,996
Eco Thaienergy Co., Ltd.	51.00	51.00	76,500	76,500	42,015	42,015	-	-	42,015	42,015
Gunkul Bioenergy Co., Ltd.	100.00	100.00	125	125	125	125	-	-	125	125
Gunkul International (Mauritius)	100.00	100.00	4,740,445	3,239,983	4,740,445	3,239,983	-	-	4,740,445	3,239,983
Gunkul Solar Power 1 Co., Ltd.*	-	100.00	-	25,000	-	25,000	-	-	-	25,000
Gunkul Solar Power 2 Co., Ltd.*	-	100.00	-	54,250	-	54,250	-	-	-	54,250
Gunkul Solar Power 3 Co., Ltd.*	-	100.00	-	25,000	-	25,000	-	-	-	25,000
Gunkul Solar Power 4 Co., Ltd.*	-	100.00	-	25,000	-	25,000	-	-	-	25,000
Gunkul Solar Power 5 Co., Ltd.*	-	100.00	-	25,000	-	25,000	-	-	-	25,000
Gunkul Solar Power Co., Ltd.	100.00	-	179,250	-	179,250	-	-	-	179,250	-
BMP Solar Co., Ltd.	100.00	-	980	-	216,938	-	-	-	216,938	-
Total					12,272,402	10,135,282	-	-	12,272,402	10,135,282
									464,654	25,000

None of the Company's subsidiaries are publicly listed and consequently do not have published price quotations.

*In May 2017, the company transferred the Company's shareholding in such companies to Gunkul Solar Power Co., Ltd. instead of paying by cash.

13. Non-controlling interests

The following table summarises the information relating to each of the Group's subsidiaries that has a material non-controlling interest, before any intra-group eliminations:

(in thousand Baht)

	Infinite Alternative Energy Co., Ltd.	
	2017	2016
Non-controlling interest percentage	33%	33%
Current assets	410,247	896,322
Non-current assets	5,134,846	5,337,664
Current liabilities	(247,166)	(602,090)
Non-current liabilities	(3,624,263)	(3,831,952)
Net assets	1,653,664	1,799,944
Carrying amount of non-controlling interest	549,048	598,191
Revenue	712,176	698,530
Profit	206,449	241,554
Other comprehensive income	-	-
Total comprehensive income	206,449	241,554
Profit allocated to non-controlling interest	68,128	79,713
Other comprehensive income allocated to non-controlling interest	68,128	79,713
Cash flows from operating activities	573,177	404,456
Cash flows from investing activities	(2,487)	(1,404,829)
Cash flows from financing activities (dividends to non-controlling interest)	(547,262)	1,000,247
Net increase (decrease) in cash and cash equivalents	23,428	(126)

14. Property, plant and equipment

(in thousand Baht)

	Consolidated financial statements					
	Land	Building improvement and utility system	Machinery and equipment	Furniture, fixtures and office equipment	Vehicles	Assets under construction
Cost						Total
At 1 January 2016	993,463	622,639	4,184,701	50,082	98,575	1,933,161
Additions	6,917	3,040	5,455	7,794	-	6,271,273
Transfers	-	116,648	4,287,717	-	-	(4,405,522)
Disposals	-	(198)	(3,589)	(1,049)	(179)	-
Effect of movements in exchange rates	-	-	(2)	(72)	-	(84,788)
At 31 December 2016 and 1 January 2017	1,000,380	742,129	8,474,282	56,755	98,396	3,714,198
Additions	30,601	1,731	44,847	2,934	4,881	4,619,760
Acquisition of subsidiary (See note 4)	35,000	21,000	320,084	-	-	-
Transfers	-	78,440	226,399	(12)	-	(304,827)
Disposals	-	(2,033)	(9,215)	(9)	(2,701)	-
Effect of movements in exchange rates	-	-	(3)	(86)	-	(141,696)
At 31 December 2017	1,065,981	841,267	9,056,394	59,582	100,576	7,887,524
						19,011,324

(in thousand Baht)

	Consolidated financial statements					
	Land	Building improvement and utility system	Machinery and equipment	Furniture, fixtures and office equipment	Vehicles	Assets under construction
Accumulated depreciation and impairment losses						
At 1 January 2016	-	(55,642)	(117,594)	(33,473)	(29,343)	(322)
Depreciation charge for the year	-	(26,597)	(207,449)	(6,240)	(6,422)	-
Impairment losses	-	-	(2,251)	-	-	-
Transfer	-	-	118	-	-	118
Disposals	-	-	2,784	988	172	-
Effect of movements	-	-	-	-	-	-
in exchange rates	-	-	-	6	-	-
At 31 December 2016						
and 1 January 2017	-	(82,239)	(324,392)	(38,719)	(35,593)	(322)
Depreciation charge for the year	-	(32,534)	(360,890)	(6,850)	(6,565)	-
Impairment losses	-	-	(160)	-	-	-
Transfer	-	4	(4)	-	-	-
Disposals	-	-	246	3	1,638	-
Effect of movements	-	-	-	-	-	-
in exchange rates	-	-	1	49	-	50
At 31 December 2017	-	(114,769)	(685,199)	(45,517)	(40,520)	(322)
Net book value						
At 1 January 2016						
Owned assets	993,463	566,997	4,063,276	16,609	3,273	19,32,839
Assets under finance leases	-	-	3,831	-	65,959	-
	993,463	566,997	4,067,107	16,609	69,232	1,932,839
						7,646,247

(in thousand Baht)

	Consolidated financial statements					
	Land	Building improvement and utility system	Machinery and equipment	Furniture, fixtures and office equipment	Vehicles	Assets under construction
At 31 December 2016 and 1 January 2017						
Owned assets	1,000,380	659,890	8,146,507	18,036	4,486	3,713,876
Assets under finance leases	-	-	3,383	-	58,317	-
	1,000,380	659,890	8,149,890	18,036	62,803	3,713,876
						13,604,875
At 31 December 2017						
Owned assets	1,065,981	726,498	8,368,260	14,065	14,206	7,887,202
Assets under finance leases	-	-	2,935	-	45,850	-
	1,065,981	726,498	8,371,195	14,065	60,056	7,887,202
						18,124,997

(in thousand Baht)

Separate financial statements						
	Building and improvement	Machinery and equipment	Furniture, fixtures and office equipment	Vehicles	Assets under construction	Total
Cost						
At 1 January 2016	32,521	21,050	29,403	74,774	-	157,748
Additions	87	26	4,090	-	-	4,203
Disposals	-	-	(177)	(179)	-	(356)
At 31 December 2016 and 1 January 2017	32,608	21,076	33,316	74,595	-	161,595
Additions	-	26	745	4,876	6,678	12,325
Disposals	-	-	(8)	-	-	(8)
At 31 December 2017	32,608	21,102	34,053	79,471	6,678	173,912
Accumulated depreciation						
At 1 January 2016	(27,828)	(10,422)	(19,310)	(21,360)	-	(78,920)
Depreciation charge for the year	(478)	(3,053)	(3,583)	(5,048)	-	(12,162)
Disposals	-	-	177	172	-	349
At 31 December 2016 and 1 January 2017	(28,306)	(13,475)	(22,716)	(26,236)	-	(90,733)
Depreciation charge for the year	(486)	(3,022)	(3,812)	(5,290)	-	(12,610)
Disposals	-	-	4	-	-	4
At 31 December 2017	(28,792)	(16,497)	(26,524)	(31,526)	-	(103,339)
Net book value						
At 1 January 2016						
Owned assets	4,693	10,628	10,093	3,623	-	29,037
Assets under finance leases	-	-	-	49,791	-	49,791
	4,693	10,628	10,093	53,414	-	78,828

(in thousand Baht)

	Separate financial statements					
	Building and improvement	Machinery and equipment	Furniture, fixtures and office equipment	Vehicles	Assets under construction	Total
At 31 December 2016 and 1 January 2017						
Owned assets	4,302	7,601	10,600	3,297	-	25,800
Assets under finance leases	-	-	-	45,062	-	45,062
	4,302	7,601	10,600	48,359	-	70,862
At 31 December 2017						
Owned assets	3,816	4,605	7,529	12,965	6,678	35,593
Assets under finance leases	-	-	-	34,980	-	34,980
	3,816	4,605	7,529	47,945	6,678	70,573

The gross amount of the Group's fully depreciated plant and equipment that was still in use as at 31 December 2017 amounting to Baht 122.44 million (2016: Baht 112.4 million).

Security

At 31 December 2017, the Group has pledged land, building and machinery with a net book value of Baht 13,529 million as collateral to secure long-term loans (31 December 2016: Baht 9,423.77 million) (See note 18).

Capitalised borrowing costs relating to the power plant under construction amounted to Baht 54.59 million (2016: 107.99 million), with a capitalization rate of 2.62% – 3.11% (2016: 5.8%).

15. Intangible assets and goodwill

(in thousand Baht)

	Consolidated financial statements				
	Software licences	Right to use electrical transmission line	Right to power purchase agreement and right to operate	Goodwill	Total
<i>Cost</i>					
At 1 January 2016	8,500	340,597	2,219,691	390,215	2,959,003
Additions	1,557	144,499	475,426	-	621,482
Transfer	-	-	-	(169,265)	(169,265)
Effect of movements in exchange rates	-	-	(28,023)	-	(28,023)
At 31 December 2016 and 1 January 2017	10,057	485,096	2,667,094	220,950	3,383,197
Additions	1,673	601,398	305,356	-	908,427
Acquisitions of subsidiary (See note 4)	-	-	209,687	49,235	258,922
Reclassification of account	-	-	123,211	(106,709)	16,502
Effect of movements in exchange rates	-	-	(47,593)	-	(47,593)
At 31 December 2017	11,730	1,086,494	3,257,755	163,476	4,519,455
<i>Accumulated amortisation and impairment losses</i>					
At 1 January 2016	(3,832)	(122)	(2,818)	-	(6,772)
Amortisation charge for the year	(301)	(1,913)	(15,617)	-	(17,831)
At 31 December 2016 and at 1 January 2017	(4,133)	(2,035)	(18,435)	-	(24,603)
Amortisation charge for the year	(1,294)	(14,323)	(47,966)	-	(63,583)
At 31 December 2017	(5,427)	(16,358)	(66,401)	-	(88,186)
<i>Net book value</i>					
At 1 January 2016	4,668	340,475	2,216,873	390,215	2,952,231
At 31 December 2016 and at 1 January 2017	5,924	483,061	2,648,659	220,950	3,358,594
At 31 December 2017	6,303	1,070,136	3,191,354	163,476	4,431,269

In 2017, the Company obtained additional information related to business acquisitions in the past and made reallocation between goodwill and power purchase agreements, including relates deferred taxes. The Company's management considered the reclassification is considered necessary to disclose appropriate amounts of the acquired assets. The result of this reallocation has no impact to the Group's financial position or performance for the year ended 31 December 2017 due to the immaterial in nature of the transactions.

Impairment testing for cash-generating units containing goodwill

The recoverable amounts of the power plant asset containing goodwill have been determined using the value in use models. The key assumptions used in the estimation of the recoverable amount included the discount rate which was a post-tax measure estimated based on 25 years government bond rate as a proxy for the risk free rate with debt leveraging of 75% for Solar power station and 70% – 75% for Wind Farm power station. The cash flow projections were prepared using the external information, which included sales volumes, prices, operating costs, inflation rate and long-term growth rates for the period over the remaining of the power purchase agreements.

The key assumptions used in the estimation of the recoverable amount are set out below. The values assigned to the key assumptions represent management's assessment of future trends in the relevant industries and have been based on historical data from both external and internal sources.

	Consolidated		Separate	
	financial statements		financial statements	
	2017	2016	2017	2016
Discount rate-Solar power stations	8.37 – 9.48	6.10 – 8.02	-	-
Discount rate-Wind Farm power stations	9.44 – 9.85	7.09 – 7.58	-	-

(%)

The discount rate was a post-tax measure based on the rate of 25-year government bonds issued by the government in the relevant market and in the same currency as the cash flows, adjusted for a risk premium to reflect both the increased risk of investing in equities generally and the systematic risk of the specific CGU.

Revenue projection

Projections of all revenues for each power plant assets have been made as stated in the Power Purchase Agreements while applying the projections of revenue from external information for the post power purchase agreement periods. Assumptions included tariff from solar power plants and wind farms, inflation and other related factors.

The impairment test has been prepared by the management from information of the contracts entered with the counterparties while forecasting revenue and expenses from the external source and the possible together with systematic parameters and conservative approaches are used for its calculation and no impairment charges are required for goodwill.

Management believes that any reasonably possible change in the key assumptions such as discounted rates, adder and growth rate on which recoverable amount is based would not cause the carrying amount to exceed its recoverable amount.

(in thousand Baht)

	Separate financial statements
	Software licences
Cost	
At 1 January 2016	5,128
Additions	398
At 31 December 2016 and 1 January 2017	5,526
Additions	450
At 31 December 2017	5,976
Accumulated amortisation	
At 1 January 2016	(760)
Amortisation charge for the year	(102)
At 31 December 2016 and at 1 January 2017	(862)
Amortisation charge for the year	(1,022)
At 31 December 2017	(1,884)
Net book value	
At 1 January 2016	4,368
At 31 December 2016 and at 1 January 2017	4,664
At 31 December 2017	4,092

16. Deferred tax

Deferred tax assets and liabilities as at 31 December 2017 and 2016 were as follows:

(in thousand Baht)

	Consolidated financial statements			
	Assets		Liabilities	
	2017	2016	2017	2016
Total	70,579	103,674	(269,445)	(287,271)
Set off of tax	(49,074)	(66,321)	49,074	66,321
Net deferred tax assets (liabilities)	21,505	37,353	(220,371)	(220,950)

(in thousand Baht)

	Separate financial statements			
	Assets		Liabilities	
	2017	2016	2017	2016
Total	11,657	8,741	(2,265)	(2,074)
Set off of tax	(2,265)	(2,074)	2,265	2,074
Net deferred tax assets	9,392	6,667	-	-

Movements in total deferred tax assets and liabilities during the year were as follows:

(in thousand Baht)

	Consolidated financial statements				
	(Charged) / credited to:				At 31 December 2017
	At 1 January 2017	Profit or loss	Other comprehensive income	Acquired in business combination	
Deferred tax assets					
Trade account receivable and other receivables	167	41	-	-	208
Inventories	3,327	452	-	-	3,779
Provisions	5,580	5,724	-	-	11,304
Provisions for employee benefit	4,375	634	3,582	-	8,591
Profit in inventories	3,756	(871)	-	-	2,885
Profit in property, plant and equipment	17,955	(3,921)	-	-	14,034
Property, plant and equipment	-	-	-	27,479	27,479
Loss carry forward	68,514	(66,215)	-	-	2,299
Total	103,674	(64,156)	3,582	27,479	70,579

(in thousand Baht)

	Consolidated financial statements				
	(Charged) / credited to:				At 31 December 2017
	At 1 January 2017	Profit or loss	Other comprehensive income	Acquired in business combination	
Deferred tax liabilities					
Property, plant and equipment	(1,719)	(699)	-	-	(2,418)
Right to power purchase agreement and right to operate (See notes 4 and 15)	(220,950)	-	-	(43,313)	(246,263)
Right to use electrical transmission line	(58,462)	58,462	-	-	-
Finance leases liabilities	(2,603)	(161)	-	-	(2,764)
Long-term loans	(3,537)	3,537	-	-	-
Total	(287,271)	61,139	-	(43,313)	(269,445)
Net	(183,597)	(3,017)	3,582	(15,834)	(198,866)

(in thousand Baht)

	Consolidated financial statements				
	(Charged) / credited to:				At 31 December 2016
	At 1 January 2016	Profit or loss	Other comprehensive income	Acquired in business combination	
Deferred tax assets					
Trade account receivable and other receivables	216	(49)	-	-	167
Inventories	4,235	(908)	-	-	3,327
Provisions	3,881	1,699	-	-	5,580
Provisions for employee benefit	3,818	557	-	-	4,375
Profit in inventories	2,558	1,198	-	-	3,756
Profit in property, plant and equipment	9,288	8,667	-	-	17,955
Loss carry forward	-	68,514	-	-	68,514
Total	23,996	79,678	-	-	103,674

(in thousand Baht)

	Consolidated financial statements				
	(Charged) / credited to:				At 31 December 2016
	At 1 January 2016	Profit or loss	Other comprehensive income	Acquired in business combination	
Deferred tax liabilities					
Property, plant and equipment	(1,160)	(559)	-	-	(1,719)
Advance for land lease	(68,660)	-	-	68,660	-
Right to power purchase agreement and right to operate	(321,555)	-	-	100,605	(220,950)
Right to use electrical transmission line	-	(58,462)	-	-	(58,462)
Finance leases liabilities	(2,541)	(62)	-	-	(2,603)
Long-term loans	(8,117)	4,580	-	-	(3,537)
Total	(402,033)	(54,503)	-	169,265	(287,271)
Net	(378,037)	25,175	-	169,265	(183,597)

(in thousand Baht)

	Separate financial statements			
	(Charged) / credited to:			At 31 December 2017
	At 1 January 2017	Profit or loss	Other comprehensive income	
Deferred tax assets				
Trade account receivable and other receivables	139	40	-	179
Inventories	1,486	(68)	-	1,418
Provisions	4,089	(37)	-	4,052
Provisions for employee benefit	3,027	497	2,484	6,008
Total	8,741	432	2,484	11,657
Deferred tax liabilities				
Finance leases liabilities	(2,074)	(191)	-	(2,265)
Total	(2,074)	(191)	-	(2,265)
Net	6,667	241	2,484	9,392

(in thousand Baht)

	Separate financial statements			
	(Charged) / credited to:			At 31 December 2016
	At 1 January 2016	Profit or loss	Other comprehensive income	
Deferred tax assets				
Trade account receivable and other receivables	179	(40)	-	139
Inventories	2,505	(1,019)	-	1,486
Provisions	1,845	2,244	-	4,089
Provisions for employee benefit	2,570	457	-	3,027
Total	7,099	1,642	-	8,741
Deferred tax liabilities				
Finance leases liabilities	(2,040)	(34)	-	(2,074)
Total	(2,040)	(34)	-	(2,074)
Net	5,059	1,608	-	6,667

Deferred tax assets have not been recognised in respect of the following items:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Temporary differences	984	1,429	-	-
Loss carry forward	83,458	53,320	55,500	-
Total	84,442	54,749	55,500	-

17. Other non-current assets

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Advance payment of machinery for investment	268,345	268,345	268,345	268,345
Retention receivable	82,395	61,762	-	61,762
Prepaid front end fee – undrawdown credit facilities	37,756	56,283	-	-
Others	19,583	18,432	4,726	816
Total	408,079	404,822	273,071	330,923

Compliance with Equity Contribution Agreement

In 2013, the Company entered into a letter of undertaking of equity contribution agreement with a company in Myanmar to set up a joint venture. The joint venture's activities are generating and selling electricity to local's entities according to power purchase agreements whereby the Company will receive interest in the amount of 51% of the agreed operating income. In 2013, the Counterparty had received and the Company had delivered of the machines in amount of Baht 268.34 million which the Company recorded as the advance payment of machinery for investment in the financial statements. This was the partially paid by the Company for its shareholders. However, the counterparty could not transfer the shares of the joint venture to the Company as stipulated in the agreement as at 31 December 2017. If, however, they fails to successfully set up the joint venture pursuant to the agreed capital structure, the counterparty shall compensate all obligation to the Company.

