



QTC ENERGY PCL.

QTC Energy Public Company Limited

ANNUAL REPORT 2018



SAVE THE WORLD
SAVE YOUR MONEY



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Message from the Chairman of the Board



In 2018, the Thai economy grew by 4 percent from 2017. This is the highest growth over the past six years with the value of exports, private sector consumption and investments showing good continuous growth. Continual development of strategies to manage domestic and foreign economic changes caused performance in 2018 to improve when compared to the previous year's performance.

Over the past 23 years, QTC Energy Public Co., Ltd. has remained firm in its commitment to business operations aimed at building security and sustainability in line with set visions and missions to make the Company a world-class, one-stop manufacturer and service provider of technology in the electricity industry with corporate social responsibility and good governance in the main business of manufacturing quality electricity transformers with acceptance worldwide and the energy business. The Company continually perceives income to generate secure and sustainable returns.

The Company places importance on research and development of new products to meet customer needs such as Super Low Loss transformers as an environmentally-friendly product for reducing global warming, conserving energy or managing electricity with the Smart Transformer Monitoring System installed on transformers for management via the Cloud system from anywhere around the world by using 3G and 4G communication systems. As the world transitions

into the digital age, the Company needs to modify strategies and use advanced technologies to maintain old customer bases while expanding new customer bases. The Company continues to make improvements to adapt to the digital world.

The Company adheres to the principle of management with corporate governance and responsibility to stakeholders with importance placed on the environment and society until the Company has earned the acceptance and trust of domestic and foreign investors. In 2018, the Company achieved an excellent corporate governance assessment score for the fourth consecutive year, thereby reflecting the importance of corporate governance. The Company hopes to make improvements and maintains management standards under the framework of corporate governance.

In 2019, the Thai economy is expected to have better growth than the previous year with factors from clarity of the election, which will build significant confidence among investors and steer government sector investments in infrastructure, including the progress of major investment projects along with confidence in the industrial sector, household sector spending and improving investments in the private sector and international investments.

The Company is determined to operate the business to increase business opportunities, maintain financial stability and increase capacity to compete under good governance for the maximum benefit of the Company, subsidiaries and stakeholders.

The Board of Directors would like to thank supporters, stakeholders and everyone involved at home and abroad who have supported the Company. Furthermore, the Board of Directors would like to assure the aforementioned persons that the Board of Directors will manage to the fullest capacity with determination to govern the Company's secure and sustainable growth for the future.

A handwritten signature in black ink, appearing to read 'Krirkrai Jirapaet', written over a light blue rectangular background.

(Mr. Krirkrai Jirapaet)

Chairman of the Board

Message from the Chief Executive Officer



Dear Stakeholders,

Over the past year of 2018, the Thai economy has recovered slightly from 2017. The main factor continues to be government sector policies on investment to develop infrastructure. Biddings for work from the Metropolitan Electricity Authority and the Provincial Electricity Authority have begun, but only to a certain extent. Thus, government sector sales have dropped by 36.34 percent from 2017. Therefore, the Company has had to market overseas by performing OEM work for customers in Japan and Australia by developing manufacturing processes with higher standards and increasing production capacity to meet customer needs by group together with building maximum confidence for customers. This put overseas sales in 2018 at 14.88 percent higher than 2017. The domestic private sector market grew slightly by four percent when compared to 2018 due to slow investment growth from the industrial and real-estate sectors. In the meantime, severe pricing competitions have made it necessary for the Company to review cost structures for better competitive capacity by supporting TQM and KAIEN activities continually and more intensely while maintaining the highest quality of goods and services, causing production costs to be reduced. Furthermore, in 2018, the Company began to use the strategy of making a difference by educating customers on special properties and differences in the Super Low Loss transformer innovation developed by the Company when compared to ordinary transformers in order to provide a “SAVE THE WORLD, SAVE YOUR MONEY” option, which attracted interest from many customers and was able to generate over 11 million baht in sales during its first year. Overall, the Company’s economic performance in 2018 in the business of manufacturing, repairing and distributing electrical transformers returned to generate a profit of 4.10 million baht.

Regarding the investment project in the L Solar 1 Power Plant business, the Company changed the name to Q Solar 1 Co., Lt. The project was able to generate over 140 million baht of income for the Company and made over 70 million baht in profit per year. Concerning the joint venture in Green Earth Power (Thailand) Co., Ltd. (GEPT) at a share ratio of 15 percent of by QTC Global Power Co., Ltd. in the Minbu Solar Power Plant Project (Myanmar), the Company exercised the right to resell shares to the original shareholder because the Company found high risk in the project’s success. Furthermore, the Company closed the business of QTC-PANCO Co., Ltd. (Laos) because the Company (the aforementioned company) was unable to manufacture and distribute transformers according to goals. In the aforementioned operations, the Company thoroughly considered impacts for the maximum benefit of shareholders and stakeholders and the Company will continue to seek investment opportunities in the energy business or new products in line the organization’s vision in order to distribute risk and strengthen the organization to become a world-class leader in the future.

With regard to significant management in the organization in 2018, the Company performed self-assessments on counter corruption measures and requested accreditation from CAC in Quarter 4/2018. The Company passed consideration for accreditation and will have a certificate awarding ceremony in February 2019. Assessment of employees' work-life balance in 2018 found work-life balance to be slightly higher than 2017 in line with the Company's overall economic performance. The Company is concerned with the issue of employees' work safety, which remains a high risk. Although the Company has strong preventive measures in place, lack of awareness among employees may cause severe accidents. Nevertheless, the Company needs to intensify preventive measures by allowing more employees to participate in 2019 and future years. In the area of environment management, the Company places importance on managing disused materials from manufacturing by entering the project to manage industrial waste in the area of the EEC in order to improve capacity for using waste. The Company received the 3Rs Award. In the future, the Company will improve waste management levels to "Zero Waste to Landfill".

Furthermore, in 2018, the Company constructed and added to the 4th floor of the office building to increase workspace for employees from all companies in the group to combine management centers. The center is officially open for operations.

In the area of involvement in community development, the Company emphasizes public participation in communities through activities, public hearings and community meetings with QTC. In 2018, the Company retained trust from the community, which participated in discussions and exchanged opinions. The community emphasized promoting students' education in the form of inspirational activities and contact with reality, which are important questions for the Company to study and plan operations.

Finally, on behalf of the Board of Directors, executives and all employees, I would like to thank our shareholders, customers, trading partners, community residents and all stakeholders for supporting and encouraging the Company. The Company promises to follow the Company's stated vision, obligations and development framework and the Company will dedicate to develop protocols, instruments, machines and human capital to be able to stand in the Industry 4.0 Era with security and sustainability.

"My team and I are determined to follow our visions and missions to lead QTC's business toward sustainable growth. We would like to thank everyone for their confidence and trust....."