As of 31 December 2017, the management believe that no impairment need to be recognized since no any dispute or defaults payment, however the Company has an obligation to pay addition investment for the joint venture in Myanmar according to the agreement in amount of USD 4.88 million. (2016: USD 4.48 million)

During the year ended 31 December 2017, the Company has received the return on such investment in amount of Baht 41.28 million (2016: Baht 47.98 million) The accumulative return has been obtained until now in amount baht 188.79 million.

18. Interest-bearing liabilities

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Current				
Short-term loans from financial institutions – secured	2,235,507	4,004,111	1,961,404	3,945,416
Less unamortised discount	(3,582)	(23,314)	(3,582)	(23,314)
	2,231,925	3,980,797	1,957,822	3,922,102
Current portion of long-term loans from financial institutions				
– secured	657,578	547,599	–	–
Less unamortised deferred financing fees	(25,262)	(19,253)	–	–
	632,316	528,346	–	–
Current portion of debentures – unsecured	280,000	300,000	280,000	300,000
Current portion of finance lease liabilities	12,401	12,861	9,427	9,205
Total current interest-bearing liabilities	3,156,642	4,822,004	2,247,249	4,231,307
Non-current				
Long-term loans from financial Institutions– secured	9,898,436	6,850,868	–	–
Less unamortised deferred financing fees	(147,737)	(69,094)	–	–
	9,750,699	6,781,774	–	–
Debentures – unsecured	3,765,500	1,780,000	3,765,500	1,780,000
Financial lease liabilities	20,140	29,248	14,230	20,013
Total non-current interest-bearing liabilities	13,536,339	8,591,022	3,779,730	1,800,013
Total	16,692,981	13,413,026	6,026,979	6,031,320

The periods to maturity of interest-bearing liabilities net of deferred financing fees, excluding finance lease liabilities, as at 31 December were as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Within one year	3,144,241	4,809,143	2,237,822	4,222,102
After one year but within five years	7,625,487	3,985,499	3,765,500	1,780,000
After five years	5,890,712	4,576,275	-	-
Total	16,660,440	13,370,917	6,003,322	6,002,102

As at 31 December 2017, The Company has pledged land and buildings of subsidiaries and two directors as collateral against credits that the Company has received from commercial banks of Baht 1,170 million (31 December 2016: U.S. Dollars 100 million and Baht 1,135 million).

As at 31 December 2017, The Company has pledged ordinary shares of certain subsidiaries and a joint venture, together with land and buildings, machinery and equipment and deposits of the said subsidiaries and joint venture, including the right of the Power Purchase Agreement and the right of power plant project agreement in Japan as collateral against the credit facilities those entities received from commercial banks in amount of Baht 18,095.45 million, U.S. Dollars 220 million and JPY 11,773 million (31 December 2016: Baht 13,183.70 million, U.S. Dollars 81 million and JPY 11,773 million).

As at 31 December 2017, The Company has guaranteed for the credit facilities of a subsidiary received from a commercial bank in amount of Baht 24 million (31 December 2016: Baht 24 million).

The currency denomination of interest-bearing liabilities net of deferred financing fees, excluding finance lease liabilities, as at 31 December was as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Thai Baht (THB)	15,696,806	12,745,508	5,648,796	6,018,091
United States Dollar (USD)	445,433	71,362	354,526	13,229
Japanese Yen (JPY)	518,202	554,047	-	-
Total	16,660,441	13,370,917	6,003,322	6,031,320

Interest-bearing liabilities as at 31 December 2017 and 2016 were as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Short-term borrowings	2,231,925	3,980,797	1,957,822	3,922,102
Finance lease liabilities	32,541	42,109	23,657	29,218
Long-term borrowings	10,383,015	7,310,120	-	-
Debentures	4,045,500	2,080,000	4,045,500	2,080,000
Total	16,692,981	13,413,026	6,026,979	6,031,320

As at 31 December 2017, the Group had outstanding short-term loans with local financial institutions amount of Baht 2,231.93 million, which bear interests at the rate of 2.20% to 4.60% per annum (2016: Baht 3,980.8 million which bear interest at the rate of 2.15% to 2.68% per annum).

Finance lease liabilities

Finance lease liabilities as at 31 December were payable as follows.

(in thousand Baht)

	Consolidated financial statements					
	2017			2016		
	Future minimum lease payments	Interest	Present value of minimum lease payments	Future minimum lease payments	Interest	Present value of minimum lease payments
Within one year	13,696	(1,295)	12,401	14,692	(1,831)	12,861
After one year but within five years	21,188	(1,048)	20,140	31,188	(1,940)	29,248
Total	34,884	(2,343)	32,541	45,880	(3,771)	42,109

(in thousand Baht)

	Separate financial statements					
	2017			2016		
	Future minimum lease payments	Interest	Present value of minimum lease payments	Future minimum lease payments	Interest	Present value of minimum lease payments
Within one year	10,384	(957)	9,427	10,479	(1,274)	9,205
After one year but within five years	15,012	(782)	14,230	21,324	(1,311)	20,013
Total	25,396	(1,739)	23,657	31,803	(2,585)	29,218

Long-term borrowings

Details of principal features of the Group's long-term borrowings as at 31 December 2017 and 2016 were as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Subsidiaries :				
1) Baht 3,730 million and Dollars 81 million Loan Facility Agreement at interest BIBOR3M plus a margin, payable in four-month installments commencing in February 2017	3,272,997	2,747,610	-	-
2) Baht 48 million Loan Facility Agreement at interest MLR less a discount, payable in monthly installments commencing in March 2015	4,586	11,438	-	-
3) Baht 4,080 million Loan Facility Agreement at interest THBFIX6M plus a margin, payable in three-months installments commencing in November 2016	3,805,129		3,997,026	--

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
4) JPY 11,007 million Loan Facility Agreement at interest TIBOR 6M plus a margin, payable in six-months installments commencing in December 2018	509,833	545,510	-	-
5) JPY 766 million Loan Facility Agreement 8,369 at interest TIBOR3M plus a margin, payable once in December 2019	8,536	-	-	-
6) Baht 4,522 million and U.S. Dollars 82 million Loan Facility Agreement at interest THBFIX 6M plus a margin, payable in three-months installments commencing in August 2018	2,590,948	-	-	-
7) Baht 207 million Loan Facility Agreement at interest rate 4.43%, payable in three-months installments commencing in September 2017	191,153	-	-	-
Total	10,383,015	7,310,120	-	-

Debentures

Details of the Company's debentures as at 31 December 2017 and 2016 were as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Debentures	4,045,500	2,080,000	4,045,500	2,080,000
Total	4,045,500	2,080,000	4,045,500	2,080,000

As at 31 December 2017, the Company has outstanding balances of issued unsecured, name registered, unsubordinated debentures. The details of issuance of debentures were as below:

Debenture issued on	7 October 2016
Unit and value	1,500,000 units at par value of Baht 1,000 each.
Total debenture value	Baht 1,500 million
Period and maturity date	3 years will mature on 7 October 2019
Interest rate	Fixed rate of 3.50% per annum
Interest payment due	Every 3 months
Debenture issued on	14 October 2016
Unit and value	130,000 units at par value of Baht 1,000 each
Total debenture value	Baht 130 million
Period and maturity date	1 year 11 months 17 days will mature on 1 October 2018
Interest rate	Fixed rate of 3.37% per annum
Interest payment due	Every 3 months
Debenture issued on	21 October 2016
Unit and value	150,000 units at par value of Baht 1,000 each
Total debenture value	Baht 150 million
Period and maturity date	2 years 1 day will mature on 22 October 2018
Interest rate	Fixed rate of 3.37% per annum
Interest payment due	Every 6 months
Debenture issued on	30 May 2017
Unit and value	1,000,000 units at par value of Baht 1,000 each
Total debenture value	Baht 1,000 million
Period and maturity date	3 years 1 day will mature on 30 May 2020
Interest rate	Fixed rate of 3.50% per annum
Interest payment due	Every 6 months
Debenture issued on	20 October 2017
Unit and value	1,265,500 units at par value of Baht 1,000 each
Total debenture value	Baht 1,265.5 million
Period and maturity date	2 years 1 day will mature on 20 October 2019
Interest rate	Fixed rate of 3.50% per annum
Interest payment due	Every 6 months

As at 31 December 2017, the Group and the Company had unutilised credit facilities totalling Baht 5,877.5 million, U.S. Dollars 139 million and JPY 9,984.9 million (2016: Baht 1,722.5 million, U.S. Dollars 81 million and JPY 9,973.9 million).

The Group has to comply with certain conditions in accordance with those agreements including maintaining certain key financial ratios.

19. Trade account payables

(in thousand Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Related parties	4	48,121	1,350	181,819	137,982
Other parties		664,093	524,718	78,179	172,981
Total		712,214	526,068	259,998	310,963

20. Provisions for employee benefits

Movement in the present value of the defined benefit obligations:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
At 1 January	22,642	19,200	15,137	12,851
Include in profit or loss:				
Current service cost	5,327	2,849	3,507	1,892
Interest on obligation	1,157	593	798	394
Other	(1,175)	-	-	-
	5,309	3,442	4,305	2,286
Included in other comprehensive income				
Actuarial loss recognised in the year	17,916	-	12,418	-
	17,916	-	12,418	-
Others				
Benefits paid	(2,225)	-	(1,822)	-
	(2,225)	-	(1,822)	-
At 31 December	43,642	22,642	30,038	15,137

Actuarial loss recognised in other comprehensive income arising from:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Demographic assumption	8,985	-	5,354	-
Financial assumptions	3,485	-	2,206	-
Experience adjustment	5,446	-	4,858	-
Total	17,916	-	12,418	-

Principal actuarial assumptions as at 31 December 2017 and 2016 were the following:

(%)

	Consolidated financial statements and Separate financial statements	
	2017	2016
Discount rate	3.07	3.2
Future salary growth	4.0 - 8.0	4.0 - 8.0
Turnover rate	0.0 - 30.0	0.0 - 30.0

Assumptions regarding future mortality have been based on published statistics and mortality tables.

At 31 December 2017, the weighted-average duration of the defined benefit obligation was 10.9 years (2016 : 13 years)

Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the employee benefit obligations by the amounts shown below.

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
	Increase	Decrease	Increase	Decrease
At 31 December 2017				
Discount rate (1% movement)	(3,907)	4,499	(2,530)	2,896
Future salary growth (1% movement)	4,741	(4,191)	3,072	(2,733)
At 31 December 2016				
Discount rate (1% movement)	(1,611)	1,822	(998)	1,121
Future salary growth (1% movement)	2,195	(1,962)	1,370	(1,233)

Although the analysis does not take account of the full distribution of cash flows expected under the plan, it does provide an approximation of the sensitivity of the assumptions shown.

21. Share capital

(in thousand Baht)

	Par value per share (in Baht)	2017		2016	
		Number	Baht	Number	Baht
		(thousand shares / thousand Baht)			
Authorised					
At 1 January					
- ordinary shares	0.25	6,798,747	1,699,686	-	-
- ordinary shares	1	-	-	1,374,906	1,374,906
Increase of new shares					
- ordinary shares	1	-	-	41,500	41,500
- ordinary shares	0.25	1,133,124	283,281	1,133,123	283,280
Reduction of shares	0.25	(1)	-	-	-
Change in par value from					
- Baht 1 per share to					
Baht 0.25 per share	0.25	-	-	5,665,624	-
At 31 December					
- ordinary shares	0.25	7,931,870	1,982,967	6,798,747	1,699,686

(in thousand Baht)

	Par value	2017		2016	
	per share	Number	Baht	Number	Baht
	(in Baht)	(thousand shares / thousand Baht)			
<i>Issued and paid-up</i>					
At 1 January					
- ordinary shares	0.25	6,358,776	1,589,694	-	-
- ordinary shares	1	-	-	1,283,245	1,283,245
Issue of new shares					
- ordinary shares	1	-	-	41,500	41,500
- ordinary shares	0.25	1,059,789	264,947	1,059,796	264,949
Reduction of shares	0.25	(1)	-	-	-
Exercise of warrants	0.25	56	14	-	-
Change in par value from					
- Baht 1 per share to Baht 0.25 per share	0.25	-	-	5,298,980	-
At 31 December					
- ordinary shares	0.25	7,418,620	1,854,655	6,358,776	1,589,694

On 21 April 2017, the annual general meeting of the shareholders of the Company was unanimously as follows;

- Approved the decrease of the Company's registered capital by cancelling 1,449 at a par value of Baht 0.25 per share of the ordinary shares that were unable to be allocated as stock dividend.
- Approved the increase of the Company's registered capital by issuing ordinary shares in the number of 1,133.12 million shares at a par value of Baht 0.25 per share from the existing registered capital of Baht 1,699.69 million to Baht 1,982.97 million to be reserved for the stock dividend payment and 2nd adjusting right of purchasing for the exercise of warrant No.1 (GUNKUL-W).

On 21 January 2016, the extraordinary general meeting of shareholders was unanimously as follows;

- Approved the increase of the Company's authorised share capital by issuing new ordinary shares to private placement up to 41.50 million shares at Baht 1 per share and
- Approved the allocation of new ordinary share up to 41.50 million shares at price of Baht 1.00 per share to Siam Commercial Bank Public Company Limited, offering private placement at price of Baht 22.84 per share

In February 2016, the Company allocated 41.50 million new ordinary shares to Siam Commercial Bank Public Company Limited. The ordinary shares have a value of Baht 1 per share, and offering selling price at Baht 22.84 per share, totaling of Baht 947.86 million.

On 26 April, 2016, the annual ordinary general meeting of shareholders of 2016 approved to change the par value of the Company's shares from the formerly value of Baht 1.00 per share to be value of Baht 0.25 per share. Thus, the number of Company's registered shares increase from 1,417 million shares to 5,666 million shares and the number of Company's paid-up shares increase from 1,325 million shares to 5,299 million shares. The Company had registered the capital with the Ministry of Commerce on 27 April, 2016.

22. Warrants

During the year ended 31 December 2017, the Company's warrant (GUNKUL-W) was exercised and registered as paid-up share capital in the number of 10,016 units which is equivalent to 56,088 ordinary shares in the amount of Baht 270,400, resulting in an increase of the Company's paid-up share capital of Baht 14,022.

As at 31 December 2017, Warrant (GUNKUL-W) in the number of 91,650,058 units were expired.

23. Additional paid-in capital and reserves

Share premium

Section 51 of the Public Companies Act B.E. 2535 requires companies to set aside share subscription monies received in excess of the par value of the shares issued to a reserve account ("share premium"). Share premium is not available for dividend distribution.

Legal reserve

Section 116 of the Public Companies Act B.E. 2535 requires that a public company shall allocate not less than 5% of its annual net profit, less any accumulated losses brought forward, to a reserve account ("legal reserve"), until this account reaches an amount not less than 10% of the registered authorised capital. The legal reserve is not available for dividend distribution.

Currency translation differences

The currency translation differences account within equity comprises all foreign currency differences arising from the translation of the financial statements of foreign operations and shall be reclassified from equity to profit or loss when the gain or loss on disposal in a foreign operation is recognised.

Fair value changes in available-for-sale investments

The fair value changes in available-for-sale investments account within equity comprises the cumulative net change in the fair value of available-for-sale investments until the investments are derecognised or impaired.

24. Segment information

The Group has four reportable segments, as described below, which are the Group's strategic divisions. The strategic divisions offer different products and services, and are managed separately because they require different technology and marketing strategies. For each of the strategic divisions, the chief operating decision maker (CODM) reviews internal management reports on at least a quarterly basis. The following summary describes the operations in each of the Group's reportable segments.

- Segment 1 Manufacturing and selling of equipments for electrical systems
- Segment 2 Generating and selling electricity
- Segment 3 Construction service
- Segment 4 Maintenance service

Information regarding the results of each reportable segment is included below. Performance is measured based on segment gross profit, as included in the internal management reports that are reviewed by the Group's CODM. Segment gross profit is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries.

Total asset, revenue and results, based on business segments, in the consolidated financial statements for the year ended 31 December 2017 and 2016 were as follows:

(in thousand Baht)

	Manufacturing and selling of equipments for electrical systems	Generating and selling electricity	Construction service	Maintenance service	Eliminations	Total
For the year ended 31 December 2017						
Revenue from sale of goods and rendering of services						
- External	1,201,044	1,535,565	1,962,577	68,089	-	4,767,275
- Inter-segment	465,733	-	32,893	58,775	(557,401)	-
Total	1,666,777	1,535,565	1,995,470	126,864	(557,401)	4,767,275
Segment gross profit	369,014	1,014,609	286,545	62,295	(26,559)	1,705,904
For the year ended 31 December 2016						
Revenue from sale of goods and rendering of services						
- External	1,351,395	867,928	909,497	80,074	-	3,208,894
- Inter-segment	609,737	-	106,011	61,318	(777,066)	-
Total	1,961,132	867,928	1,015,508	141,392	(777,066)	3,208,894
Segment gross profit	444,719	531,321	172,021	81,233	(114,617)	1,114,677
Total assets by segment						
At 31 December 2017	16,298,930	23,885,896	1,504,050	-	(11,311,860)	30,377,016
At 31 December 2016	16,378,880	17,839,121	736,638	-	(9,358,807)	25,595,832

Reconciliation of reportable segment profit or loss

(in thousand Baht)

	Consolidated financial statements	
	2017	2016
Profit or loss		
Total gross profit for reportable segments	1,705,904	1,114,677
Unallocated amounts	(924,567)	(457,927)
Profit before income tax	781,337	656,750

Geographical segments

In presenting information on the basis of geographical segments, segment revenue is based on the geographical location of customers. Segment assets are based on the geographical location of the assets.

Geographical information

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Thailand	4,730,123	3,176,646	25,423,881	21,443,351
Japan	-	-	4,704,158	3,985,922
Other countries	37,152	32,248	248,977	166,559
Total	4,767,275	3,208,894	30,377,016	25,595,832

Major customer

Revenue from three customers of the Group's manufacturing and selling of equipments for electrical systems, domestic electricity generating and selling segment and construction service segment represents approximately Baht 3,809 million of the Group's total revenues (2016:two customers, amount Baht 2,308.46 million).

25. Administrative expenses

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Personnel expense	278,268	231,383	214,192	181,643
Unwind contract fee and bank charge	120,719	18,613	75,513	11,379
Consulting and professional fees	84,370	73,719	30,936	25,490
Others service fee	34,177	29,025	6,856	8,796
Rental fee and insurance premium	33,974	25,702	11,907	11,511
Depreciation and amortisation	22,133	19,594	13,578	11,919
Travelling and delivery expense	17,923	16,708	10,806	10,787
Utility expense and supplies used	13,876	17,697	7,750	9,995
Entertainment expense	9,753	11,960	5,114	10,004
Penalty	6,468	12,241	-	8,872
Others	40,508	36,102	9,303	10,454
Total	662,169	492,744	385,955	300,850

26. Employee benefit expenses

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Management				
Wages and salaries	49,095	46,755	42,712	38,192
Bonus	25,986	28,241	21,924	26,308
Defined contribution plans	4,358	2,791	3,915	2,346
Contribution to defined post-benefit plans	1,898	1,320	1,705	1,221
Others	18,093	9,667	17,965	8,594
	99,430	88,774	88,221	76,661
Other employees				
Wages and salaries	229,678	199,176	136,815	117,189
Bonus	28,577	22,322	17,714	12,531
Defined contribution plans	6,264	6,638	3,772	4,107
Contribution to defined post-benefit plans	4,585	2,116	2,600	1,064
Others	24,505	27,185	12,843	18,209
	293,609	257,437	173,744	153,100
Total	393,039	346,211	261,965	229,761

Defined contribution plans

The defined contribution plans comprise provident funds established by the Group for its employees. Membership to the funds is on a voluntary basis. Contributions are made monthly by the employees at rates ranging from 3% to 15% of their basic salaries and by the Group at rates ranging from 3% to 7% of the employees' basic salaries. The provident funds are registered with the Ministry of Finance as juristic entities and are managed by a licensed Fund Manager.

27. Expenses by nature

The statements of income include an analysis of expenses by function. Expenses by nature disclosed in accordance with the requirements of various TFRS were as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Changes in inventories of finished goods and work in progress	26,024	(36,067)	32,260	(1,082)
Raw materials and consumables used	726,665	873,758	794,550	884,116
Construction cost	1,674,096	834,496	25,745	413,122
Operation and maintenance service fee	38,904	25,208	10,245	18,408
Employee benefit expenses	393,039	346,211	261,965	229,761
Depreciation and amortisation	470,422	264,539	13,632	12,264
Bank charge and others service fee	158,470	48,836	84,914	20,879
Consulting fees	84,837	76,403	30,936	25,490
Utility expense and supplies used	30,155	34,597	9,281	12,259
Rental fee	30,058	21,857	9,861	9,883
Insurance premium	23,264	28,368	2,456	1,642
Others	118,541	109,556	42,681	52,384
Total cost of sales, cost of sale of electricity, cost of rendering of services, cost of construction services, distribution costs and administrative expenses	3,774,475	2,627,762	1,318,526	1,679,126

28. Finance costs

(in thousand Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Interest expense					
Related party	4	-	-	1,153	-
Other parties		500,778	393,112	92,670	105,458
Total		500,778	393,112	93,823	105,458
Debenture		94,903	25,115	94,903	25,115
Amortisation of financing fees		23,938	16,887	-	-
Others		3,709	2,679	2,739	2,190
Total		623,328	437,793	191,465	132,763
<i>Less: amounts included in the cost of qualifying assets:</i>					
- Property, plant and equipment under construction	14	(54,593)	(107,993)	-	-
		(54,593)	(107,993)	-	-
Net		568,735	329,800	191,465	132,763

29. Income tax expense

Income tax recognised in profit or loss

(in thousand Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Current tax expense					
Current year		66,763	66,555	-	28,233
Under (over) provided in prior years		-	-	-	-
		66,763	66,555	-	28,233
Deferred tax expense					
Movements in temporary differences	16	3,017	(25,175)	(241)	(1,608)
Total income tax expense		69,780	41,380	(241)	26,625

Reconciliation of effective tax rate

(in thousand Baht)

	Consolidated financial statements			
	2017		2016	
	Rate		Rate	
	(%)	(in thousand Baht)	(%)	(in thousand Baht)
Profit before income tax expense		781,337		656,750
Income tax using the Thai corporation tax rate	20.0	156,268	20.0	131,350
Income not subject to tax		(171,342)		(130,178)
Expenses not deductible for tax purposes		6,065		21,366
Addition deductible expense for tax purpose		(2,221)		(11,510)
Current year losses for which no deferred tax asset was recognised		68,525		30,799
Effect of different tax rates in foreign jurisdictions		12,485		(447)
Total	8.9	69,780	6.3	41,380

(in thousand Baht)

	Separate financial statements			
	2017		2016	
	Rate		Rate	
	(%)	(in thousand Baht)	(%)	(in thousand Baht)
Profit before income tax expense		353,769		361,606
Income tax using the Thai corporation tax rate	20	70,754	20	72,321
Income not subject to tax		(128,602)		(46,611)
Expenses not deductible for tax purposes		2,107		915
Current year losses for which no deferred tax asset was recognised		55,500		-
Total	0.1	(241)	7.3	26,625

Income tax reduction

Revenue Code Amendment Act No. 42 B.E. 2559 dated 3 March 2016 grants a reduction of the corporate income tax rate to 20% of net taxable profit for accounting periods which begin on or after 1 January 2016.

30. Promotional privileges

By virtue of the provisions of the Industrial Investment Promotion Act of B.E. 2520, the subsidiaries have been granted privileges by the Board of Investment relating to generate electricity from wind energy, solar energy and solar rooftop energy. The privileges granted include:

- (a) exemption from payment of import duty on machinery and equipment approved by the Board;
- (b) exemption from payment of income tax for certain operations for a period of 8 years from the date on which the income is first derived from such operation;
- (c) a 50% reduction in the normal income tax rate on the net profit derived from certain operations for a period of five years, commencing from the expiry date in (b) above.

As promoted companies, the subsidiaries must comply with certain terms and conditions prescribed in the promotional certificates.

Summary of revenue from promoted and non-promoted businesses:

(in thousand Baht)

	Consolidated financial statements					
	2017			2016		
	Promoted busi- nesses	Non- Promoted businesses	Total	Promoted busi- nesses	Non- Promoted businesses	Total
Export sales	-	37,152	37,152	-	32,248	32,248
Local sales	1,533,227	3,754,297	5,287,524	778,978	3,174,734	3,953,712
Eliminations	-	(557,401)	(557,401)	-	(777,066)	(777,066)
Total revenue			4,767,275			3,008,894

31. Earnings per share

The calculations of basic earnings per share for the years ended 31 December 2017 and 2016 were based on the profit for the year attributable to ordinary shareholders of the Company and the weighted average number of ordinary shares outstanding during the year, after adjusting the number of ordinary shares in proportion to the change in the number of shares as a result of the distribution of stock dividend disclosed in note 21 and 32. For the benefit of comparasion, the number of ordinary shares used in the calculations of earnings per share for the year ended 31 December 2016 are adjusted as if such change had occurred at the beginning of the earliest reporting period as follows:

(in thousand Baht/ thousand shares)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Profit for the period attributable to ordinary shareholders of the Company	635,363	537,717	354,011	334,981
Number of ordinary shares outstanding as at 1 January				
- ordinary shares of Baht 0.25 each	7,418,565	7,252,565	7,418,565	7,252,565
Effect of shares issue during the year	15	140,601	15	140,601
Weighted average number of ordinary shares outstanding	7,418,580	7,393,166	7,418,580	7,393,166
Earnings per share (basic) (in Baht)	0.09	0.07	0.05	0.05

32. Dividend

At the annual general meeting of the shareholders of the Company held on 21 April 2017, the shareholders approved the profit allocation from the results of operations for the year ended 31 December 2016 for a legal reserve of Baht 17 million and cash dividend payment at the rate of Baht 0.040 per share, amounting to Baht 254 million. In addition, the shareholders approved the appropriation of profit from the results of operations for the year ended 31 December 2014 and 2015 respectively to be stock dividend payment at the par value of Baht 0.25 to the Company's existing shareholders at the ratio of 6 existing shares to receive stock of 1 share equivalent to the dividend of Baht 0.0417 per share, amounting to Baht 265 million. The dividend was paid to shareholders during 2017.

At the annual general meeting of the shareholders of the Company held on 26 April 2016, the shareholders approved the incremental of the legal reserve amounting to Baht 13 million and the appropriation of profit from the results of operations for the year ended 31 December 2015 to be stock dividend payment at the par value of Baht 0.25 to the Company's existing shareholders at the ratio of 5 existing shares to receive stock of 1 share equivalent to the dividend of Baht 0.05 per share, amounting to Baht 265 million. And the company paid cash dividend at the rate of Baht 0.0625 per share, amounting to Baht 331 million. The dividend was paid to shareholders during 2016.

33. Financial instruments

Financial risk management policies

The Group is exposed to normal business risks from changes in market interest rates and currency exchange rates and from non-performance of contractual obligations by counterparties. The Group does not hold or issue derivative financial instruments for speculative or trading purposes.

Risk management is integral to the whole business of the Group. The Group has a system of controls in place to create an acceptable balance between the cost of risks occurring and the cost of managing the risks. The management continually monitors the Group's risk management process to ensure that an appropriate balance between risk and control is achieved.

Capital management

The Board of Directors' policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Board monitors the return on capital, which the Group defines as result from operating activities divided by total shareholders' equity, excluding non-controlling interests and also monitors the level of dividends to ordinary shareholders.

Interest rate risk

Interest rate risk is the risk that future movements in market interest rates will affect the results of the Group's operations and its cash flows because loan interest rates are mainly floated. The Group mitigates this risk by ensuring that the majority of its borrowings are at fixed interest rates and uses derivative financial instruments, principally interest rate swaps, to manage exposure to fluctuations in interest rates on specific borrowings.

The effective interest rates of loans from financial institutions and debentures as at 31 December 2017 and 2016 and the periods in which loans from financial institutions and debentures mature are disclosed in note 18.

Foreign currency risk

The Group is exposed to foreign currency risk relating to purchases material, asset and have long-term loan which are denominated in foreign currencies. The Group primarily utilizes forward foreign exchange contracts and foreign exchange option contract with maturities of less than one year to hedge such foreign currency. At 31 December, the Group and the Company were exposed to foreign currency risk in respect of financial assets and liabilities denominated in the following currencies:

(in thousand Baht)

	Note	Consolidated		Separate	
		financial statements		financial statements	
		2017	2016	2017	2016
United States Dollars					
Cash and cash equivalents		123,989	105,547	36,642	105,547
Trade accounts receivable		512	7,106	512	7,106
Other receivables		3,768	12,942	3,644	12,942
Interest-bearing liabilities	18	(93,311)	(72,052)	(2,404)	(13,357)
Trade accounts payable		(118,100)	(86,207)	(17,459)	(311,531)
Other payables		(1,685)	(1,012)	-	(1,215)
Payable for purchases of assets		(1,078,182)	-	-	-
Retention payables		(324,397)	(265,333)	-	-
		(1,487,406)	(299,009)	20,935	(200,508)
Japanese Yen					
Cash and cash equivalents		543,469	253,987	-	253,987
Other receivables		405,678	-	-	-
Other non-current asset		42,594	-	-	-
Interest-bearing liabilities	18	(518,202)	(554,047)	-	-
Trade accounts payable		(599)	(108)	(599)	(108)
Other payables		(11,227)	-	-	-
Other non-current liabilities		(262)	-	-	-
		461,451	(300,168)	(599)	253,879
Others currency					
Cash and cash equivalents		1,807	122	279	119
Other receivables		147	-	-	-
Other non-current asset		796	-	-	-
Trade accounts payable		(174)	(434)	(174)	(11)
Other payables		(1,139)	-	(76)	-
		1,437	(312)	29	108
Gross balance sheet exposure		(1,024,518)	(599,489)	20,365	(53,479)
Estimated forecast payable for contracts purchases of assets		(2,740,494)	(8,613,488)	-	-
Gross exposure		(3,675,012)	(9,212,977)	20,365	(53,479)
Foreign currency forwards		213,534	471,832	213,534	383,420
Foreign exchange option contracts		11,548,500	4,375,000	11,548,500	4,375,000
Net exposure		7,997,022	(4,366,145)	11,782,399	4,704,941

Credit risk

Credit risk is the potential financial loss resulting from the failure of a customer or counterparty to settle its financial and contractual obligations to the Group as and when they fall due. The Group has concentrations of credit risk since most of its revenues are contracted under long-term agreements with a small number of parties. However counterparties are generally government authorities and large public or private corporations and the risk perceived is low.

Liquidity risk

The Group monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's operations and to mitigate the effects of fluctuations in cash flows.

Carrying amount and fair values

The fair value of current portion of financial assets and liabilities are taken to approximate the carrying value due to the relatively short-term maturity of these financial instruments.

The fair value of long-term loans and borrowings carrying a floating rate, which is considered to be market rate, are taken to approximate their fair values.

Other financial assets and liabilities not stated above had the fair and carrying value as at 31 December 2017 and 2016 were as following:

(in thousand Baht)

	Carrying amount	Consolidated financial statements			
		Fair value			
		Level 1	Level 2	Level 3	Total
31 December 2017					
<i>Financial assets and Financial liabilities measured at fair value</i>					
Equity securities available-for-sale	605,020	-	605,020	-	605,020
Foreign currency forward contracts	(3,478)	-	(3,478)	-	(3,478)
<i>Financial liabilities not measured at fair value</i>					
Long-term loans from financial institutions	191,153	-	173,550	-	173,55
Debentures	4,045,500	-	4,060,788	-	4,060,788
Foreign exchange option contracts	-	-	666,520	-	666,520
Interest rate swap contracts	-	-	217,829	-	217,829

(in thousand Baht)

	Carrying amount	Consolidated financial statements			
		Fair value			
		Level 1	Level 2	Level 3	Total
31 December 2016					
<i>Financial assets and Financial liabilities measured at fair value</i>					
Foreign currency forward contracts	6,675	-	6,675	-	6,675
<i>Financial liabilities not measured at fair value</i>					
Debentures	2,080,000	-	2,073,030	-	2,073,030
Foreign exchange option contracts	-	-	33,372	-	33,372
Interest rate swap contracts	-	-	75,394	-	75,394

Measurement of fair values

Valuation techniques and significant unobservable inputs

The following tables show the valuation techniques used in measuring Level 2 fair values, as well as the significant unobservable inputs used.