(Mr. Poonphiphat Tantanasin)

Chief Executive Officer

Financial Highlights

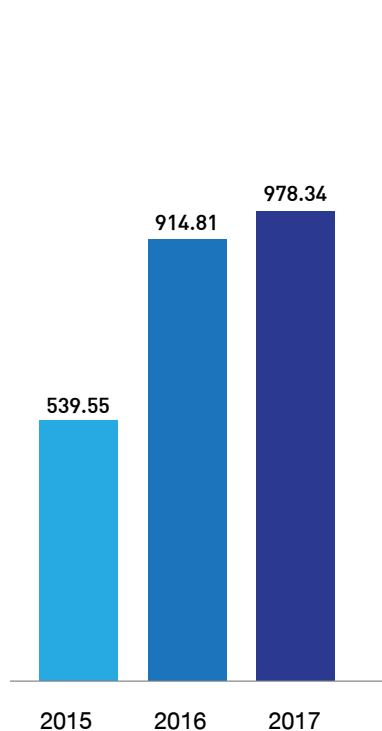
(Unit : Million)

Financial	2016	2017	2018
Revenue from sales and services	531.23	901.53	958.05
Total revenue	539.55	914.81	978.34
Cost of sales and services	(503.56)	(760.81)	(747.76)
Gross profit	35.99	154.00	230.58
Selling and Administrative expenses	(127.94)	(394.72)	(193.89)
Profit before interest and income taxes	(91.95)	(237.99)	35.66
Net profit	(80.59)	(247.25)	(0.12)
Total comprehensive income (loss) for the year	(80.60)	(252.46)	(0.48)
Net profit per share	(0.34)	(0.89)	0.001
Dividend per share	0.03 (270,000,000)	- (341,088,220)	*** (341,092,557)
Total assets	1,220.80	2,037.27	1,918.99
Total liabilities	463.14	595.18	477.34
Shareholders' equity	757.67	1,442.09	1,441.64

*** Waiting for the approval of the annual general Meeting of shareholders 2019

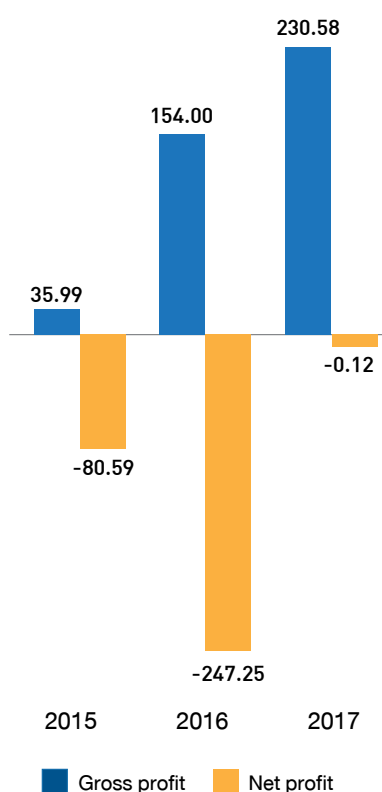
Financial Highlights

(Unit : Million Baht)



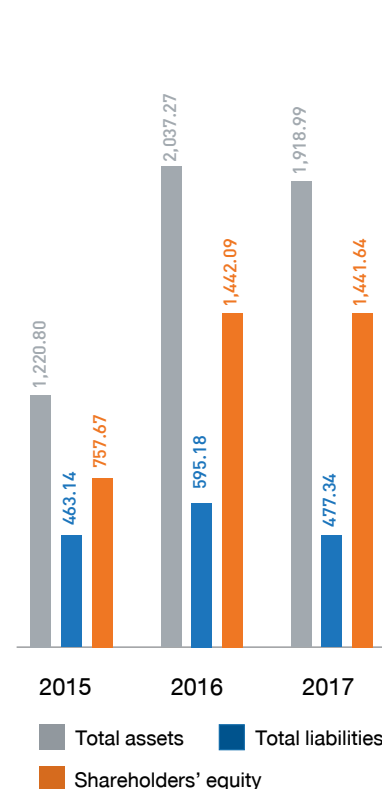
Gross profit / Net profit

(Unit : Million Baht)



Total assets, Total liabilities and Shareholders' equity

(Unit : Million Baht)



Policy and Overview of Business Operations

1. Background

Formerly known as Quality Transformer Co., Ltd., QTC Energy Public Co., Ltd., was registered on 19 July 1996 with a starting registered capital of 10 million baht to conduct the businesses of manufacturing and distributing electricity distribution transformers. On 4 July 2003, the company changed its name to QTC Transformers Co., Ltd., and on 19 August 2010, the company became a public company limited under the name of QTC Energy Public Co., Ltd., and listed on Stock Exchange Thailand on 28 July, 2011 with Mr. Poonphiphat Tantanasin as the founder. Mr. Poonphiphat Tantanasin has over 43 years of experience working in the transformer manufacturing industry. He has worked with major and leading companies manufacturing transformers domestically and held responsibilities in various aspects, including design, assembly and production as well as sales and marketing, so he has knowledge and expertise covering all aspects in the field of transformers. Furthermore, the company's administrative team, engineers and most company employees have had knowledge, experience and expertise in the electricity transformer business for more than 30 years. Moreover, they have received training from leading transformer manufacturing countries in foreign countries, such as Germany and Japan. The aforementioned experience has helped the company develop high quality transformers which have become widely accepted among the government enterprise customer group involved with electricity, namely, the Metropolitan Electricity Authority, the Provincial Electricity Authority, and in private sector customer groups both domestically and abroad.

Throughout the past, the company has continually developed transformer products and received accreditation according to various standards, such as Thai Industrial Standards TIS 384-2543 from the Thai Industrial Standards Institute, Ministry of Industry, ISO 9001:2000 standards for designs, production, and maintenance of distribution transformers. Furthermore, the company is able to produce quality transformers meeting various international standards, which is proof of the international quality of the transformers manufactured by QTC.