Financial instruments not measured at fair value

Type	Valuation technique
Equity securities -available-for-sale securities	Net asset as the reporting date.
Debentures	A valuation technique incorporating observable market data which is adjusted with counterparty credit risk (excluding own credit risk) and other risks to reflect true economic value.
Forward exchange contracts/ Interest rate swap contracts	<i>Market comparison technique:</i> The fair values are based on broker quotes. Similar contracts are traded in an active market and the quotes reflect the actual transactions in similar instruments.
Foreign exchange option contracts	Valuation at their current market values, which are obtained from quoted market prices or other widely accepted valuation techniques and guideline.
Long-term loans	Discounted cash flow

34. Commitments with non-related parties

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Capital commitment				
Design, construction and installment for project under construction	2,320,005	12,696,014	-	-
Total	2,320,005	12,696,014	-	-
Non-cancellable operating lease commitments				
Within one year	4,192	7,545	-	-
After one year but within five years	44,592	30,190	-	-
After five years	205,720	149,937	-	-
Total	254,504	187,672	-	-

Forward Foreign Exchange Contracts

The Group had forward foreign exchange contracts outstanding as at 31 December 2017 of U.S. Dollars 6.54 million equivalents to Baht 213.53 million. The maturity date in January 2018 (2016: U.S. Dollars 15.72 million equivalents to Baht 566 million).

Interest Rate Swap Agreements

The Group entered into interest rate swap agreements for loan from bank with a floating interest rate of THB BIBOR 3M + 2.65% per annum, to a fixed coupon rate of 5.80% per annum, which pays every 3 months starting on 18 May 2015 until 30 April 2021.

The Group entered into interest rate swap agreements for loan from bank with a floating interest rate of THB FIXED 6M +2.7% per annum, to a fixed coupon rate of 4.96% per annum, which pays every 3 months starting on 25 August 2016 until 29 July 2026.

The Group entered into interest rate swap agreements for loan from bank with a floating interest rate of TIBOR 6M +1.3% per annum, to a fixed coupon rate of 2.125% per annum, which pays every 6 months starting on 22 December 2016 until 30 June 2036.

Foreign exchange option contract

The Group had the Foreign exchange option contract as at 31 December 2017 of U.S. Dollars 365 million which maturity less than one year *(2016: U.S. Dollars 15.72 million)*.

Power Purchase Agreement

The Group has the power purchase agreements for 25 years, 5 years and renew 5 years automatically with the Electricity Generating Authority of Thailand, Provincial Electricity Authority and Metropolitan Electricity Authority whereby the Group will supply the electric energy at the agreed quantity and price. The Group must comply with conditions and restrictions provided for in the agreement.

Letters of Guarantee

The Group and the Company had commitment to local banks and Thailand office of foreign financial institutions for letter of guarantee issued for sales and purchase of electricity, electricity used, purchase of machinery and rental agreements to certain government sector and private sectors. As at 31 December 2017, the Group had outstanding commitments being amount of Baht 1,206.57 million and U.S. Dollars 31.08 *(2016: Baht 1,060.03 million and U.S. Dollars 0.76 million)*.

Consultant Agreement

The Group was committed the consultant fee to prepare environmental impact reports, consultant fee of project development and engineering feasibility studies. As at 31 December 2017, the Group had outstanding commitments being amount of Baht 7.44 million, U.S. Dollars 0.37 million and JPY 1,052.70 million *(2016: Baht 34.16 million, U.S. Dollars 6,000 and JPY 1,056.50 million)*.

Service Agreement

The Group had obligation commitment in operation and maintenance service of power plant contract in 6 contracts in amount of Baht 155.79 million, EUR 12.00 million, U.S. Dollars 25.37 million and JPY 2,189.24 million. As at 31 December 2017, the Group outstanding obligation remains at Baht 82.09 million, EUR 9.60 million, U.S. Dollars 22.83 million and JPY 2,189.24 million *(2016: Baht 8.47 million, EUR 12.00 million and JPY 2,189.24 million)*.

Long-Term Land Lease Agreement

The Group had non-cancellable land lease agreements with Japanese companies, using for power plant operation for the period of 25 years commencing from commercial operation date. As at 31 December 2017, the Group had outstanding commitments being amount of JPY 894.4 million *(2016: JPY 914.10 million)*.

35. Events after the reporting period

At the Board of Directors' meeting of the Company held on 21 February 2018, the Board approved to submit for approval at the annual general meeting of the shareholders of the Company on 20 April 2018.

- The appropriation of the profit from the results of operations for the year ended 31 December 2016 and 2015 after 20% tax rate to be dividends of Baht 0.045 per share. The balance of dividend is subject to the approval of the shareholders at the annual general meeting on 20 April 2018.
- The decrease of the Company's registered capital in the amount of Baht 128.31 million from the existing registered capital of Baht 1,982.97 million to Baht 1,854.66 million, by cancelling the unissued registered ordinary shares in the amount of 513.25 million shares at a par value of Baht 0.25 per share.
- Approved the investing in solar ground in Terengganu, Malaysia with the capacity of 29.99 MW. Total amount of investment does not exceed Baht 1,144.4 million.

36. Reclassification of accounts

Certain accounts in the 2016 financial statements, which are included in the 2017 financial statements for comparative purposes, have been reclassified to conform to the presentation in the 2017 financial statements as follows:

(in thousand Baht)

	2016					
	Consolidated			Separate		
	financial statements			financial statements		
	Before reclass.	Reclass.	After reclass.	Before reclass.	Reclass.	After reclass.
Statement of financial position as at 31 December 2016						
Trade and other receivable						
- related parties	146,250	(146,250)	-	120,165	(120,165)	-
Trade and other receivable						
- third parties	797,561	(797,561)	-	483,256	(483,256)	-
Trade accounts receivable	-	730,122	730,122	-	472,975	472,975
Deposit for purchase goods	16,709	(16,709)	-	1,419	(1,419)	-

(in thousand Baht)

	2016					
	Consolidated			Separate		
	financial statements			financial statements		
	Before reclass.	Reclass.	After reclass.	Before reclass.	Reclass.	After reclass.
Retention receivables	224	(224)	-	-	-	-
Advance for currency receivable	6,675	(6,675)	-	6,611	(6,611)	-
Other receivables	-	237,297	237,297	-	138,476	138,476
Construction in progress	93	(93)	-	-	-	-
Inventories	402,244	93	402,337	-	-	-
Retention receivables	61,762	(61,762)	-	61,762	(61,762)	-
Prepaid front end fee	56,283	(56,283)	-	-	-	-
Advance payment of machinery for investment	268,345	(268,345)	-	268,345	(268,345)	-
Other non-current assets	18,432	386,390	404,822	816	330,107	330,923
Deferred tax assets	103,673	(66,320)	37,353	-	-	-
Deferred tax liabilities	287,270	66,320	220,950	-	-	-
Trade and other payable - related parties	26,990	(26,990)	-	142,590	(142,590)	-
Trade and other payable - third parties	688,428	(688,428)	-	231,525	(231,525)	-
Trade accounts payable	-	526,068	526,068	-	310,963	310,963
Deposit for purchase of goods	7,649	(7,649)	-	2,427	(2,427)	-
Other payables	-	196,999	196,999	-	65,579	65,579
Employee benefits obligation	22,642	(22,641)	-	15,137	(15,137)	-
Provisions for employee benefits	-	22,641	-	-	15,137	-
		-			-	

(in thousand Baht)

	2016					
	Consolidated			Separate		
	financial statements			financial statements		
	Before reclass.	Reclass.	After reclass.	Before reclass.	Reclass.	After reclass.
Statement of						
comprehensive income						
For the year ended						
31 December 2016						
Sale of goods	2,130,372	(778,978)	1,351,394	-	-	-
Revenue from sale of electricity	-	778,978	778,978	-	-	-
Cost of sale	1,208,193	(277,932)	930,261	-	-	-
Cost of sale of electricity	-	277,932	277,932	-	-	-
Benefit from advance for machinery for investments	47,980	(47,980)	-	47,980	(47,980)	-
Others income	25,734	47,980	73,714	19,131	47,980	67,111
		-			-	

The reclassifications have been made in the opinion of management, the new classification is more appropriate.

2

Part 2

Corporate Social Responsibility Report 2017

1. Policy in Corporate Social Responsibility for Sustainability Management

2. Business Operations with Stakeholders and Sustainable Management

- Employees
- Business Partners
- Clients
- Competitors
- Creditors
- Community / Society
- Shareholders and Investors
- Press
- Government Agencies

3. Report Preparation

- 3.1 Scope of Report
- 3.2 Materiality Effects to Business Sustainability

4. Human Resources Development: Enhancing “Smart People”

- 4.1 Personnel Development to Support Business Growth
- 4.2 Capacity Development and Career Advancement
- 4.3 Promoting Good Practices, Participation and Social Contribution among Employees



5. **"Energy Business": Alternative Energy Innovation Development**

- 5.1 Good Corporate Governance Policy
- 5.2 Being of Fair Enterprise Practices
- 5.3 Anti-Corruption Practices
- 5.4 Taxation Procedure
- 5.5 Risk Management
- 5.6 Labor and Human Rights Practices
- 5.7 Standards of Safety, Occupational Health and Environment
- 5.8 Employee Engagement with Welfare and Productivity Enhancement Activities
- 5.9 Responsibility for Consumers
- 5.10 Supply Chain Management
- 5.11 Environmental Management and Energy Conservation
- 5.12 Innovation in the Business Process for Sustainability

6. **Community and Social Development: Sustainably Creating and Developing Good Things for Society: "Action Social"**

- 6.1 Creating Educational Opportunities for Students from Schools Surrounding Local Communities and Employees' Children
- 6.2 Providing Financial Support and Improving the Condition of Educational Institutes and Communities
- 6.3 Preserving Buddhism and Cultural Heritage
- 6.4 Opening Renewable Power Plants as a Learning Source for Educational Institutes and Surrounding Communities
- 6.5 Promotion of Community Participation and Community Income Generation

7. **Achievement**

1. Policy in Corporate Social Responsibility for Sustainability Management

Gunkul Engineering Public Company Limited (hereinafter referred to as “GUNKUL”), concentrates in reporting the advancement and operations performance which is relevant both directly and indirectly to all groups of stakeholders through the Corporate Social Responsibility or Sustainability Report which was presented on a yearly basis.

The Company strives to well manage the CSR together with its business operations in order to become “Thailand’s leading manufacturer and provider of equipment for electrical systems and energy saving products that meet and satisfy customers’ needs and concurrently maximize stakeholders’ return”. Moreover, the Company is strongly confident that the success in business operations does not derive only from management and human resources development, but along with the appropriate equilibrium in 3 dimensions of CSR which consist of economic, social and environment under the good corporate governance in order to reach the sustainable business operations as well as create a well-being society to Thailand. GUNKUL’s CSR policies and sustainable development are as follows:

Smart Energy in Action

พลังงานสร้างสรรค์ คิดล้ำ ทำจริง

Smart People เป็นคนเก่งและคนดี

Energy Business

สร้างนวัตกรรม และพัฒนาธุรกิจพลังงานทดแทน

Action Social

สร้างสรรค์พัฒนาสิ่งที่ดีสู่สังคมอย่างยั่งยืน

1. **Human resources development:** for becoming “Smart People” to enhance career advancement based on professional ethics and caring for environmental safety, sharing work system with skill training and on the job learning so that all employees will be of expected qualification in response to well-balanced stakeholders’ demand with happy living in the society at large.
2. **Business development:** with innovation of alternative power the “Energy Business” is quality products based on good governance to top up existing electrical equipment by alternative energy production from solar and wind energy to enhance environment friendly approaches and trust among stakeholders with required quality and safety standards and reduction of environmental impacts.
3. **Social and community responsibility by “Action Social”:** this is to create good relationship and inter-dependency as being “good neighbor” with the surrounding community while enhancing people participation to follow up any possible apportion impacts toward environment conditions. The Company also focusses on knowledges and experiences sharing among relevant persons and agencies to promote appropriate localized development.

According the Company has communicated this policy to all employees so that they shall strictly follow this rule under supervision of the Executive Committee.

2. Business Operations with Stakeholders and Sustainable Management

The Company recognizes the importance of conducting business with regard to stakeholders, with adherence to the principles of fair competition and fairness under the legal framework and the code of conduct by definition Stakeholders are individuals, groups or organizations that can make an impact and / or affected and benefits. It must also be responsible for the business or activities related to the organization by creating acceptance for stakeholders in order to share and achieve business results both directly and indirectly.

The Company conducts sustainable management with recognition of how stakeholders are vital to drive for business prosperity based on our announced vision and mission. We have categorized stakeholders with required participation and balancing economic, social and –environmental factors according to our business goals and direction as follows.

Vision

“To become the leading producer of electricity from renewable energy, including the manufacturer and provider of equipment for energy system and energy saving products that enhance maximum needs and satisfaction among clients and stakeholders”

Mission	1. Electricity Generation from Renewable Energy	- Constructing a standardized and effective renewable energy power plant with great concern to the society and environment.
	2. Distribution	- Providing electrical components and distribution channels with efficient and complete service to customers.
	3. Technology	- Developing and applying new technologies in production process for efficient performance and cost saving.
	4. Remuneration	- Generating the highest returns to shareholders and all parties concerned.
	5. Human Resources	- Developing and increasing employees' capabilities for international competition.
	6. Management	- Organizing management structure to be incorporated with good corporate governance.

Smart Energy in Action

Smart People

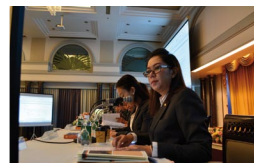
To be smart and good people

Energy Business

To Develop innovation and alternative energy sources

Action Social

To create and develop social responsibility for sustainability



The Company provides various communication channels among each group of stakeholders which shall enable the Company to understand the stakeholders' expectations. Management procedures, communication channels, operational guidelines together with process revision shall be performed continuously in order to fulfill the Company's mission and endure the organizational growth. The Company's stakeholders can be categorized as follows:

Stakeholders	Expectation	Procedure / Communication Channel	Challenge / Guideline
1. Employees	<ul style="list-style-type: none"> Fair salary and benefit other than stated by the laws Equal opportunity in competence development Promote advancement and security Provide favorable working environment Fair and equal treatment Promote engagement between families, employees and organizations 	<ul style="list-style-type: none"> HR Committee Meeting Welfare Committee GUNKUL Training Plan Employee opinion survey Comments and suggestions channels Intranet, Line and Announcement Board Daily Morning Meeting, Walking Public Relations Create a corporate welfare policy that reinforces organizational commitment 	<ul style="list-style-type: none"> Fair treatment by using fair and measurable performance evaluation process Develop / improve proper benefit arrangement Concern in human rights, hygienic and safety in workplace Develop and maintain valuable employees as well as promote employee ethics Engage employees, families and organizations through child welfare scholarships. Benefits from financial institutions
2. Business Partners	<ul style="list-style-type: none"> Reasonable price with price estimation Fair process in purchasing, requisition and bidding Instruct and exchange of information, technology and experience Cooperate in resources management Respect in rights and intellectual property of concerned parties 	<ul style="list-style-type: none"> Organize meeting / discussion for mutual agreement and objective Arrange for expertise and the Company's team to transmit specific business aspect Visit the business partners to learn about their comments and suggestions 	<ul style="list-style-type: none"> Treat all business partners fairly and equally Stand firmly on contract agreements as well as business ethics Inform business partners of process in payment, purchasing, requisition, selection and appraisal. Arrange audit report, follow up and conclude the results for all parties concerned Organize strict control system in confidential information to prevent misuse or illegal disclosure

Stakeholders	Expectation	Procedure / Communication Channel	Challenge / Guideline
3. Clients	<ul style="list-style-type: none"> • Quality / standardized products and service with fair and competitive price • Product and service delivery under agreed condition and in timeframe • Offer before sales service such as product usage manual and after sales service as well as other assistance 	<ul style="list-style-type: none"> • Customer satisfaction survey • Customer visit • Create company website www.GUNKUL.com • Comments and Complaints Center • Print necessary information on product label or organize a seminar upon request • Arrange product booth for sales promotion with recommendations 	<ul style="list-style-type: none"> • Offer quality product and service with proper, safety and competitive price • Create guarantee process in all supply chain from raw materials to customer's hand • Inspect and control the production and service process as certified and recommended • Continuously research and develop quality product with competitive price • Well-communicate and strictly comply with agreements signed with customers such as product delivery, service and etc.
4. Competitors	<ul style="list-style-type: none"> • Operate business fairly and ethically • Compete fairly according to the laws 	<ul style="list-style-type: none"> • Open for press and public forum • Join in Central Business Agency 	<ul style="list-style-type: none"> • Treat competitors fairly and legally
5. Creditors	<ul style="list-style-type: none"> • Punctual repayment with agreed interest rate • Arrange proper Risk Management 	<ul style="list-style-type: none"> • Set meeting for mutual agreement 	<ul style="list-style-type: none"> • Set strict debt control with great concern to the Company's reputation
6. Community / Society	<ul style="list-style-type: none"> • Supervise the affect on environment and safety of community • Coordinate in economic, social and environmental development of community • Support the community's activities 	<ul style="list-style-type: none"> • Organize public hearing before the business operations to enhance the community with necessary knowledge and impact together with arranging a community satisfaction survey • Listen to comments, suggestions and complaints • Continuously support the community's activities • Cooperate with the government sectors in complying with all rules, regulations and public benefit activities 	<ul style="list-style-type: none"> • Operate business ethically • Coordinate with the community in education, cultural and local festivals conservation and restoration projects • Follow up and preserve safety and quality of environment • Support employees in sharing their knowledge and capabilities to the community such as being electrical volunteer and joining the community's activities