2 Overview of Business Operations & Key Developments

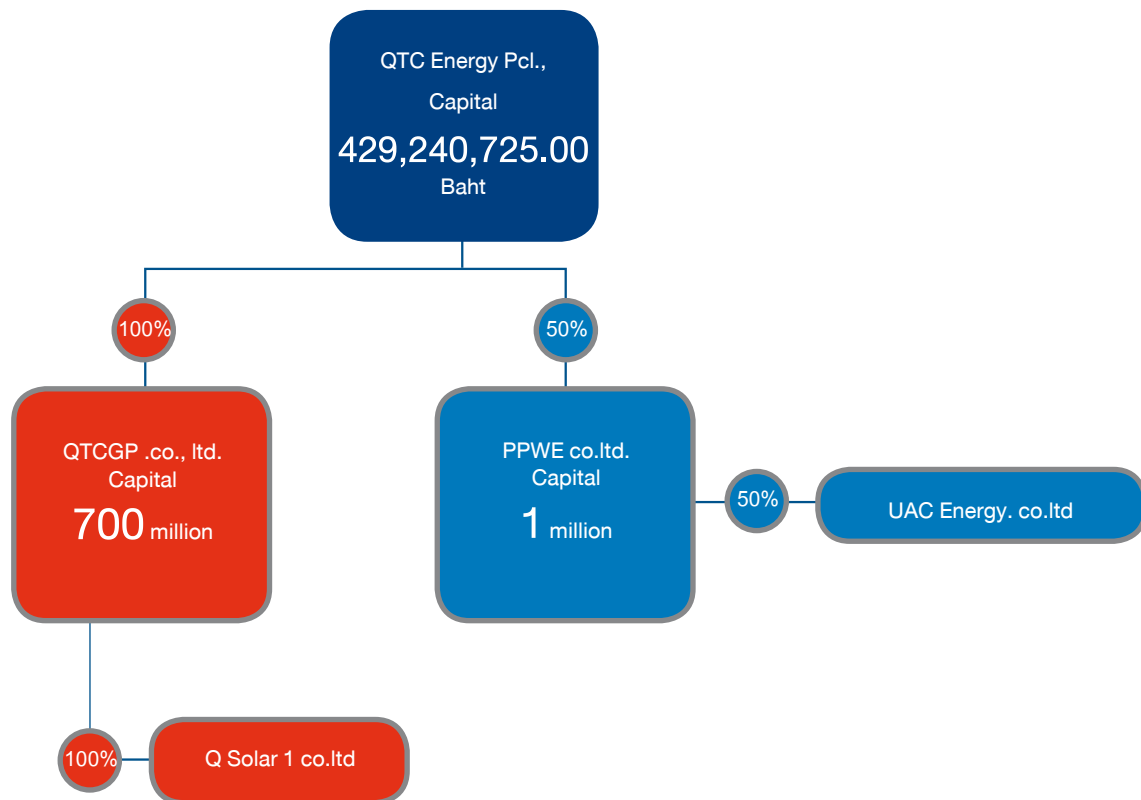
QTC Energy Public Co., Ltd., conducts the businesses of manufacturing and distributing custom made transformers to domestic and foreign customers under the "QTC" trademark and customer trademarks. At present, the company's transformer projects can be categorized as follows:

1. Distribution Transformers
 - 1.1 Hermetically Sealed Oil Type Distribution Transformers.
 - 1.2 Open Type Transformers with Conservators.
2. Power Transformers
3. Cast Resin Transformer
4. Super Low Loss Transformer (Amorphous Metal Distribution Transformer : AMDT)
5. Special Transformer is designed and manufactured according to useage and features to customers such as Earthing Transformer, Unit Substation, Pad mounted.

Furthermore, the company also provides various types of services for customers, such as scheduled checks and maintenance, transformer repairs and maintenance, transformer oil fill services, transformer rental services, etc., in order to support customer needs and facilitate both customers who have purchased QTC transformers and other customers in general.

The company has one subsidiaries and one associated company include

1. QTC Global Power Co., Ltd. (subsidiaries Company) produces electricity and other energy, the establishment on 28 September 2016 capital 700 million
2. PPWE Co., Ltd. (associated company) produces energy, the establishment on 12 January 2016 capital 1 million.



Progress with Purpose & Vision

Quality of DETAILS

Attention to DETAILS is at the heart of our principles and encompasses every area of QTC with comprehensive coverage from staff, thought processes, work methods, technological advancement, factory operation, products and consideration for society and environment.

Vision

To be a technology provider with world-class standard in power industry along with social and environmental responsibilities and good governance

Mission

1. Providing integrated technology solution for businesses in power industry
2. Developing environmental-friendly products, services and internal processes to create added value in the value chain
3. Developing human resource to enhance professional capabilities in both soft skills and hard
4. Operating in good governances along with corporate social responsibility
5. Building sustainable growth businesses in long-term to gain trust of all stakeholders

Management Principles

QTC is firmly committed to three good corporate governance principles.

1. Ethical, just and transparent management.
2. Product and service provision meeting international quality standards.
3. Focus on corporate social and environmental responsibility in strict compliance with human rights principles.

The company's vision and mission are reviewed annually with review and approval from the company's Board of Directors on 13 December 2018 to ensure the concurrence of the company's vision and mission with current economic conditions.

The details of significant company developments in the past are as follows:

2004

- The company increased registered capital by 40 million baht from the original registered capital of 10 million baht by issuing 400,000 new common shares valued at 100 baht per share in order to propose sales to existing shareholders, which put the company's registered capital at 50 million baht.
- The company was accredited by Thai Industrial Standards TIS 384-2543 for power transformers from the Thai Industrial Standards Institute, Ministry of Industry.
- The company's 250 kVA and 1000 kVA transformers passed short circuit testing from CESI, Italy.

2005

- The company increased its registered capital by 50 million baht from the original registered capital of 50 million baht by issuing 500,000 new common shares valued at 100 baht per share in order to propose sales to existing shareholders, which put the company's registered capital at 100 million baht.

2007

- The company's 167 kVA transformers passed short circuit testing from KEMA, the Netherlands.
- The company received ISO 14001:1996 standards accreditation from RWTÜV, Germany (2001).

2008

- The company received OHSAS 18001:2007 accreditation for occupational health and safety management systems from UKAS, England. SGS Company (Thailand) provided accreditation.
- The company's 500 kVA and 2000 kVA transformers passed short circuit testing from CESI, Italy.
- The company was granted the right to use the Q-MARK from the Joint-Standing Committee on Commerce, Industries and Banking (JSCCIB) consisting of the Thai Chamber of Commerce, the Federation of Thai Industries, and the Thai Bankers' Association as a mark for certification of product quality, business ethics, responsibility to customers, consumers and society including the manufacturing, trade and service sectors as follows:
 - Single phase oil type distribution transformers with sized 1-167 kVA with maximum voltage of 36 kv and three-phase oil type distribution transformers sized at 1-2500 kVA with maximum voltage of 36 kV with quality meeting the standards of trade partner countries and the standard quality of Thailand, which was issued on 27 May 2008 and effective until 26 May 2010.
 - [Standards for] the distribution, services, repairs, and installations of transformers, including corporations, issued 21 March 2008 and effective until 20 March 2010.
- The company was granted ISO 14001:2004 accreditation for environmental management systems from UKAS, England, and NAC, Thailand. SGS Company (Thailand) provided certification.
- The company received the Thai Chamber of Commerce Business Ethics Standard Test Award of 2008 from the Thai Chamber of Commerce as an organization with ethical management according to the ethics of the Thai Chamber of Commerce comprising the following six key issues:
 1. Fair treatment of all parties concerned.
 2. Disclosure of information and transparency.
 3. Risk management.
 4. Promotion of excellent corporate practice.
 5. Corporate social and national responsibility.
 6. Yielding sustainable tangible returns for the nation.
- The company increased registered capital by 50 million baht from the original registered capital of 100 million baht by issuing 500,000 new common shares valued 100 baht per share for proposed sales to existing shareholders at the proposed sales price of 100 baht per share.
- The company was awarded the International Europe Award for Quality from exporting transformers for distribution in Spain.

2009

- The company was granted ISO 9001:2008 accreditation for quality management systems from UKAS, England, and NAC, Thailand. SGS Company (Thailand) provided accreditation.
- The company was awarded the “D” Class Certificate of Clean Food Good Taste standards from the Department of Health, Ministry of Public Health.

2010

- The company received the 2nd Annual SME National Award of 2009 in machinery and equipment category from the Office of Small and Medium Enterprise Promotion (OSMEP), Ministry of Industry.
- The company received the Prime Minister’s Industry Award 2010 for SME Industrial Management from the Ministry of Industry.
- In September of 2010, the company received extension of rights to use the Q-MARK from the Joint-Standing Committee on Commerce, Industries and Banking (JSCCIB) in the production sector and the trade and services sector as follows:
 1. Single phase oil type distribution transformers sized at 1-167 kVA with maximum voltage of 36 kv and three-phase oil type distribution transformers sized at 1-2500 kVA with maximum voltage of 36 kV and quality to meet the standards of trading partner countries as well as the quality standards of Thailand, which were issued on 10 September 2010 and effective until 9 September 2012.
 2. Distribution, sales, installation, and maintenance of transformers, which were issued on 10 September 2010 and effective until 9 September 2012.
- The company received a “D” Class Certificate for Clean Food Good Taste standards from the Department of Health, Ministry of Public Health.
- In August of 2010, the company became a public company limited and changed its name to QTC Energy Public Co., Ltd.

2011

- In March, the company registered changes in share value from the original value of 100 baht per share to 1 baht per share, including an increase in registered capital by 50 million baht from the original amount of 150 million baht, which put the registered capital at 200 million baht. Shares were divided as follows:
 - Forty-five million new common shares which were offered for public sales and
 - Five million new common shares which were offered for sale to company directors and employees.
- In April, the company constructed new offices at 2/2 Soi Krungthep Kritha 8 (5), Krungthep Kritha Rd., Huamark, Bangkok, 10240
- In July, the company proposed an initial public offering (IPO) of shares and Stock Exchange of Thailand listed the company’s ordinary shares as registered shares and began buying and selling on 28 July 2011 under the company’s abbreviated name for buying and selling shares, QTC.
- In August, the company was a top recipient of a Zero Accident Award (no occupational accidents causing ongoing work to stop over the past year for no less than 1,000,000 working hours) from the Zero Accident Campaign of 2011 from the Department of Welfare and Labor Protection, Ministry of Labor.
- In October, the company received the Top Corporate Governance Award (Eastern Region) from the Thai Chamber of Commerce Good Corporate Governance Commission in cooperation with the Office of the NCCC and the Thai Chamber of Commerce University.
- In November, the company was considered by the Thai Laboratory Accreditation Scheme, Electronics-Telecommunications, which decided to approve accreditation of the company’s laboratory according to TIS 17025-2548 standards with the Thai Industrial Standards Institute
- In December, the company was awarded for food hygiene with a “D” Class certificate for “Clean Food, Good Taste” from the Health Department, Ministry of Public Health for the second consecutive year.

2012

- In February, the company was officially awarded laboratory accreditation for laboratory testing ability in compliance with TIS Standard No. 17025-2548 (ISO/IEC 17025:2005), Certificate No. 12007/T 309 from the Thai Industrial Standards Institute, Ministry of Industry.
- In February, the company moved to work at its new headquarters located at 2/2 Krungthep Kritha 8 (5), Krungthep Kritha Rd. Huamark, Bangkok, Bangkok 10240.
- In March, the company commenced the construction of a plant in order to expand production capacity by adding silicon steel slitting machines and silicon steel cutting machines. The construction was complete and the plant was open for operations in December in Pluak Daeng, Rayong.
- In April-September, the company participated in an industrial logistics efficiency building project by the Department of Primary Industries and Mines in cooperation with the Technology Promotion Association (Thailand –Japan).
- In June, the company was awarded a certificate for being a health-promoting workplace by Honorary Professor, Dr. Kasem Wattanachai, Privy Councilor.
- In July, the company participated in a cooperative project for the production of Amorphous Distribution Transformers (AMDT) with Hitachi Metals Japan.
- In October, 100 KVA 3 Ph 50 Hz 22000-400/230 V, 100,500 KVA 3 Ph 50 Hz 33000-400/230 V. and 150,300,750 KVA 3 Ph 50 Hz 24000-416/240 V electricity transformers passed short circuit testing by the CESI in Italy with Type Test Certificate No.B2030322-27.
- In September, the company was awarded a certificate for meeting clean technology criteria for entrepreneurial development from the Governor of Rayong.

2013

- In January, the company was granted accreditation for laboratory testing in compliance with TIS 17025-2548 (ISO/IEC 17025:2005) Standards, Certificate No. 12007/T 309 from the Thai Industrial Standards Institute for the second consecutive year in which the company applied for accreditation.
- In May, the company produced Amorphous Distribution Transformers (AMDT) in cooperation with Hitachi Metals Japan with 1000 kVA sized transformers for commercial distribution with the first transformer in October.
- In June, the company participated in an in-depth consulting project for SMEs with the lean standards of the Department of Industrial Promotion.
- In June, the company participated in a consultation project for 5-S activities by the Technology Promotion Association (Thailand –Japan) for corporate restoration and development in increase production capacity with the 5-S system.
- In June, the company was awarded a Class 3 Green Industry certificate by the Ministry of Industry.
- In June, the company signed a joint venture project contract for the construction of electricity transformers in Vientiane, Laos.
- In July, the company purchased a Distribution Transformer Test System DTTS 3-2500 from HAEFELY Switzerland in order to enhance the efficiency of testing and certification for increasing work volume in the future. The installation and use began in February of 2014.
- In July, the company commenced the construction of a plant for manufacturing tanks for electricity transformers.
- In November, the company was granted CSRI Recognition in the Rising Star category by the Corporate Social Responsibility Institute, Stock Exchange of Thailand.

2014

- In January, the company laid out its main foundation (Phase 1) for modifying processes by implementing the Total Quality Management System (TQM) to sustainably develop the organization.
- In February, the company applied for participation in TLC: ISO50001 Project with the Thai Industrial Standards Institute and the company is currently requesting certification from SGS Co., Ltd.
- In March, company has received the honor a card to show that they have been taken to prevent and solve the problem of drugs in operations by the white factory project. Level 3 from the Department of labour protection and welfare, and Rayong province.
- In May, the company completed construction of transformer tank factory buildings.
- In July company sent the first set of transformers to sell in Japan successfully.
- In November, the company received the 5S Model Award 2014 for the Bangkok Office area, the CSR Office area, Factory No. 3 areas and the Coiling Room area.
- In November, the company received three awards for registered companies for corporate social responsibility from the Stock Exchange of Thailand at the SET Award as follows:
 1. CSR Recognition 2014 in the general category.
 2. CSR Award 2014 in the outstanding category.
 3. CSR Award 2014 in the excellence category.