Stakeholders	Expectation	Procedure / Communication Channel	Challenge / Guideline
7. Shareholders and investors	<ul style="list-style-type: none"> • Remuneration (dividend and capital gain) and company growth • Success business operations • Operate business in accordance with the good corporate governance • Disclose correct, complete and timely information 	<ul style="list-style-type: none"> • Submit quarterly and annual report • Arrange Annual General Meeting / Extraordinary General Meeting of Shareholders • Communicate information and comments through various channels • Appoint Company Secretary and Investor Relations to be the contact center for shareholders and investors • Arrange quarterly Opportunity Day for shareholders and investors at SET • Arrange product booth • Organize visit to alternative energy power plant 	<ul style="list-style-type: none"> • Gain investment returns from transparent operation and continuous business growth • Treat shareholders according to the Company's policies as well as SEC and SET rules and regulations
8. Press	<ul style="list-style-type: none"> • Receive correct, fair, beneficial and timely information 	<ul style="list-style-type: none"> • Arrange regular communication activities to support the Company's good image by presenting beneficial information through various channels such as press conference, special interview, company visit and press releases • Support press activities which are beneficial to society and country 	<ul style="list-style-type: none"> • Set high priority to news and update report by focusing on the correct and useful and timely information • Arrange regular activities to promote relationship with press.
9. Government Agencies	<ul style="list-style-type: none"> • Strictly abide to the related laws and regulations • Act against the demand for benefit and corruption • Be responsible for social and environment 	<ul style="list-style-type: none"> • Meeting • Annual Report • Welcome visit from government sectors • Submit correct and timely information to related parties 	<ul style="list-style-type: none"> • Conduct fair and transparent business as per the good corporate governance, related to laws, rules and regulations • Cooperate in both academic aspect and activity support to the government sectors • Control the environmental condition as prescribed by the laws

3. Report Preparation

3.1 Scope of Report

The Company concentrates on how to submit sustainable management report of GUNKUL PCL. and the subsidiaries for 2017 as of 1 January 2017 to 31 December 2017, covering economic, social and environment strategies to achieve our vision and mission based on good governance under proper supervision. The report include risk management relating to development of smart people, added business value and available opportunity for sustainable, localized community development.

The Corporate Social Responsibility Report or Sustainability Report 2017 reports the performance of GUNKUL and subsidiaries as the following:

Business Category	Company name	
GUNKUL Engineering PCL.		
• Electrical equipment	G.K. Assembly Company Limited	GKA
	G.K. Power Products Company Limited	GKP
• LED production and distribution	Gunkul LED Lighting Company Limited	GUNKUL-LED
• Electrical equipment and systems for public sectors.	K.N.P. Supply Company Limited	KNP
• Power plant construction with systems and equipment.	Gunkul Power Development Company Limited	GPD
• Production and distribution of alternative energy (solar energy)	Gunkul Chubu Powergen Company Limited	GCPG
	Gunkul Solar Power 2 Company Limited	GSP2
	Gunkul Solar Roof 1 Company Limited	GSR1
	Rang Ngern Solution Company Limited	RNS
	N.K. Power Solar Company Limited	NKP
• Production and distribution. od alternative energy (wind power)	Wind Energy Development Company Limited	WED
	Greenovation Power Company Limited	GNP
	Bright Green Power Company Limited	BGP
	Korat Wind Energy Company Limited	KWE

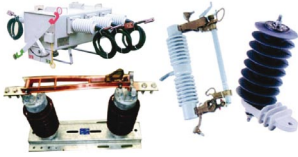
3.2 Materiality Effects to Business Sustainability

In 2016 the sustainable Management Committee identified risk assessment provided by the Risk Management Committee based on Common Risk Matrix comparing to the annual business goals and analysis of stakeholders' expectation through various channels i.e. community public hearing forum, meeting with local community, complaints, questionnaires on consumers satisfaction, employees and supplier visit. Issues that impact sustainable management in line with all divisions / organization matters relating to stakeholders are shower in the below table.

1. Economic issues	2. Social Issues	3. Environment issues
1. Good Corporate Governance	1. Competency development to enhance “smart and good people”	1. Observation of environment laws
2. Fair business practices	2. Labour and human rights practices	2. Inter balancing with community living
3. Anti-corruption	3. Occupational health and safety	3. Environment management and energy
4. Taxation Procedure	4. Education opportunity for youth	
5. Risk management	5. Participation in quality living and environment development of the community	
6. Consumer responsibility	6. Buddhism and local culture upholding	
7. Innovation for sustainable business procedure	7. Trading partnership enhancement	

Materiality Matrix

Level of an impact on the interests of stakeholder groups	Very Important			Important		
	1.3	1.1		3.1	1.5	1.6
	1.2	2.1	2.2	1.4	2.3	3.3
Important	2.5			2.4		
	2.6			2.7		
<div> <div>Important</div> <div>Very Important</div> </div>						
<div> <div>Level of an impact on the organization</div> <div>in social, economic and environmental aspects</div> </div>						



4. Human Resources Development: Enhancing “Smart People”

The Company always values how “employees”, at the start of spot, can drive the organization toward sustainable development. Therefore personnel management regularly focusses on fair practice and respect of human rights. Career advancement with proper benefits goes along with ethical conducts, environment and safety caring as well as working participation. Workers will gain higher skills and knowledges from job learning so that they will become qualified “smart people” as expected by the organization. While stakeholders satisfy their demands the Company shall then effectively reach its goals and commitment. Expected outcomes based on the achieved goals are as followings:

- good and smart workers with expected qualification and skills;
- well prepared employees to support organization growth;
- succession plans for replacement of promotion to key positions;
- annual training plans to promote knowledgeable skills.

Number of employees

As of 31 December 2017 the Company consisted of 728 employees working in the following categories and levels.

Total Employees		Number of Employee			
		2014	2015	2016	2017
Total Employees		552	635	709	728
	Full time	415	526	583	598
	Daily	137	109	126	130
Total Employees by Category					
	Permanent	482	553	599	611
	Contracted	70	82	110	117
Total Employees by Gender					
	Male	331	390	350	448
	Female	221	245	359	280
Total Employees by Rank					
	Management Executive	17	25	25	26
	Department Manager	34	48	56	53
	Chief / Specialists	74	77	78	75
	Primary -intermediate employees	195	291	312	345
	Operation employee	232	194	238	229

4.1 Personnel Development to Support Business Growth

From past to present, the Company's employees grows continuously which derived from the consecutive growth of the business. Therefore, the Company's human resources development structure relates and conforms to competency and KPIs. These measures are the database in the research for creating human resources development courses to be relevant with the Company's vision, mission and strategic plans in order to be the strong and sustainable organization. To prepare for personnel development in accordance with business growth by use the flowing training:

1. Training need survey: required from department and personnel need appropriately
2. On the job training: identify personnel competency and evaluation process both in practice and written test
3. Off the job training: such as special training or simulation and study case

In 2017, the Company still focuses in the competency plan and position qualifications which are relevant to the Company's vision, mission and direction plan. The courses are specified for capability improvement, decent and talented employees and can be utilized in both working and day to day living happily. Length of training courses can be categorized as follows:

Employee Level	Ave. training hour /level			
	2014	2015	2016	2017
1. Operation	15	6	4	11
2. Primary-immediate	23	8	13	26
3. Chief / Specialists	39	36	22	8
4. Department Manager	34	43	23	51
5. Management Executive	36	32	23	38



Incubate the talents with the development of the potential for employee advancement “Smart People”

In 2017, The Company has allocated staff development budget in order to get a good employee and ready to progress as a “Smart People” by using a budget of 1.7 million baht. The training programs have 159 courses with the 100% participant of employees of the total number of employees. The average training hours for employees is 21.67 hours per person per year.

Detail	2014	2015	2016	2017
Training budget (million baht)	2.54	2.02	1.11	1.71
Number of courses	134	160	180	159
Number of employees	100%	100%	100%	100%
Average hours of training per person	23	14	12	22

Sample of 2017 Annual Training Courses Classified by Staff Level

Level/Course	Productivity Activities and Quality			
	Management Course	Technical Course	Management Systems Course	Safety / Environment course
Senior Manager	- Goal Setting & Team Strategy KPIs 2017	- Vendor Management Techniques, Selection, Visiting, Evaluation for a Professional Purchaser	- Primary Fire training and fire escape.	- Train the Trainer of Anti-Corruption Policy
	- Public Administration for the Executives (Class 15)	- Accounting Standards Preparation for 2017		- Analysis and valuation of shares in Leasing and hire purchase business and construction business.
	- Leadership Succession Program (LSP) Class 8	- Being HR in the era of 4.0		- Communication Technique
	- Nomination Committee Best Practice Guideline	- Accounting Standards Preparation for 2017		- Analysis and valuation of shares in Leasing and hire purchase business and construction business.
	- Analysis and Project Management	- Business Strategy for IR		
	- 2017 Salary Survey Project	- Enhancing Good Corporation Governance bases on CGR Scorecard		
	- Energy for the new generation of executives Class 4	- Financial Model 1 Fundamentals of Finance		

Level/Course	Productivity Activities and Quality				
	Management Course	Technical Course	Management Systems Course	Safety / Environment course	Other Course
Manager	<ul style="list-style-type: none"> - Goal Setting & Team Strategy KPIs 2017 	<ul style="list-style-type: none"> - Vendor Management Techniques, Selection, Visiting, Evaluation for a Professional Purchaser 	<ul style="list-style-type: none"> - Quality Management System ISO 2015: 9001 	<ul style="list-style-type: none"> - Primary Fire training and fire escape 	<ul style="list-style-type: none"> - Train the Trainer of Anti-Corruption Policy
	<ul style="list-style-type: none"> - Systematic thinking, decision making and problem evaluation 	<ul style="list-style-type: none"> - Accounting Standards Preparation for 2017 	<ul style="list-style-type: none"> - ISO 14001:2015 	<ul style="list-style-type: none"> - Safety at Confined Space Work 	<ul style="list-style-type: none"> - King Rama 10's Duties and King Rama 9 Sufficiency Economy Philosophy
	<ul style="list-style-type: none"> - Labor laws that employers and employees need to know 	<ul style="list-style-type: none"> - New Innovation Income Tax Update 	<ul style="list-style-type: none"> - Internal Audit ISO 9001:2015 	<ul style="list-style-type: none"> - Working at Heights 	<ul style="list-style-type: none"> - Communication and Tracking Techniques
	<ul style="list-style-type: none"> - Strategy and SCDR model to manage Supply Chain 			<ul style="list-style-type: none"> - The Committee of Occupational Safety, Health and Work Environment 	<ul style="list-style-type: none"> - Evaluation Techniques for KPIs
	<ul style="list-style-type: none"> - Preparation of financial statements 			<ul style="list-style-type: none"> - Electrical safety 	<ul style="list-style-type: none"> - Presentation Technique
	<ul style="list-style-type: none"> - Corporate Finance Class 1/60 			<ul style="list-style-type: none"> - Integrated Power Generation Systems 	<ul style="list-style-type: none"> - Advanced Excel Formula
	<ul style="list-style-type: none"> - Gas Insulated Switchgear Design 				<ul style="list-style-type: none"> - Competency assessment for personnel development
					<ul style="list-style-type: none"> - Priority Management to Work Effectively

Level/Course	Productivity Activities and Quality				
	Management Course	Technical Course	Management Systems Course	Environment course	Safety / Other Course
Supervisor/ Department Head	- Systematic thinking, decision making and problem evaluation	- Vendor Management Techniques, Selection, Visiting, Evaluation for a Professional Purchaser	- Quality Management System ISO 2015: 9001	- Primary fire training and fire escape	- Use of time recording system for making statistics on Leaving Late and overtime in the B-Plus system
	- Supervisor Technique	- Supervisor Technique	- ISO 14001:2015	- Safety at Confined Space Work	- Primary Fire training and fire escape
	- Leadership Development	- Preparation of transactions and documents in accordance with financial reporting standards and tax rules for the calculation of net profit according to the PND 50 for 2016	- Internal Audit ISO 9001:2015	- Working at Heights	- Train the Trainer of Anti-Corruption Policy
		- Supervisor Technique		- Hazard Identification & Job Safety Analysis (USA)	- Evaluation Techniques for KPIs
		- Preparation for Entering ITAP to Enhance Industry Logistics with Technology and Innovation		- Report on greenhouse gas emissions for sustainable business development	- Communication Techniques
		- Mold design and software use to help mold design analysis		- Electrical safety	- Tracking Techniques
		- Innovation		- Biomass and Biomass Power Generation Systems	- Presentation Technique
		- Safety Technique			- Primary Excel Formula

Level/Course	Management Course	Technical Course	Productivity Activities and Quality		
			Management Systems Course	Safety / Environment course	Other Course
		<ul style="list-style-type: none"> - Being HR in the era of 4.0 			<ul style="list-style-type: none"> - Competency assessment for personnel development
		<ul style="list-style-type: none"> - SCP Straight Through 			<ul style="list-style-type: none"> - Priority Management to Work Effectively
Staff	<ul style="list-style-type: none"> - Systematic thinking, decision making and problem evaluation 	<ul style="list-style-type: none"> - Preparation of financial statements 	<ul style="list-style-type: none"> - Quality Management System ISO 2015: 9001 	<ul style="list-style-type: none"> - Primary fire training and fire escape 	<ul style="list-style-type: none"> - Train the Trainer of Anti-Corruption Policy
	<ul style="list-style-type: none"> - Labor laws that employers and employees need to know 	<ul style="list-style-type: none"> - Prepare Accounting Standards for 2016 	<ul style="list-style-type: none"> - ISO 14001:2015 	<ul style="list-style-type: none"> - Safety at Confined Space Work 	<ul style="list-style-type: none"> - King Rama 10's Duties and King Rama 9 Sufficiency Economy Philosophy
		<ul style="list-style-type: none"> - Income Tax Update 	<ul style="list-style-type: none"> - Internal Audit ISO 2015:9001 	<ul style="list-style-type: none"> - Working at Heights 	<ul style="list-style-type: none"> - Supervisor Technique
		<ul style="list-style-type: none"> - Review of internal control system using internal control framework, version 2/60 	<ul style="list-style-type: none"> - Vendor Management Techniques, Selection, Visiting, Evaluation for a Professional Purchaser 	<ul style="list-style-type: none"> - Hazard Identification & Job Safety Analysis (JSA) 	<ul style="list-style-type: none"> - Evaluation Techniques for KPIs
		<ul style="list-style-type: none"> - Caution in Submitting Financial Statements for 2017 and Preparation for Submitting Financial Statements for 2018 	<ul style="list-style-type: none"> - Prepare Accounting Standards for 2017 	<ul style="list-style-type: none"> - The Committee of Occupational Safety, Health and Work Environment 	<ul style="list-style-type: none"> - Effective communication techniques and skills within the organization

Level/Course	Productivity Activities and Quality				
	Management Course	Technical Course	Management Systems Course	Safety / Environment course	Other Course
		<ul style="list-style-type: none"> - High voltage substation connection requirements, Design, Test, Use 	<ul style="list-style-type: none"> - Design using SolidWork 	<ul style="list-style-type: none"> - Electrical safety 	<ul style="list-style-type: none"> - Primary Excel Formula
		<ul style="list-style-type: none"> - Benefits under the Labor Act BE 2545, E-service Practice 	<ul style="list-style-type: none"> - Preparation of documents and evidence documents 	<ul style="list-style-type: none"> - Production Safety Campaign 	<ul style="list-style-type: none"> - Negotiating on good faith for good labor relations.
			<ul style="list-style-type: none"> - Developing Automation in Manufacturing 	<ul style="list-style-type: none"> - Supply chain and CSR stakeholders 	<ul style="list-style-type: none"> - Strengthening Program for the Welfare Committee in the Workplace
	Operation Officer		<ul style="list-style-type: none"> - Introduction to QCC (Class 1/60) 	<ul style="list-style-type: none"> - Primary fire training and fire escape 	<ul style="list-style-type: none"> - Train the Trainer of Anti-Corruption Policy
			<ul style="list-style-type: none"> - How does the QCC work to get to the point? 	<ul style="list-style-type: none"> - Production Safety Campaign 	<ul style="list-style-type: none"> - How to use the new email system for internal and external communication Class 2
			<ul style="list-style-type: none"> - Hazard Identification & Job Safety Analysis (JSA) 		
			<ul style="list-style-type: none"> - Driving skills safe 		
			<ul style="list-style-type: none"> - Zero Defect Disposal and Prevention of Manufacturing Errors 		
			<ul style="list-style-type: none"> - Jig/Fixture Design and Tools 		
			<ul style="list-style-type: none"> - Developing Automation in Manufacturing 		



In addition to the training course, the Company recognizes the importance of personnel who have started work by focusing on staff growth together with an organization, also pay attention on the first day of work. The new staff will be introduced to understand and learn the corporate culture by creating a mentor system for new employees to understand the system, culture, policy guidelines, occupational health and safety operation and to balance between the staff and the organization to understand and work together as a team.

In addition to the business training courses, the Company also provides a course on "Investment plan for tax benefit and savings for retirement" in order for the employees to well-balance their lives before retiring as well as prepare the retiring employees in planning their counterbalance of future life, health and property.

4.2 Capacity Development and Career Advancement

The Company has set up personnel screening criteria under the policy principles of promotion procedure as an incentive to maintain our qualified employees who can foresee their career advancement. When a person if of required qualification to fill or replace certain vacancy that person shall be nominated through a fair screening procedure by the authorized committee of executive directors with the Managing Director who acts as the Chairman of the HR Committee. Following are their duties and responsibility.

- Considering whether the nominee for promotion is of qualification specified by the position succeeding plan.
- Deciding if there is any possible problem regarding human resources management.
- Approving policy on problem solving within the authorized scope given by the Company.
- Suggesting possible solution for certain problems or principles of personnel development or management in line with specific company's policy.
- HR Committee appointed by the top executive and HR manager shall serve as a director and the secretary, approved by the Managing Director.

Statistic Number of Promoted Employees

Level of Promoted Employees	Number of Promoted Employee			
	2014	2015	2016	2017
• Management	7	2	2	9
• Assistant Management and Sale Manager	7	8	5	2
• Chief Department	12	13	8	2
Total number of promoted employees in each year	26	23	15	13

- Setting up system or standard on personnel development to meet the Company's expectation for all divisions so that the working system shall be more effective.
- Appointing appropriate persons to different positions suitable for their ability and responsibility.
- Persuading outside persons to work with the organization while having the present employees realized of their job security and career prospect or being promoted to the higher position.
- Having well developed personnel to support growing organization.

4.3 Promoting Good Practices, Participation and Social Contribution among Employees

The Company is not only promoting “smart persons” among employees but they are as well expected to be “good persons” who regularly practice social contribution by their own capacity and skills whenever opportunity comes for them. Social awareness has been promoted by community development participation through these following activities.



1. **“GUNKUL Buddy Blood for Life”** is the joint activity for both management and employees for blood donation to the Thai Red Cross at Vajira 7 times continuously by more than 100 GUNKUL personnel who follow the great giver determination to save people life.



2. **Voluntary activities** carried out by the 5 S group and cleaning staff who helped cleaning the temple ground and rest room facility at Wat Sawatwarisimaram prior to the ending date of the Buddhist Lent as a public contribution to the temple community on the traditional food presenting to Buddhist priest day. This practice started in 2002 and continues until today as part of community relationship.

New Year and Songkran days contribution by employees engaged them to the community road and surrounding areas clean-up including Wat Tanode ground and rest-room facility cleaning continually.



3. **“Gunkul good people project”** organized as appreciation for employees who “found and returning to the owners” of certain lost objects as they have been praised as the role model of contribution for happy living society.

5. “Energy Business”: Alternative Energy Innovation Development

The Company focusses on quality production based on good governance with top up business value of electrical equipment distribution by our innovation and management of alternative energy project produced by solar energy and wind power; covering construction of power plants and energy distribution which are environmental friendly to enhance confidence of stakeholders who care for safety and quality standards and minimum environmental impacts.

5.1 Good Corporate Governance Policy has been launched by the Company's Board with a strong intention to enhance business efficiency based on good governance and transparency to enhance credibility among stakeholders and in line with counter balancing of business, social and environmental impacts while promoting alternative energy production with recognition of consumers' safety, added value returns for stakeholders in the long run as well as company's competitiveness and the corporate sustainable growth. The Company Board, sub-committees and all employees shall as well the enterprise good governance procedure which bring returns of added value to shareholders while creating confidence among all stakeholders. This policy enhances sustainable growing for the Company with increasing competitive capacity. Main objectives are as followings.

- Serving as management policy for supervising and control by the authorized officers who shall manage effective resource utilization with required efficiency to meet the set goals.
- Providing the fair maximum returns to all stakeholders.
- Regularly review this policy and procedure each year.

In 2017, the Company received the following results from the survey of Thai listed companies' corporate governance for 2017 as detail below;

1) Average Rating

Listed Companies Overall	SET 100 Index	SET 50 Index	GUNKUL
80%	87%	90%	91%

2) Category Rating

Category	Rating			
	Listed Companies Overall	SET 100 Index	SET 50 Index	GUNKUL
Rights of Shareholders	93%	96%	97%	97%
Equitable Treatment of Shareholders	92%	95%	97%	98%
Roles of Stakeholders	78%	87%	91%	84%
Disclosure and Transparency	84%	91%	94%	93%
Board Responsibilities	71%	80%	85%	89%



5.2 Being of Fair Enterprise Practices

The Company promotes good governance practices and ethical operations with responsibility toward both internal and external stakeholders, among board members, executives and all employees who shall continually observe the business ethics policy with required follow up under the Auditing Committee and the Good Corporate Governance Committee.

5.3 Anti-Corruption Practices

The Company is committed in performing its business in accordance with the principles of ethical business practice and good corporate governance by arranging the guidelines for ethical business practice and good corporate governance in writing. These guidelines shall assist the Company's Committees, management executives, employees and all stakeholders in conducting transparent and legal practices such as prohibition in demanding, receiving or paying dishonest payment with the Company's business partners and/or creditors. In addition, valid report of changes in the Company, directors' and management executives' securities holding as well as report of the stakeholders in accordance with the relevant laws and regulations of SET and SEC needs to be conducted clearly. Moreover, purchasing procedures, finance and accounting, sales, human resources, etc. are required to be performed as per the stated authorization. Furthermore, the Company also arranges the internal audit control so as to be confident that all operations are conducted effectively and efficiently with the checks and balances of assets for the benefit of the Company. The Board of Directors appoints the Audit Committee in regular reviewing and evaluating the risk concerning the internal audit control under the stated Audit Committee Charter.

The Company arranges the complaint and trace channels for any suspicious / violated practices as follows:

1. Direct or indirect organizational fraud such as corruption acknowledgement with private or government sectors.
2. Misconduct practices from the Company's rules and regulations which could lead to fraud.
3. Practices which cause the Company to lose benefit or impact the Company's reputation.
4. Illegal, immoral and unethical business practices.
5. Violation of Good Corporate Governance procedures.
6. Injustice in performing one's duties.

The Company has signed for the Private Sector Announcement on Anti-Corruption issued by corporation with the Anti-corruption Organization (Thailand) focussing on policies to anti-bribery and all forms of corruption. Public relation campaign has been launched to assure that all personnel shall not ask for bribes on take actions based on given rewards or any interests for benefits gaining, for themselves and the Company, offered directly by concerned parties.

Communication channel for informant: any suspicious actions for undesired corruption shall be informed for required acknowledgement as follows:

Communication channel for informant for anti-corruption

1. Audit committee email: audit_committee@gunkul.com
2. GUNKUL Website www.gunkul.com subject "Whistle Blowing Channel"
3. Seal Postal Mail to
Chairman of Audit Committee
GUNKUL ENGINEERING PUBLIC CO., LTD.
1038 - 1046 Nakornchaisri Rd.,
Nakornchaisri, Dusit,
Bangkok 10300, Thailand.
4. Anti-corruption Whistle Blowing Box
(in-house : only audit committee and / or secretariat of audit committee can open the box)

Internal activities to support anti-corruption campaign

- Training course on Anti-corruption Policy" for full coverage of employee at every level.
- Photo contest on GUNKUL people showing anti-corruption power"
- Questions - answer forum, employee rewarding by Executive Chairman to those who can answer every question of Anti-corruption Policy.

In 2017, the Thailand's Private Sector Collective Action against Corruption (CAC) is a project supported by the Government and government's National Anti-Corruption Commission (NACC) approved the Company to become a member of the Private Sector Collective Action Against Corruption through the self-assessment process, which shows that the Company's policies and guidelines to prevent corruption within the organization in accordance with the criteria set by the CAC.





5.4 Taxation Procedure

The Company cooperated with the Revenue Department on taxation with honest, complete and transparent committed payment on the required schedule. In 2017 the Company's total revenue was of 4,855.28 million baht for which the paid taxation was of 69.78 million baht.

Remark: information from consolidated financial statement of GUNKUL and Subsidiaries for financial year end at 31 December 2017

5.5 Risk Management

The Company, by the authorized Board, has appointed the Risk Management Committee with a strong commitment to continue driving sustainable growth. The said Committee is responsible to set up the risk management policy to direct business operation under the Law of Security Exchange of Thailand and other related rules and regulations, plus anti-corruption measures and procedure. The Committee also follow up and support successful risk management practices at both organization and project levels based on certain risky situations. It has to evaluate if the set procedure is of efficient coverage to enhance risk management at each operation step comparing to the international standards and propose appropriate improvement, if it is so required, to the attention of the Board. It shall as well assess its own operation outcomes followed by improving suggestions, if so required. The Board shall be then reported accordingly as a basis to consider adoption of the organization development policy, continually.

5.6 Labour and Human Rights Practices

The Company committedly follows the constitution organic laws on human rights i.e. the labour laws and the Company ethical codes focusing on respect for basic rights and freedom of stakeholders, fair and equal treatment which are the key supporting factors to drive business operation.

Operation procedure adopted by the Company are all in line with relevant laws which include human rights principles aiming to guide how employees, business partners, suppliers, shareholders and stakeholders be properly treated as apparent in the following conclusion.

1. Respect for human rights and basic rights in line with the related organic laws, including safety for life and assets of the Company's stakeholders.
2. Promote equality by fair treatment for all workforce since every employee holds the right to career advancement with proper remuneration and welfare services competable with other operators in the same industry KPIs shall be applied for working outcome in figures. The

Company equally provide career advancement for all employees by training and skills development.

3. Respect for different opinions, freedom of faith and religion, personal privacy and/or confidentiality of other concerned persons.
4. Fair practices for human resources management, without-discrimination, strictly follow minimum legal prescription regarding employment (prohibition for child labour and forced labour), sexual harassment by verbal aggression and physical action for which the Company has prescribed appropriate punishment regulations.
5. Direct communication with stakeholders, available channels for complaints and/or grievances submission including procedure to ensure effective and fair handling with transparency and possible checking.
 - Telephone: 02 242 5834 with provided stamping on vouchers of good sending and receiving and taxation document.
 - website : www.gunkul.com
 - Corporate Governance Committee
 - Investor Relations Section : ir@gunkul.com
 - Intranet, Top Executive, Meeting with Employees, Morning Talk, Opinion Box for Employees.
 - Annual shareholders meeting/special meeting for shareholders.
 - Shareholders enterprise visits.
6. Strongly hold ethical conducts and professional practices in line with corporate operation.
7. Environmental system to enhance effective practices of the set standard to protect community life and social living against pollution impacts.

This procedure is based on corporate management basis determined by the Board as basic responsibility toward company's stakeholders under supervision of the Office of Managing Director to assure strict implementation to secure confidence among employees, shareholders, partners, customers and the society at large which has ensured good company image and reputation until today.

Employment for disable persons: At present the Company has 2 permanent disable employees who have registered with the Department of Disable Persons Development. In 2017 the Company is still on a survey of disable persons with an attempt to hire more disable persons with an attempt to hire more disable persons so that they can take care of themselves and their family, and living a life equally and similarly to other people.



5.7 Standards of Safety, Occupational Health and Environment

The Company promotes practices recognized by the international standard for environmental conditions at various solar power plants in the group of Gunkul Engineering Public Company Limited, certified by ISO 14001: 2015 and rewarded for the CSR-DIW Awards 2017 from the Department of Industrial Works; Green Industry Level 3, 7 branches and Green Industry Level 2, 24 branches as follows:

The Company has announcement appointment of The Community for Environmental Responsibility" with following duty and responsibility.

1. Set up internal operation policies on management, services and environmental systems for both internal and external operation.
2. Integration of environment procedure under the performance assessment criteria and corporate regulations. Educate employees about existing environmental problems in the areas under their responsibilities.
3. Communicate to employees of all levels about gaining benefits and commitment to organize environmental management systems.
4. Follow-up and review the achievement of the environmental management procedure.

Apart from the above mentioned welfare benefits, the Company also focuses on the employees' excellent health by giving health recommendation as well as offering regular health attention throughout various communication channels such as announcement boards, emails, audio broadcasting, Morning Talk. Physical performance test is included in the annual health checkup as well. The Company expects all employees to take better care of their health so various sport activities are also arranged such as futsal match between the warehouse and the factory as well as volleyball match.

For occupational health, the Company arranged the activities through "The 5 S - Five Keys to a Total Quality Environment", Environmental Committee, Safety Committee, Morning Talk - JSA : Job Safety Analyst and Plan-Do-Check-Act (PDCA) with the objective in improving the proper, safety and hygienic workplace. By continuous cooperation from all level of employees as an organizational culture, each department has arranged the activity contest in accordance with the 5 S as well as rotated the Audit Committee performing the 5 S's consideration in the Company group. This shall enable all corporate employees in perceiving internal and external points of view and sustainably developing the 5 S for the Company and employees' benefit.

The Company trusts that the standardization in safety, occupational health and environment are one of the key roles in effective and efficient business operations. Therefore, the Company developed the standardization in safety, occupational health and environment in accordance with the stated laws, international standard and other relevant regulations to ensure the safety of both employees and company visitors. Safety Factory Exhibition was conducted with a continuous campaign for employees to realize and participate for the continuous and sustainable safety, occupational health and environment.

Table of No. of Accidents and Safety Days during 2014 – 2017

Company	2014		2015		2016		2017	
	Accident which caused day off (more than 3 days)		Accident which caused day off (more than 3 days)		Accident which caused day off (more than 3 days)		Accident which caused day off (more than 3 days)	
	Number of continuous accident-free days	Number of continuous accident-free days	Number of continuous accident-free days	Number of continuous accident-free days	Number of continuous accident-free days	Number of continuous accident-free days	Number of continuous accident-free days	Number of continuous accident-free days
GKA	3	98	0	381	0	681	0	978
GKP	0	414	0	732	0	1,032	0	1,329

5.8 Employee Engagement with Welfare and Productivity Enhancement Activities

GUNKUL values the continued human resource development because it firmly believes that developing personnel and organization in line with business direction is the engine that drives the company's success. It encourages the employees to appropriately and continuously create their work and develop themselves. GUNKUL makes sure that it has the task force full of good, talented, and skilled people to conduct the business.

To develop the employees into good and talented people, GUNKUL formulated the policy of human resource development that covers all levels of employees, ranging from management to technical and specialized skills. The company also fosters positive attitude to enhance the employees' efficiency and happiness at work. Moreover, every employee has a chance for career advancement and self-development to improve the quality of life.



GUNKUL creates engagement between the management and employees and makes them a part of “GUNKUL family” by providing the following welfare and engagement activities:

Welfare and Engagement Activities for Employees and Families

Monetary Welfare and Facilities	Health and Safety	Family Welfare
<ul style="list-style-type: none"> • Uniforms • The provident fund 	<ul style="list-style-type: none"> • Annual physical checkup • Group insurance and travel insurance in case of overseas travel 	<ul style="list-style-type: none"> • Scholarship for employees' children • Financial aid in case of disaster
<ul style="list-style-type: none"> • Staff canteen 	<ul style="list-style-type: none"> • Medical financial assistance in out-patient and in-patient case 	<ul style="list-style-type: none"> • Compassionate funds for employees' parents and children
<ul style="list-style-type: none"> • Parking space 	<ul style="list-style-type: none"> • Annual sports day 	
<ul style="list-style-type: none"> • Increasing vacation days in proportion of years of service 	<ul style="list-style-type: none"> • Morning Talk - JSA: Job Safety Analyst, encouraging the employees to analyze the job based on Plan-Do-Check-Act (PDCA) principle before working 	

Monetary Welfare and Facilities	Health and Safety	Family Welfare
<ul style="list-style-type: none"> Employee visit in case of sickness 	<ul style="list-style-type: none"> Check health to assess obesity by measuring weight, waist and hip Blood pressure, Blood test to detect diabetes, Oral health checkup by dentist Breast cancer test by medical and nursing staff from Health Center 38 in order to strengthen the commitment of the organization, employees and the community 	
Moral Support and Participation	Religion, Culture and Tradition	Volunteer Activities
<ul style="list-style-type: none"> Celebrating employees' birthday by having meal together, presenting birthday gifts, and/or giving offerings to Buddhist monks and listening to dharma 	<ul style="list-style-type: none"> Offering food in the monks' alms bowls and joining religious activities with surrounding communities on religious days. Holding an annual event to offer food to the monks. 	<ul style="list-style-type: none"> Community service <ul style="list-style-type: none"> Cleaning toilets and sweeping temple court Collecting garbage around the company and communities
<ul style="list-style-type: none"> 5S and QCC, which encourage the employees to take part in improving the way of work or work environment 	<ul style="list-style-type: none"> Water-pouring ceremony to ask a blessing from the management in "Maha Songkran Ban GUNKUL Festival" 	<ul style="list-style-type: none"> Knowledge transfer <ul style="list-style-type: none"> Installing Solar cell Installing and changing LED lights
<ul style="list-style-type: none"> Annual sports day 	<ul style="list-style-type: none"> Giving oranges as traditional Chinese blessing during Chinese New Year Giving the "Red Envelope" to the employees and the surrounding community 	
<ul style="list-style-type: none"> The management visit solar or wind farm to give the employees moral support and talk to them to learn about their well-being. 	<ul style="list-style-type: none"> Holding an annual event to offer food to the monks. 	