2015

- In January, the Company began to lay out key foundations (Phase 2) for process modification by implementing total quality management toward sustainable corporate development.
- In March, the Company was granted ESG100 Certification by Dr. Pipat Yodprudtikan, Director of Thaipat Institute, for outstanding business sustainability.
- In March , the Company established subsidiary company QTC Panco Co.,Ltd. The company hold 85% of total shares capital 20 million.
- In April, the Company signed an exclusive distribution agreement with Industrias Mecano Electricas Fontecha Yebenes, S.L. (IMEFY) to become the exclusive sales representative in Thailand for Cast Resin transformers from Spain. We will distribute under the QTC brand and manufacture under IMEFY.
- In July, the Company applied for participation in an organization health project with Share Foundation to develop processes and improve corporate happiness for work life balance.
- In September, the Company received a certificate for passing an evaluation by the Department of Disease Control, Ministry of Public Health, at good levels as a happy workplace free from disease and danger at the provincial level.
- In October, the Company was granted the SET Sustainability Award 2015 as the only MAI-listed company to receive this award and the Thai Sustainability Investment Award (Sustainable Shares) from the Stock Exchange of Thailand.
- In October, the Company was evaluated for CG Scorecard by IOD and found to be excellent as a confirmation of good and transparent governance.
- In November, the Company was certified by the 5S Model Award 2015 for production areas at Factory 4, warehouse areas and electrical transformer repair areas.
- In November, the Company received the Best Investor Relations Award and the Company was the only MAI-listed company to receive the Best Investor Relations Award from the Stock Exchange of Thailand
- In November, transformers with power capacity of 75 kVA and 300 kVA passed the Short Circuit Test by CESI, Italy.
- In December, the Company received the Best Corporate Governance Award of 2015 for the Central Region from Prof. Dr. Kasem Wattanachai in praise of entrepreneurs who operate businesses with principles of corporate governance by adhering to transparency and honesty.

2016

- In January, the Company laid key foundations (Phase 3) in the work to improve processes by applying the Total Quality Management system (TQM) to develop the company for sustainability.
- In January, the Company established a joint company, namely, PPWE Co., Ltd. and holds 50 percent of registered shares at the amount of one million baht to operate an energy business in a joint venture with UAC Global PCL.
- In June, the Company increased its registered capital from 70 million baht from the previous value of 200 million baht to become 270 million baht by the issuance of 70 million new ordinary shares at one baht marked price per share for sales to persons in a limited circle.
- In September, the Company was awarded a certificate for being a pioneer company registered by Thailand Greenhouse Gas Management Organization (Public Organization).
- In September, the Company established a subsidiary, namely, QTC Global Power Co., Ltd. to operate an energy business with a registered capital of 10 million baht.
- In September, the Company was given the Outstanding Corporate Governance Award (Eastern Region) from the Committee for Promoting Codes of Conduct and Anti-Corruption, Thai Chamber of Commerce, together with the Bureau of Corruption Prevention in State Enterprises and Private Sector.
- In October, the Company received the Innovative Organization Award of 2016 from Dr. CHaiyawat Wibulsawasdi, Chairman of the Stock Exchange of Thailand.
- In October, the company was rated excellence in the CG Scorecard by the IOD, thereby providing affirmation to good corporate governance and transparency.
- November: The Company increased registered capital of QTC Global Power Co., Ltd. from the original amount of 10 million baht to 140 million baht.
- In December, the Company was awarded the Green Industry Level 4 by the Ministry of Industry.
- In December, the Company received the Sustainability Report Award for the year 2016 as organized by the CSR Club, Thai Listed Companies Association.

2017

- January: The Company began laying down key foundations (Phase 4) for improving processes by implementing total quality management (TQM) to develop the organization's sustainability.
- January: The Company invested in increasing amorphous transformer production lines.
- May: The Company purchased 15 percent of shares in Green Earth Power (Thailand) Co., Ltd. to invest in the Minbu Solar Power Plant Project in Myanmar.
- June: The Company issued and proposed sales of warrants to purchase common shares (QTC-W1) to current shareholders according to shareholding ratios at no more than 67,500,000 baht and increased registered capital from 270 million baht to 337.50 million baht.
- August: The Company purchased all shares in L Solar 1 Co., Ltd. and increased registered capital from 337.50 million baht to 359.24 million baht.
- October: The Company allocated 70 million baht of capital increase shares by offering limited sales to individuals and increased registered capital from 359.24 million baht to 429.24 million baht.
- October: The Company received the 5S Award, Silver Level.
- December: The Company received the Thai Chamber of Commerce Business Ethics Standard Test Award of 2017 from the Thai Chamber of Commerce.
- December: The Company received the Sustainability Report Award of 2017 provided by the CSR Club and the Thai Listed Companies Association.

2018

- In January, the company established the important foundation (phase 5) for improving process by applying Total Quality Management (TQM) in order to develop knowledge to be sustainable.
- In January, the company resold shares to Green Earth Power (Thailand) Company Limited for co-investing in Minbu Solar Power Project in Myanmar.
- In June, the company was certified by Green Label for transformer products from Thailand Environment Institute.
- In August, the company received the Workplace Health Promotion Award (Advanced Level) from Thai Health Promotion Foundation.
- In August, the company received the 3R Award from the Department of Industrial Works.
- In August, the company received the Certificate from presenting a contribution in Thailand Quality Conference under the theme of Kaizen Activity Promotion Process for 3-Time Efficiency.
- In September, the company received the Standard TGO Guidance Certificate of the Carbon Footprint for Organization from Thailand Greenhouse Gas Management Organization (Public Organization)
- In October, the company received the Thai Chamber of Commerce Best Award 2018 from Thai Chamber of Commerce.
- In December, the company received the Sustainability Report Award 2016 from CSR Club of Thai Listed Companies Association.

3. Policy and Business Performance Goals

The Company aims to become a world class transformer manufacturer focused on developing the Company's transformer quality and standards to build maximum confidence and efficiency for acceptance among customers domestically and abroad. The company has the goal to gain 1.5 billion baht before 2024.

The Company is focused on maintaining original customer bases and expanding new customer bases, particularly in the ASEAN Economic Community. The Company enhanced production efficiency in 2012 – 2017 to support competition after the merging of the AEC. In research and development, the Company has never stopped developing new products to conserve energy, reduce global warming and meet the needs of every customer group, giving the Company strong competitive capacity today.

The Company is also aware of the organization's security and sustainability. Thus, the Company expanded the business to include energy businesses while seeking business opportunities domestically and abroad to build a strong foundation and build the business further. In 2017, the Company began investing in energy businesses such as alternative energy power plants. To achieve this goal and continue this business during 2018-2024, the company currently has many projects that are under feasibility studies.

The Company recognizing the value of human resources. Therefore, the Company invested in personnel by emphasizing development along human capital guidelines to develop personnel in connection with the organizations strategies in order to be able to compete in the 4.0 Era economy and improve supply chain management. Raw material movement among countries in the AEC is exempt from Customs taxes, which are reduced to 0 percent. Each country has a policy to reduce logistics costs. The Company must be prepared for convenient, fast and Customs tax-free movement of goods among AEC countries in order to boost competitive ability. Furthermore, the Company places importance on developing the Company's service quality and efficiency along with developing processes with total quality management (TQM) in order to enable the personnel to work systematically and effectively, increase competitive advantages and create maximum customer satisfaction.

To manage the organization and achieve the stated goals above, the Company has adhered to business operation principles under the Quality of Details process, governance and business ethics in order to grow with sustainability.

Board of Directors



1. Mr. Krirk-Krai Jirapaet
Chairman of Board



2. Mr. Natthaphon Lilawatthanun
Director



3. Mr. Phonrat Piathanom
Director



4. Dr. Kamol Takabut
Director



5. Mrs. Wasara Chotithammarat
Director



6. Mr. Suroj Lamsam
Director



7. Mr. Viraphonh Viravong
Director



8. Mr. Poonphiphat Tantanasin
Director



9. Mr. Ruangchai Kritsnakriengkrai
Director

1. Name	Mr. Krirk-Krai Jirapaet
Position	Chairman of Board
Age	76 years
Educational qualification	<ul style="list-style-type: none"> Master of Economics, Sydney University, Australia B.A. (Hons) Political Science, Chulalongkorn University
Directorship training	<ul style="list-style-type: none"> Role of Chairman (RCP) Class 11/2005 Director Certification Program (DCP) Class 61/2005 Audit Committee Program Class 8/2005
Work Experience	<ul style="list-style-type: none"> Chairman/Independent director, Banpu Public Company Limited Member, National Reform Council Minister of Commerce Director ,Monetary Policy Committee, Bank of Thailand Vice Minister, Minister of Tourism and Sports Advisor to the Prime Minister, Office of the Prime Minister Permanent Secretary, Ministry of Commerce Director, Board of Directors, the Bank of Thailand
Current job positions	<ul style="list-style-type: none"> Chairman, QTC Energy Public Company Limited Chairman of Advisors to the Company, Banpu Public Company Limited Chairman, Triple i Logistics Public Company Limited Vice President, Council of Trustees of the University of the Thai Chamber of Commerce/Chairman of the Executive Directors, UTCC Chairman, Thai Garment Development Foundation Chairman, the Thai Institute of Directors(IOD)
In any listed companies	QTC Energy Public Company Limited/ Triple i Logistics Public Company Limited/ Banpu Public Company Limited
In any non-listed companies	Thai Chamber of Commerce / Thai Garment Development Foundation / Thai Institute of Directors
Appointment Date	22 June 2016
% of shareholding in the Company	None

2. Name	Mr. Natthaphon Lilawatthanun
Position	Director/ Chairman of the Audit Committee
Age	61 years
Educational qualification	Master of Business Administration Program (MBA) ,Chulalongkorn University
Directorship training	<ul style="list-style-type: none"> Director Accreditation Program (DAP), Class 10/2004 Audit Committee Program (ACP), Class 3/2004
Work Experience	<ul style="list-style-type: none"> Director, Unimit Engineering Public Company Limited Director, Unique Mining Services Public Company Limited Director and Director manager,Excellent Business Management Company Limited Director and Director manager ,NBS Research & Consulting Company Limited
Current job positions	<ul style="list-style-type: none"> Director and Chairman of Board Audit committee, QTC Energy Public Company Limited Director, Unimit Engineering Public Company Limited Director and Director manager ,Excellent Business Management Company Limited Director and Director manager , NBS Research & Consulting Company Limited Director manager, Excellent Digital Development Company Limited Director manager, Jobmyway Recruitment Company Limited
In any listed companies	QTC Energy Public Company Limited / Unimit Engineering Public Company Limited
In any non-listed companies	Excellent Business Management Company Limited / NBS Research & Consulting Company Limited/ Excellent Digital Development Company Limited/ Jobmyway Recruitment Company Limited
Appointment Date	28 July 2011
% of shareholding in the Company	None

3. Name	Mr. Phonrat Piathanom
Position	Director/ Chairman of the Nomination, Remuneration and Corporate Governance Committee/ Audit Committee
Age	66 years
Educational qualification	<ul style="list-style-type: none"> Master's Degree, Management, Sasin Graduate Institute of Business Administration of Chulalongkorn University Master's Degree, Business Administration, National Institute of Development Administration
Directorship training	<ul style="list-style-type: none"> Director Certification Program (DCP), Class 118/2009 Director Accreditation Program (DAP), Class 78/2009 Audit Committee Program(ACP), Class 31/2010 Role of the Compensation Committee (RCC),Class 31/2014)
Work Experience	<ul style="list-style-type: none"> Director, NIDA Center for Enhancing Competitiveness Director, MDICP Intertrade Company Limited Director, MDICP Holding Company Limited
Current job positions	<ul style="list-style-type: none"> Director and Audit committee, QTC Energy Public Company Limited Director, Srangkonkeng Company Limited Director,Audit committee, Ziga Innovation Public Company Limited
In any listed companies	QTC Energy Public Company Limited
In any non-listed companies	Srangkonkeng Company Limited
Appointment Date	28 July 2011
% of shareholding in the Company	Ordinary shares 276,500 shares, representing 0.08 per cent
4. Name	Dr. Kamol Takabut
Position	Director/The Nomination, Remuneration and Corporate Governance Director
Age	69 years
Educational qualification	<ul style="list-style-type: none"> Dr. Ing. (Thermodynamiques & Energetique) Perpignan University, 66025 Perpignan ,France
Directorship training	<ul style="list-style-type: none"> Director Certification Program (DCP), Class 67/2005
Work Experience	<ul style="list-style-type: none"> Independent Director/Audit Committee/Chairman of the Board Getabec Public Company Limited President, the Council of Engineers Committee, the Energy Conservation Fund, Ministry of Energy Arbitration Committee, Ministry of Justice CEO, Italian Thai Power Company Limited
Current job positions	<ul style="list-style-type: none"> Independent Director, QTC Energy Public Company Limited The 6th President, the Council of Engineers CEO, Italian Thai Power Company Limited Coordinating Committee for the preparation of Basic Nuclear Power Project Committee, the Energy Conservation Fund, Ministry of Energy Committee, the Arbitration Committee, Ministry of Justice Independent Director, Getabec Public Company Limited
In any listed companies	QTC Energy Public Company Limited/ Getabec Public Company Limited
In any non-listed companies	The Council of Engineers Italian Thai Power Company Limited
Appointment Date	31 March 2016
% of shareholding in the Company	None