Creation of engagement through productivity activities

Productivity activities aimed to promote the collaborative atmosphere for employees and enhance their skills, abilities, experience, and learning throughout their work period to ensure that they feel they are part of, love and cherish, and have ties with, the organization. The objectives of the activities are as follows:

1. To encourage all employees to be involved in work and work quality improvement, work as a team in a systematic manner, learn how to solve immediate problems on their own, and learn how to do self-improvement.
2. To create collaboration to achieve the quality target, by identifying weaknesses and root causes to make improvements and carrying out systematic planning.
3. To create motivation, by providing compensation and/or certificates to employees who participate in activities that are useful and create value for the organization.
4. To jointly take care of the environment and create good things for stakeholders.

Hence, the Company has focused on all employees' participation in all productivity activities to encourage corporate objectives and expectations to be achieved through the activities, as follows:

1. 5S

The 5S activities aim to improve employees' work based on the principles: "Sort (Seiri), Set in Order (Seiton), Shine (Seiso), Standardize (Seiketsu), and Sustain (Shitsuke)" in the workplace. They will provide the Company with employees equipped with self-discipline derived from their own consciousness; the clean, tidy, beautiful, and safe workplace environment, with suitable recyclable solid waste sorting management; environmental balance; and income generation per activity to improve the 5S activities. In 2017, the value of sorted recyclable solid waste amounted to 24,033.50 baht.

In addition, the Company provided motivation by giving compensation and certificates to departments with top-three scores in the 5S activities. This aimed to promote the disciplines: "Sort (Seiri), Set in Order (Seiton), Shine (Seiso), Standardize (Seiketsu), and Sustain (Shitsuke)" among employees in each department and their application in everyday life.

2. QCC Quality Improvement

The Company has introduced the QCC (Quality Control Cycle) quality improvement activities to promote a collaborative atmosphere for the development and improvement of work quality, quality of life, and environmental quality. These activities are also aimed at enhancing employees' skills, abilities, experience, and learning throughout their work period to ensure their participation in different internal operations, e.g. cost reduction, waste reduction, productivity enhancement, workflow reduction, productivity improvement, sales increase, and/ or work time improvement.

In 2017, there were 48 QCC quality improvement groups, and the following categories were proposed for improvement:

- Workflow reduction: 14 topics
- Work time reduction: 15 topics
- Performance improvement: 19 topics

Statistics of QCC Quality Improvement Activities and Quantitative Outcomes

Year	Number of topics each year	Quantitative outcomes
2015	50	Cost reduction by 203,447 baht.
2016	50	Cost reduced by 779,280 baht.
2017	48	Cost reduced by 662,155 baht.

To boost the morale of all groups of QCC employees, who systematically worked as a team to present work pertaining to enhanced performance and reduced workflow, which passed criteria and were approved by the Board of Directors, the Company gave a financial reward to topics based on their value with the “Valuable Achievement Prize” and gave a financial reward based on their quantitative outcomes with the “Outstanding Achievement Award.” In addition, the Company provided certificates to reinforce their pride and the feeling that they are part of the organization, who were involved themselves in performance improvement.



3. Program on Logistics Productivity Enhancement in the Industrial Sector

The Company participated in the industrial logistics optimization project; Industry with strong and sustainable development potential in 2017 in cooperation with the Logistics Bureau, the Department of Primary Industries and Mines continuously as a second year by joint venture with I-Tree Creation Co., Ltd. with 2 projects. The details are as below;



3.1 Reducing Stock Aging without Scarp Project

The implementation of this project has provided training on the reduction Aging Stock without Scarp. It is the stock of inventory that has been kept for a long time until the account is set. This allowance normally has an increased ratio when the storage period is longer to reflect that, the Company has less stock to release.

Improvement process using Aging Stock through stakeholder:

Stakeholder	Process
1. Customer	Offer original products that customers have purchased by give a special price or special discount
2. Sale	Plan for promotion together with other products that are needed by customers through all channels of sales such as website, advertising media, exhibition booth, etc.
3. Production	<ul style="list-style-type: none"> • Convert raw material / semi-part to finished goods to sell out quickly. • Separate finished goods into sub-sections to be assembled into another piece sold.
4. Engineering	Design original / new product using Aging Stock as a materials
5. Distributors	Make a return/ change goods contract

Summary of Aging Stock Reducing Results

- Inventories decreased by Baht 4,293,705
- Total sales increased Baht 3.6 million
- The allowance for bookkeeping remains unchanged (approximately Baht 5.2 million).

3.2 Reduced lead time throughout the process: by applying the principle of line balancing

Before the improvement, the production time took 17.30 days. After the improvement, the production time took 1.19 days.

Summary of the results: The decrease was 16.11 days or 93.12% (refer to Hotline 16 – 70). The cost was reduced to 46,852 baht per year. The total cost was reduced from 4 projects to 460,451 baht per year.

5.9 Responsibility for Consumers

The Company has attached great importance to manufacturing and selecting equipment or products that meet safety standards in order to prevent risks. It has produced power system equipment with international standard certifications and uses products with quality warranty and safety standards.

No.	Standard highlight topics
1.	Internal product tests, to ensure compliance with required standards (LPS/EGAT)
2.	International standard certifications (UL + IEC)
3.	TISI Standard registration for new equipment.
4.	ISO 9001:2008 - Requirements for a quality management system.
5.	ISO 14001:2004 - Requirements for an environmental management system.



Management of environmental impacts of the production process

Taking into account potential impacts of its products on local communities, GUNKUL has a policy to manage its production processes to ensure their friendliness to the environment and local communities, with preventive measures, as follows:

1. Complying with environmental laws and requirements and other relevant laws and requirements, as well as environmental impact corrective, preventive, and management measures.
2. Studying and analyzing environmental impacts of projects during the construction and operation phases, which will provide effective impact prevention and reduction.
3. Applying an international standard-based environmental management system to better monitor environmental quality management.
4. Selecting good equipment for the power production process, which is another way of handling environmental impacts - Wind and solar energy has no or minimal impacts on the environment and local communities.

Activities for consumers

GUNKUL has committed to understanding customers and encouraging them to engage in learning beyond transactions between the customer and the Company. Furthermore, it promotes customers' understanding about the value of sustainable development and social responsibility.

It has a mission to deliver the best products and services to customers along with a sense of social responsibility, in terms of quality and safety. It has committed to focusing on the safety standards for production and services and the inspection of product and service origins, for the construction of renewable energy-based power plants and high-voltage equipment. It offers work experiences with responsibility for, and knowledge and understanding about, customers' actual needs and delivers socio-economically valuable products and services for customers through different activities, as follows:

Summarize the external customer satisfaction questionnaire for 2015-2017

Topics Surveyed / Year	2015	2016	2017
1. Job Tracking	86.60%	84.61%	86.19%
2. Product information	86.18%	84.40%	86.72%
3. Troubleshooting	83.74%	83.46%	85.53%
4. The speed of the bid	84.43%	84.27%	86.52%
5. The accuracy of the number of products	86.97%	86.15%	89.22%
average	85.58%	84.58%	86.84%

5.10 Supply Chain Management

GUNKUL has a policy to treat its partners and creditors on an equal and fair basis, based on fair returns to all involved parties, to avoid situations that trigger the conflict of interests. It has complied with its obligations under the partner treatment policy, as follows:

1. Fairness and equality - Providing equal opportunities for all partners under fair consideration and selection criteria.
2. No intellectual property infringement - Using copyrighted and trademarked services and products and supporting no products or acts that violate intellectual property laws.
3. Anti-corruption - Requesting no gifts or benefits from clients or partners, strictly complying with the policy towards its business code of ethics.
4. Strict legal compliance - Lawfully conducting business, complying with standard, environmental quality, safety and occupational health systems, and having responsibility for local community ways of life and society as a whole, in a strict manner.

5.11 Environmental Management and Energy Conservation

Environmental protection

The Company values business operations in conjunction with continued pursuit of opportunities for expanding its investment in environmentally-friendly business. In addition to expanding investment in renewable energy, including wind, solar, and biomass energy, to reduce air pollution arising from fossil fuel use, the main cause of global warming, the Company has carried out production in the steel tower plant in compliance with ISO 14001, which deals with environmental management.

Environmental management

Realizing the significance of the environment, the Company has formulated preventive and corrective measures for reducing environmental impacts of currently operated solar power plants. The Company has investigated both direct and indirect environmental impacts of production processes. The preventive and corrective measures for impact reduction are as follows:

Environmental resources	Preventive and corrective measures for impact reduction
1. Air quality	No impacts
2. Noise	No impacts
3. Water quality	1) Provide a sufficient number of sanitary bathrooms for workers. 2) Provide retention ponds to collect rainwater washing down the top soils at the construction site. 3) Reuse water in the retention pond, for example, to sprinkle over access roads to projects and construction sites.
4. Management of solid waste from offices and workers' activities	- Collecting and sorting general solid waste arising at offices. - Collecting and sorting recyclable solid waste to sell to recycled material vendors. - Collecting hazardous municipal solid waste and delivering it, when its amount is large enough, to companies or agencies legally authorized to provide hazardous waste disposal services.
5. Water drainage	1. Providing sediment traps, which are used before draining water from project areas. 2. Cleaning water channels around projects at least twice a year, especially before the wet season. 3. Draining rainwater in project areas to surrounding water channels rapidly as fast as possible and storing rainwater as raw water for use within project areas or for retention before drainage. 4. Inspecting the drainage system, water channels around project areas, and the sedimentation trap system on a regular basis.
6. Waste management	Providing training in collecting broken solar cells to companies that offer standard waste disposal services.

Management, efficient resource use, and global warming mitigation

Global warming is a global problem, for which many countries have developed mitigation measures. The major causes of global warming are excessive use of natural resources, which results in a loss of original environmental conditions. Its common causes include electricity generation with combustion of fossil fuels, e.g. oil, natural gas and coal. Combustion contributes to greenhouse gases and air pollution, which leads to global warming, a major global issue that should be tackled.

The Company has realized that power generation projects using other forms of energy that is clean and naturally available, e.g. solar and wind energy, should be developed in order to ensure power conservation, conscious resource use, and reduced carbon dioxide emissions.

The Company's power plants are natural energy-based projects, including solar, wind, and biomass power plant projects (the biomass power plant projects are being developed). Producing no pollution, e.g. air and water pollution, all these forms of energy reduce greenhouse gas emissions.

The Subsidiary of the Company's CO₂ Emissions for 2017

No.	Project	Energy types	Year of implemen- tation	Production capacity (MWp)	Net production capacity (MWh)	Amount of CO ₂ reduction (tCO ₂ /y)
1.	Ban Kluai 1	Solar farm	2011	3.3	5,005.62	2,502.81
2.	Ban Kluai 2	Solar farm	2011	5.3	7,440.78	3,720.39
3.	Wichianburi	Solar farm	2013	9.8	14,665.75	7,332.87
4.	Si-Chula	Solar farm	2013	9.8	13,894.71	6,947.36
5.	Noen Po	Solar farm	2013	5.6	7,935.00	3,967.50
6.	Buengsamphan 2	Solar farm	2013	3.6	4,744.97	2,372.48
7.	Ta Khit	Solar farm	2013	7.6	10,418.44	5,209.22
8.	Ta Sang	Solar farm	2013	7.6	10,378.03	5,189.01
9.	Dong Korn	Solar farm	2013	7.6	10,913.95	5,456.98
10.	Buengsamphan 1	Solar farm	2013	7.6	11,526.32	5,763.16
11.	Bo Phloi	Solar farm	2013	1.2	1,811.11	905.56
12.	WHA GUNKUL GSR 1	Solar rooftop	2011	0.64	884.98	442.49


No.	Project	Energy types	Year of implemen- tation	Production capacity (MWp)	Net production capacity (MWh/)	Amount of CO ₂ reduction (tCO ₂ /y)
13.	WHA GUNKUL GSR 3	Solar rooftop	2011	0.83	1,184.09	592.05
14.	WHA GUNKUL GSR 6	Solar rooftop	2011	0.83	1,186.01	593.01
15.	WHA GUNKULGSR 17	Solar rooftop	2011	0.998	1,353.72	676.86
16.	Pichai	Solar rooftop	2013	0.022	32.07	16.04
17.	GKA	Solar rooftop	2013	0.25	287.63	143.82
18.	TPARK	Solar rooftop	2013	0.539	725.21	362.60
19.	WAYU	Wind Farm	2016	50	96,632.65	48,316.33
20.	SUBPLU 1	Wind Farm	2016	8	16,802.15	8,401.08
21.	SUBPLU 2	Wind Farm	2016	2	4,871.99	2,436.00
22.	RNS Phang Tru	Solar farm	2015	8	12,829.70	6,414.85
23.	RNS Don Slap	Solar farm	2015	8	12,821.95	6,410.98
24.	RNS Lum Rang	Solar farm	2015	8	11,891.59	5,945.79
25.	RNS Ang Thong 1	Solar farm	2015	8	11,421.33	5,710.67
26.	RNS Ang Thong 2	Solar farm	2015	8	11,554.62	5,777.31
27.	RNS Ang Thong 3	Solar farm	2015	8	10,640.36	5,320.18
28.	RNS Yang Nam Klat Tai	Solar farm	2015	8	12,029.49	6,014.75
29.	RNS Klat Luang	Solar farm	2015	8	11,858.43	5,929.21
30.	RNS Nong Chumpol	Solar farm	2015	8	12,083.56	6,041.78
31.	RNS Thung Kwao	Solar farm	2015	7	10,923.41	5,461.70
32.	RNS Tao Pun	Solar farm	2016	8	12,367.08	6,183.54
33.	Bang Ka Chao	Solar farm	2016	5	8,212.50	4,106.25
TOTAL				225	361,329.20	180,664.60

5.12 Innovation in the Business Process for Sustainability

Technological innovation

- The Company has prioritized using and providing equipment that has high quality and standard certifications granted by different agencies to ensure maximum performance and that is safe for health and protects the environment.
- To make decisions about purchasing any equipment, equipment performance is taken into account and quality comparison is conducted on different brands. This aims to ensure greater benefits and worthwhileness.
- The Company has supported and involved itself in environmental protection, by sorting certain types of materials with the recycling symbol for recycling. Also, it has provided sedimentation tanks to recycle water, which lessens the problem of wasteful use of water resources.
- Providing and selecting materials having minimal environmental impacts.
- Selecting materials that are worth money throughout their lifetime.
- Materials used must reduce or minimize environmental impacts throughout their lifetime.

Examples of symbols accompanied with equipment

	<p>These symbols indicate reusability or recyclability of materials.</p>
	<p>The Manufacturer's Declaration, which specifies that a product has qualities that meet health, safety, and environmental protection requirements and comply with EU laws and regulations.</p>
	<p>The Canada Standard Association (Safety certification).</p>
	<p>The Thai Industrial Standard for equipment manufactured in Thailand.</p>



The ISO (The International Organization for Standardization) standard, which indicates production and environmental management. It is applied to solar components.



The IEC (International Electrotechnical Committee) standard. The IEC's members are national agencies from countries across the world.



The ASTM (The American Society for Testing and Materials) standard, which determines the quality of concrete used in the wind turbine's foundation.



The EUROCODES standard, which specifies the quality of design of wind turbine foundations and electricity systems within wind turbine-based power generation projects.



The engineering design standard, which the Company will receive prior to project construction.

6. Community and Social Development: Sustainably Creating and Developing Good Things for Society: "Action Social"

GUNKUL has committed to promoting its coexistence with local communities by providing them with friendliness and assistance as "good neighbors." This aims to develop and strengthen the local communities to ensure sustainably good quality of life and society, promote the community participation process to ensure receiving relevant information, and strengthen mutual understanding. The Company has monitored implementation results and managed potential impacts of its business operations. It has valued knowledge and experience sharing among individuals and organizations to ensure appropriate and continuous environmental development.

Realizing the importance of its involvement in developing communities and society as a whole, the Company, in collaboration with educational institutions, organizes beneficial activities for them on an annual basis. It provides funding support for these activities and assigns its employees to join activities held by local communities, such as:

Community and social development

In 2017, GUNKUL continuously implemented socially-beneficial activities because of realizing that this was its responsibility for the society, its stakeholders in its business operations. The implementation results of last year's activities are as follows:

The Company's social and environmental policies promoted community participation and educational opportunities, sport excellence, local culture and traditions, community ways of life, preservation and rehabilitation of environmental quality to achieve sustainable natural and life balance, co-existence with local communities with mutual assistance as "good neighbors," as well as sustainable community development and strengthening to ensure good life and environmental quality.

6.1 Creating Educational Opportunities for Students from Schools Surrounding Local Communities and Employees' Children

- **Creating educational opportunities for young students to have a chance to learn the real work experience**

The Company supports and creates educational opportunities for young students by supporting the learning experience in the real work. We also develop various skills that are fundamental to sustainable growth by establishing a network with educational institutes in 2017, the Company has implemented cooperation projects with educational institutions to create opportunities for young students in the project as follows:

1. **Cooperative Education Project:** The Company has a policy of learning organization and contributing to the creation of quality human resources to society. Students are offered opportunities to learn from experience. The MOU provides a chance for students to work in the company for 2 years. In 2017, there were 8 students studying in the company under the cooperative education program from Rajamangala University of Technology Phra Nakhon.