5. Name	Mrs. Wasara Chotithammarat
Position	Director/Director of the Audit Committee
Age	54 years
Educational qualification	<ul style="list-style-type: none"> Master of Business Administration Program (MBA) ,Thammasat University Bachelor's Degree, Faculty of Commerce and Accountancy, Thammasat University
Directorship training	<ul style="list-style-type: none"> Director Certification Program (DCP), Class 117/2002 Advanced Audit Committee Program(AACP) Class 25/2017
Work Experience	<ul style="list-style-type: none"> Chief Accounting Officer, Summit Group, Summit Auto Seat Industry Company Limited Director and Chief Financial Officer, Team Precision Public Company Limited Division Controller, Benchmark Electronics (Thailand) Public Company Limited Corporate Controller, Siam City Cement Public Company Limited
Current job positions	<ul style="list-style-type: none"> Director, QTC Energy Public Company Limited Director, Supamitr Food (2014) Company Limited Director, Supamitr Food (2015) Company Limited Director, Supamitr Food (2017) Company Limited
In any listed companies	QTC Energy Public Company Limited
In any non-listed companies	Supamitr Food (2014) Company Limited, Supamitr Food (2015) Company Limited, Supamitr Food (2017) Company Limited
Appointment Date	13 September 2016
% of shareholding in the Company	None
6. Name	Mr. Suroj Lamsam
Position	Director
Age	52 years
Educational qualification	<ul style="list-style-type: none"> MM. Sasin Graduate Institute of Business Administration of Chulalongkorn University MA., Communications, New York University, New York U.S.A. BA., Marketing and Consumer Studies, Syracuse University, Syracuse New York
Directorship training	Director Accreditation Program 40/2005, Thai Institute of Directors Association
Work Experience	<ul style="list-style-type: none"> Senior Executive Vice President, Loxley Plc. Director, Loxley Orbit Plc. Director, National Innovation Agency
Current job positions	<ul style="list-style-type: none"> Director, QTC Energy Public Company Limited President, Loxley Plc. Director, ASM Security Management Co., Ltd. Director, Car Convenie Co., Ltd. Chairman, Loxbit Plc. Director, Loxley Trading Co., Ltd. Director, Loxley Global Co., Ltd. President, L Food Solutions Co., Ltd. Director, Loxley Mobile Co., Ltd. President, Loxley Property Development Co., Ltd. President, Data Mining Co., Ltd. President, Thai Gateway Co., Ltd. Director, Loxley GTECH Technology Co., Ltd. Director, Ekpavee Co., Ltd. Director, Thanakorn Vegetable Oil Co., Ltd. Director, Navakij Co., Ltd. Director, Lamsam Estate Co., Ltd. Director, L Business Process Outsourcing Co., Ltd. Director, Phatra Samphant Co., Ltd. Director, Point Asia Land Development Co., Ltd.
In any listed companies	QTC Energy Public Company Limited / LOXLEY Public Company Limited

In any non-listed companies	ASM Security Management Co., Ltd./ Car Convenie Co., Ltd./ Loxbit Plc./ Loxley Trading Co., Ltd./ Loxley Global Co., Ltd./ L Food Solutions Co., Ltd./ Loxley Mobile Co., Ltd./ Loxley Property Development Co., Ltd./ Data Mining Co., Ltd./ Thai Gateway Co., Ltd. /Loxley GTECH Technology Co., Ltd./ Ekpavee Co., Ltd./ Thanakorn Vegetable Oil Co., Ltd. / Navakij Co., Ltd./ Lamsam Estate Co., Ltd./ L Business Process Outsourcing Co., Ltd./ Phatra Samphant Co., Ltd./ Point Asia Land Development Co., Ltd
Appointment Date	29 August 2017
% of shareholding in the Company	None
7. Name	Mr. Viraphonh Viravong
Position	Director
Age	68 years
Educational qualification	<ul style="list-style-type: none"> • Mechanical Engineering of Victoria University/Australia • Higher Diploma in Politics & Public Administration • National Academy of Politics & Public Administration, Lao PDR • International Arbitration and Alternative Dispute Resolution • International Law Institute/ Georgetown University/ USA
Directorship training	None
Work Experience	<ul style="list-style-type: none"> • Vice Minister, Ministry of Energy & Mines • Director General/ DOE, Ministry of Energy & Mines • Director General/ DEPD, Ministry of Energy & Mines • Member of Lao National Chamber of Commerce and Industry • Board of Directors, Nam Theun-2 Power Co. Ltd. • Board of Directors, Theun Hinboun Power Co. Ltd. • Member of Lao National Committee for Energy (LNCE) • General Manager, EdL • Electricite Du Laos (EdL)
Current job positions	<ul style="list-style-type: none"> • Director, QTC Energy Public Company Limited • Honorary Advisor, PV Consulting Sole Co. Ltd. • Senior Advisor to CSG Management • Honorary Advisor to the President of AIDC • Advisor to Natural Heritage Institute, USA
In any listed companies	QTC Energy Public Company Limited
In any non-listed companies	None
Appointment Date	25 April 2018
% of shareholding in the Company	None

8. Name	Mr. Poonphiphat Tantanasin
Position	Director
Age	66 years
Educational qualification	Bachelor's Degree, (Electrical Engineering) King Mongkut's Institute of Technology North Bangkok Capital Market Leader Program, Capital Market Academy (CMA. 13)
Directorship training	<ul style="list-style-type: none"> Director Certification Program(DCP), Class of 117/2009 Director Accreditation Program(DAP),Class of 77/2009 Finance Statements for Director(FSD), Class of 4/2009 Role of the Compensation Committee (RCC),Class 20/2015
Work Experience	<ul style="list-style-type: none"> Director, Managing Director, QTC Energy Public Company Limited Director, M-DIC Holding Co., Ltd. Director, Jarin Apartment Limited Partnership
Current job positions	<ul style="list-style-type: none"> Director, Nomination Committee, Chairman of Risk Management and Chief Executive Officer, QTC Energy Public Company Limited Director, M-DIC Holding Co., Ltd. Director, Jarin Apartment Limited Partnership Director, PPWE Co.,Ltd. Director, QTC Global Power Co.,Ltd. Director, Q Solar 1 Co.,Ltd. Honorary Advisor, Thai Electrical & Mechanical Contractors Association Advisor, Subcommittee electrical branch, Council of Engineers
In any listed companies	QTC Energy Public Company Limited
In any non-listed companies	M-DIC Holding Co., Ltd/ Jarin Apartment Limited Partnership/ PPWE Co.,Ltd./ QTC Global Power Co.,Ltd./ Q Solar 1 Co.,Ltd.
Appointment Date	28 July 2011
% of shareholding in the Company	Ordinary shares 598,600 shares, representing 0.18 percent
9. Name	Mr. Ruangchai Kritsnakriengkrai
Position	Director
Age	53 years
Educational qualification	<ul style="list-style-type: none"> Master of Economics ,School of Development Economics, National Institute of Development Bachelor's Degree, (Electrical Engineering) King Mongkut's Institute of Technology North Bangkok
Directorship training	<ul style="list-style-type: none"> Director Accreditation Program (DAP), Class 116/2015 Financial Statements for Directors (FSD) Class 27/2015 Director Certification Program(DCP) Class 236/2017
Work Experience	<ul style="list-style-type: none"> Deputy Managing Director, QTC Energy Public Company Limited International Sales Manager, QTC Energy Public Company Limited Sales Manager, PPC Asian Insulators Company Limited Sales Manager OEM, Gates Unita (Thailand) Company Limited
Current job positions	Managing Director, QTC Energy Public Company Limited Director, QTC Global Power Co.,Ltd
In any listed companies	QTC Energy Public Company Limited
In any non-listed companies	QTC Global Power Co.,Ltd.
Appointment Date	13 September 2016
% of shareholding in the Company	None