In 2017, the Company was awarded a plaque to join the cooperative education from Rajamangala University of Technology Phra Nakhon to demonstrate the commitment of the Company for being a learning organization and contributing to the creation of sustainable human resources to society.

2. **General Internship Program:** There are 24 students studying in the company's department from these follow institution;

From Institution of	Amount (Person)
Rajamangala University of Technology Phra Nakhon	17
Asia University	1
Rajapruk University	1
Rajamangala University of Technology Srivijaya	5

It gives students the opportunity to learn and gain real life experience, to prepare themselves before graduate and get to work including to know to adjust to organizational culture and apply with a real work. The company aims to become a learning organization and contributes to the development of sustainable human resources.

- **Promoting education for students in schools around the community**

The Company recognizes the importance of equal opportunity for education. It found that there was a lack of funds for youth in schools around the community, to spend on education. The Company has provided scholarships to young people in the community that are good kids but lack of fund for studying.

Every year, GUNKUL grants 50 scholarships to Anuban (kindergarten level)-Prathom 6 (primary level) students from Wat Sawatwarisimaram School and some scholarships to Matthayom 1-6 (secondary level) students from Wat Noi Nopphakhun School (Phet GUNKUL Scholarship). The total value of the scholarships is 100,000 baht. Students with good class performance and good conduct but with inadequate financial support are selected to receive the scholarships. The Company also continually grants scholarships to its employees' children. This aims to promote education and improve the quality of life of local youth.

Number of Anuban and Prathom Students from Wat Sawatwarisimaram School Receiving a Scholarship from GUNKUL Engineering Public Co., Ltd.

Anuban-Prathom	Number of students				
	2013	2014	2015	2016	2017
Anuban 1	2	7	4	4	6
Anuban 2	6	7	4	4	5
Prathom 1	5	8	5	5	7
Prathom 2	11	4	7	7	5
Prathom 3	7	4	6	6	9
Prathom 4	8	8	6	6	10
Prathom 5	8	6	7	7	6
Prathom 6	3	6	11	11	12
Total	50	50	50	50	60



Number of Matthayom Students from Wat Noi Nopphakhun School Receiving the
“Phet GUNKUL Scholarship”

from GUNKUL Engineering Public Co., Ltd.

Anuban-Prathom	Number of students				
	2013	2014	2015	2016	2017
1	13	17	10	16	16
2	-	-	6	7	7
3	-	-	8	7	7
4	4	-	-	2	2
5	-	-	7	4	4
6	-	-	11	4	4
Total	17	17	42	40	40



- Promote the education of employees' children**

The Company recognizes the importance of the employees including their family to build relationships between employees' family and organizations. The scholarship is provided to the employee's children “Good children, Excellent children, the GUNKUL's family” has given scholarships from kindergarten to bachelor's degree. The scholarship has been provided to the employees' children for a period of 10 years. There are 472 scholarships offered to their children with a total amount of 2,065,000 Baht.

6.2 Providing Financial Support and Improving the Condition of Educational Institutes and Communities

- **Supporting energy saving lamp for Rajamangala University of Technology Phra Nakhon**

The Company supports energy saving lamps; 991 lamps for LED BULB 9 W and 3,670 lamps for fluorescent lamp, totaling 4,661 lamps were donated. Assoc. Prof. Supattra Kosayakanont, President of Rajamangala University of Technology Phra Nakhon and the management of the university are the recipient. All energy saving lamps will be installed inside the building of the Faculty of Industrial Technology to save electricity to educational institutions.



- **Enhancing the capacity of basketball players of Wat Noi Noppakhun School and turning them into professionals.** This project promotes and drives female basketball players toward national level. The sport also encourages the children to stay united and become good citizen of society and nation.
- **“White Heart” anti-AIDS project** supports charitable activities for orphans, elderly people, and patients with AIDS. The proceeds went to Wat Phra Bhat Nampoo, Lopburi province.



- **Supporting community activities** such as activities on the International Day of Older Persons, water-pouring ceremony to receive a blessing from the respected elderly, and providing the elderly people with t-shirts for sport activities and the villagers' events to illustrate the brainstorm of creating a career income for the household including holistic health care for the people in the community.



- **Supporting the purchase of medical equipment**

Heart tracker, Pressure controlled ventilation, Spine Surgery, and Other Medical. Also supplies the building for a relative pavilion at Wichian Buri Hospital, Phetchabun Province for people in general.



- **Supporting the International Youth Music Contest**

The Company supports Supattra Kindergarten to join the international music contest on the Asia Junior Marching Band Championship 2017 on behalf of Thailand Elementary School, which held during 20-22 July 2017 in Kalana jaya, Malaysia. This is for developing Thai children's musical potential to international level and for building a reputation for Thailand.



The Supatra kindergardeb team also won the gold medal with a high score of 90 points and won the best prize of kindergarten level. In addition, the scores from the competition have been certified by the World Association of Marching Show Band that Supatra Marching Band Thailand is the first band in the world that receive the gold medal of Kindergarten level with the youngest players.



- Support the National Children's Day by giving the gifts to the surrounding community.



Supporting National Children's Day by giving the gift to Wat Sawat Wari Simaram School, Wat Noi Noppakun School, Khae Community, Wat Noi Noppakun Community, Nakornchaisri Community, Samsen Police Station, Early Childhood Development Center, The 11th Military District Community together with community and family of police officers, military officers and nearby residents, jointly offered gifts for National Children's Day for the children's happiness and joyfulness since the founding of the Company up until now in order to be a part of creating smiles, fun and happiness for the youth of the nation.

- Supporting the various donations to the community around renewable energy plants

Renewable Power Plant Branch	Date	Community-based activities around renewable energy plants
Ang Thong 3 Prachuap Khiri Khan	2017	<ul style="list-style-type: none"> Support for community activities and flood relief at Moo 1, Angthong Sub-district, Thap Sakae District, Prachuabkirikhan Province, amount 50,000 baht Support for community activities and flood relief at Moo 3, Angthong Sub-district, Thapsakae District, Prachuabkirikhan Province, amount 75,000 baht

Renewable Power Plant Branch	Date	Community-based activities around renewable energy plants
		<ul style="list-style-type: none"> • Support sports in the community • Support activities Security guard in the village • Support the concrete pouring of Wat Bang Pae • Important events • Solve urgent problems in plumbing • Community meeting for discussing the problems together • Electrical repair in the village in order to facilitate the passersby including the safety of the people in the village • Expand the village water supply for making people drink water. • Repair the water dam from the disaster
Klat Luang Petchaburi	24 Apr 2017	Ensure security of the community by doing activities with Tha Mai Ruak Police Station
Nong Chumphon Petchaburi	8 Jun 2017 6 Sep 2017 12 Dec 2017	Contribute to the Red Cross activities Sports match for harmony Support assistance teachers activity to Thairratwittaya School
Thung Kwao Lampang	18 Feb 2017	Support the traditional activities of the province, also support the public relations of the Department of Local Administration to provide information to people that coming to contact
Tao Pun Phrae	28 Oct 2017	Preserving Buddhism with the people in the community and sponsorship of sporting events
Ban Kluai Phetchabun	9 May 2017	Sponsor Anti-drug activities and sports competition at the Department of Local Administration Ban Kluai
Wichian Buri Phetchabun	2017	<ul style="list-style-type: none"> • Contribute for medical budget at Wichian Buri Hospital • Support for Aged School Activities • Join the Kathin Ceremonies together with the community • Budget for traditional northern relations 2017
Buang Sam Phan Phetchabun	16 Nov 2017	Rice Mill improvement activity at Khok Ya Yod Community
Dong Khon Chai Nat	29 Jun 2017	Install drinking water system for students at Theparat School
Ta Khit-Ta Sang Nakhon Sawan	24 Nov 2017 26 Jul 2017	Improve electricity system at Wat Khlong Khwan Improve the cafeteria for students at Wat Ban Phai School

Renewable Power Plant Branch	Date	Community-based activities around renewable energy plants
Wind Power Plant		
Korat Wind Energy Co., Ltd.	9 Jan 2017	National Children's Day Activity
	25 Apr 2017	Support CCTV Camera and computer Set to Sikhui Police Station
	1 Jun 2017	Sports Activity "The 8 th Khao Kradong Games"
	7 Jul 2017	The Asalha Puja Day and Vassa Day Project
	31 Jul 2017	Housing Adaptation Project for the Disabled, Elderly and those in need of rehabilitation.
Greenovation Power Co., Ltd.	9 Jan 2017	National Children's Day Activity at Bansirarumsamee School
	1 Apr 2017	Summer Novice Ordination
	1 Sep 2017	Anti-Drug Sport Event "the 16 th Huay Bong Games"
Wind Energy Development Co., Ltd.	9 Jan 2017	National Children's Day Activity
	15 Jan 2017	Winter Season Event "the 1 st Huay Bong Bike See Wind Wheel"
	21 Mar 2017	School Fence Building Project at Baan Noppattana School
	1 Sep 2017	Anti-Drug Sport Event "the 16 th Huay Bong Games"
	15 Sep 2017	Aging Training Project



6.3 Preserving Buddhism and Cultural Heritage

- **The Company jointly inherited Buddhism by doing activities, Tak Bat Devo – Dried Food**

Management and employees of the Company, together with the villagers around the Company, joined the merit-making ceremony for the monks on the occasion of the Ok Phansa Day. Tak Bat Devo is an event that helps create a bond, unity, harmony to employees and the surrounding area of the Company.



6.4 Opening Renewable Power Plants as a Learning Source for Educational Institutes and Surrounding Communities

Recognizing the importance of education and knowledge enhancement, GUNKUL opens the solar and wind farms to interested educational institutes, students, teachers, organizations, and surrounding communities. The visitors may expand knowledge and gain inspiration to develop renewable energy, which can be applied in everyday life. In 2017, GUNKUL welcomed the following educational institutes and organization totaling 589 persons:





Solar Farm	Date	Visiting Organization, School, and Education Institutes	Amount (person)
Solar Power Plant			
Si Chula Nakhon Nayok province	Feb 28, 2017	Mr. Montien Chanklum and the Board of Directors of TRIS Rating Co., Ltd.	4
	Apr 19, 2017	Mr. Tanakorn Charoen and others	4
	Jun 1, 2017	Mr. Yausnori Fukushima	3
	Jul 4, 2017	Dr. Teerayuth Janvithaya and the team from King Mongkut's University of Technology Thonburi	5
	Aug 4, 2017	Bank of China	3
	Aug 21, 2017	Mr. Ampon ailom, Energy Academician and others from Nakhon Nayok	20
	Sep 27, 2017	Mr. Zin Win Htike	5
	Nov 1, 2017	Prof. Rungarun Chansawang and the team from Kasetsart University	3
	Nov 2, 2017	Officers from Siam Commercial Bank Public Company Limited	15
	Nov 8, 2017	Professors and students from Rajamangala University of Technology Rattanakosin	5
Ban Kluai and Wichian Buri Phetchabun province	Feb 8, 2017	The officers team from the Department of Local Administration Ban Kluai	5
	Feb 15, 2017	Management of GUNKUL CHUBU	3

Solar Farm	Date	Visiting Organization, School, and Education Institutes	Amount (person)
	Nov 15, 2017	Phetchabun Provincial Energy Officer, the Department of Local Administration Subsomboon, Wang Hin and community energy volunteers	50
Bang Krachao Samut Sakhon province	Dec 24, 2017	Mr. Wirat, Chairman of Samut Sakhon Fertilizer Cooperative and the team	40
Bangna Solar Rooftop	May 26, 2017	Management of the Office of Energy Policy and Planning Ministry of Energy	10
	Jun 9, 2017	Management of Boonrawd Brewery Co., Ltd.	7
	Aug 23, 2017	Management of Huachiew Chalermprakiet University	4
	Aug 30, 2017	Management of NHK SPRING (THAILAND) CO., LTD.	10
	Nov 10, 2017	Management of Lenso Wheel Co., Ltd.	5
Wind Farm			
Supplu 1,2 and Wayu Huai Bong sub-district, Dan Khun Thot district Nakhon Ratchasima province	Jan 18, 2017	Professors and students from Suranaree University of Technology	60
	Feb 3, 2017	CDG Club Committee, Provincial Electricity Authority	30
	Feb 7, 2017	Management of Electrical System Administrator, Provincial Electricity Authority	5
	Feb 9, 2017	Officers from Provincial Electricity Authority Region 2	26
	Feb 22, 2017	Former management of Electricity Generating Authority of Thailand	5
	Mar 3, 2017	Electrical Engineers Association	65
	Mar 8, 2017	Professors from King Mongkut's University of Technology North Bangkok	6
	Aug 24, 2017	Senior Executive for Industrial Business Development and Investment (the 4 th) from Institute of Business and Industrial Development (IBID)	30
	Sep 14, 2017	Saraburi Energy Office	50
	Sep 25, 2017	Management of ZEYA and ASSOCIATES CO., LTD. and Burmese Mining Department	4
	Nov 2, 2017	Analysts from Commercial Bank of Thailand	23
	Nov 25, 2017	Professors and students from Ban Prang School, Dan Khun Thod District, Nakhon Ratchasima	14
	Dec 2, 2017	The committees and staffs from the Audit Association of Thailand	30



6.5 Promotion of Community Participation and Community Income Generation

GUNKUL has attached great importance to environmental management in all phases and steps of implementation – during the pre-construction phase, the construction phase, and the renewable energy-based power production phase, under the legal framework, government policies, and management systems with international standards. This aims to control and prevent environmental impacts of the renewable energy-based power production process and to rehabilitate and conserve natural resources and the environment, by enhancing community knowledge and understanding through different processes, as follows:

Pre-construction phase for solar power projects and wind turbine projects

1. Studying basic technical data, data on socio-economic conditions, cultures and traditions, and data on local community lifestyles.
2. Developing community participation plans and different data for communicating and creating an understanding about the Company's projects and preparing data on vacancies for local people.
3. Organizing activities that promote an understanding about projects and participating in "community" meetings to hear local communities' voice, under the legal framework and government policies.
- Organizing community meetings to listen to community opinions – The Community conducted site visits to present details pertaining to project implementation to local people, gathering to have discussions and consultations and share ideas concerning local communities, environmental conditions, and society as a whole. This aimed to ensure problem-solving and/or improvements to achieve the ultimate goal – sustainable development, whereby local people are involved in, and have ownership of, development. In addition, the Company prepared questionnaires to survey local communities' opinions to reinforce its relationships with them. Project-based activities in 2016 are as follows:

Number Company	Project Name	Community			ผลสรุปการประชาคม
		Date	Place	Amount (Person)	
Summing up the meeting for hearing and commenting on the wind power generation project					
1.	Progress Report Meeting on Mittraphap Wind Farm	9-Jun-60	at Nongpakbung Village	44	The villagers are aware of the steps and procedures of pre-construction projects, during construction and the progress of the project.
2.	Progress Report Meeting on Mittraphap Wind Farm	10-Jun-60	at Sangapatana Village	18	The villagers are aware of the steps and procedures of pre-construction projects, during construction and the progress of the project.
3.	Progress Report Meeting on Mittraphap Wind Farm	12-Jun-60	' at Klongsai Village	28	The villagers are aware of the steps and procedures of pre-construction projects, during construction and the progress of the project.
4.	Progress Report Meeting on Mittraphap Wind Farm	13-Jun-60	' at Bukha Village	32	The villagers are aware of the steps and procedures of pre-construction projects, during construction and the progress of the project.
1.	The 2nd Project Detail Report Meeting and Community Hearing	11-Oct-60	at the Department of Local Administration	80	The villagers are aware of the steps and procedures of pre-construction projects, during construction and the progress of the project, also listen to community feedback in order to identify and understand each other.
5. Greenovation Power Co., Ltd.	The second meeting of the Saran Windwin Farm Project from Saranom Wind farm		Huay Bong		

5. Greenovation Power Co., Ltd.



Construction period

1. Promoting jobs, incomes, and knowledge for local communities, by recruiting labor from local people, in order to encourage local communities' participation in all steps of implementation and provide them with a correct understanding and knowledge about the Company's operations and policies on a regular basis.
2. Providing channels for receiving recommendations and complaints (if any), with a function clearly assigned to be in charge of this.

Renewable energy-based production period

1. Monitoring the implementation of the measures for preventing and mitigating social and environmental impacts, as indicated in the EIA report.
2. Listening to recommendations to improve activities in line with local needs.
3. Promoting and generating incomes for local communities, e.g. through hiring local people.

7. Achievements



Get the certificate as a Members of the Private Sector Collective Action Against Corruption (CAC) from the Private Sector Collective Action Coalition Against Corruption Council



CSR-DIW Continuous Award 2017



Received the Honorable Fame "Cooperative Education Project" from Rajamangala University of Technology Phra Nakhon



Gunkul Engineering Public Company Limited

**1177 PEARL BANGKOK BUILDING FL8 Phahonyothin Rd.
Phayathai, Phayathai, Bangkok 10400
Tel. 0-2242-5800 (AUTO)
Fax. 0-2242-5878-9
www.gunkul.com**

Gunkul Engineering Public Co.,Ltd.