Board of Executive



1. Mr. Poonphiphat Tantanasin
Chief Executive Officer



2. Mr. Ruangchai Kritsnakriengkrai
Managing Director



3. Miss Boonpa Ruddist
Deputy, General Management



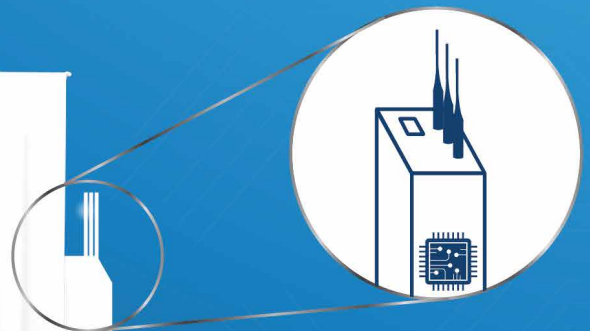
4. Mr. Kitti Achariyaboonyong
Deputy Managing Director, Marketing

ระบบ

SMART TRANSFORMER

Monitoring System

ระบบอัจฉริยะที่ติดตามการทำงานของหม้อแปลง
ด้วยระบบ sensor ที่ติดตามตัวแปรสำคัญ



SMART BOX

ระบบส่งต่อข้อมูลตัวแปรผ่าน

3G และ 4G

ทำให้ผู้ดูแลรักษาสามารถดูข้อมูล
ได้ตลอด 24 ชั่วโมง



General and Other Relevant Information

1 General Information

Company Information

Company Name	:	QTC Energy Public Company Limited
Type of Business	:	Operating the business of manufacturing and distributing electricity Distribution transformers, including those for companies involved with electricity distribution transformers.
Main Office Address	:	2/2 Soi Krungthep Kritha 8 (5), Krungthep Kritha Rd., Huamark, Bangkapi, Bangkok 10240
Factory Address	:	149 M.2 Tambol Mabyangporn, Ampur Pluakdaeng, Rayong 21140
Company Registration No.	:	0107553000158
Registered Capital	:	429,240,725 Baht
Paid-up Capital (ordinary shares)	:	341,092,557 Baht
Website	:	www.qtc-energy.com
Investor Relations	:	0-2379-3089, ext. 241
Telephone	:	0-2379-3089-92
Facsimile	:	02-379-3097

Stock Registrar

Company Name	:	Thai Securities Depository Co., Ltd.
Office Address	:	92 Stock Exchange of Thailand Building, Ratchadapisek Road, Dindeng, Bangkok 10400
Telephone	:	0-2009-9000
Facsimile	:	0-2009-9991

Auditors

Auditors	:	Mr. Narin Churamongkol , Miss Kanyanat Sriratchatchaval, Mr. Teerasak Chausrisakul,	Accounting Auditor's License No. 8593 or Accounting Auditor's License No. 6549 or Accounting Auditor's License No. 6624
Company Name	:	Grant Thornton Co., Ltd.	
Office Address	:	87/1 All Seasons Place, 18th Floor, Wireless Rd., Lumpini, Pathumwan, Bangkok 10330	
Telephone	:	0-2205-8222	
Facsimile	:	0-2654-3339	

Legal Consultants

Company Name	:	Bangkok Jurist Ltd.
Office Address	:	Paso Tower, 19th Floor 88 Silom Road Suriyawong, Bangrak
Telephone	:	02 267 2460-3
Facsimile	:	02 267 2464

2 Other Relevant Information

Investors can study additional information about the Company in the Company's Annual Disclosure Form (Form 56-1) posted at www.sec.or.th or www.set.co.th and the company's website at www.qtc-energy.com.

Always on call...
whenever you need it!



No matter what, you can never predict the downtime

At **QTC**, we have a team of electrical engineering professionals always on duty, ready to provide the support and service our clients need in a most efficient and timely manner, all day, all night. Transformer maintenance checks, cleaning service, troubleshooting analysis, system testing and technical consultation... whatever support you need for your transformers - and no matter what time it is - dependable help is only a phone call away!

Business Characteristics

Business Operations of Each Product Line

1 Characteristics of products and service

1.1 Electricity Transformers

The electricity transformers manufactured and distributed by the company are custom-made or made to meet the specifications of customer orders. Customers provide product specifications such as high and low voltage, loss, impedance, vector group and temperature rise so the company can design high quality electricity transformers to meet customer needs. All of the electricity transformers sold domestically by the company are under the “QTC” trademark. For foreign supply, products are distributed under both “QTC” and customer trademarks. In addition, the main components of the electricity transformer are as follows:

1. **Steel Core** which acts as a magnetic circuit for the transmission of magnetic line of force to produce pressure on both low and high voltage coils. The steel core is made from cutting silicon steel and layering it to form a core.
2. **High Voltage (Primary)** Coils receive electric energy from high electric transmission lines and transform the electric energy into magnetic energy for transmission to a low voltage coil. High voltage coils are normally made from round copper coil soaked in chemicals and wrapped or put onto low voltage coils.
3. **Low Voltage (Secondary)** Coils act as distributors of electricity from transformers onto a load or accompanying equipment. Low voltage coils are made from flat copper coil covered by insulation or copper foil with relatively large sized wrapping on the insulator cover to be inserted onto the steel core
4. **Tanks and Tank Lids** are components that preserve transformer oil and release heat inside the transformer. The company uses the technique of producing electricity transformers hermetically sealed with prototype in a corrugated form with heat release fins attached to all the sides of the tank so the heat can be swiftly released from the inside to the outside. The fins are folded from long steel sheet making the connecting mark less visible while reducing the chance of tank leakage in comparison to previous specifications using radiator fin for heat ventilation. The tank lid is usually used to install the bussing and other tank protection equipment.
5. **Bushings** are part of the receiver or distributor of the transformer electrical current. The ingoing and outgoing wires are connected to the bushing and the inside of the bushing holds an electric conductor leading the electrical current to the coil. The bushing acts as an insulator to prevent the leakage of electricity into the tank.
6. **Transformer oil** acts as a good insulator that is high in purity and used as an electric insulator inside the transformer as in addition to helping ventilate heat from the coil inside the transformer to outside air.
7. **Taps** are equipment that changes the ratio of the coils, allowing the pressure proportion of the transformer to be at a the desired rate.
8. **Other equipment** used for protection such as tools for oil level measurement, thermometers and pressure release valves are used to measure various levels of the transformer. Once an error is detected, a warning signal is sent to control the corrective equipment and prevent severe damage to the transformer.

The electricity transformers produced and distributed by the company are divided into the following five types:

1. Distribution Transformer

Distribution transformers are equipment performing the task of transforming high voltage electricity from the Metropolitan Electricity Authority and the Provincial Electricity Authority distribution systems through distribution lines not more than 36 KV, so the electromotive force will be reduced to the same level required by the needs of customers such as industrial factories, households and high-rise buildings.

Distribution transformers can be divided into the following 3 types:



- 1.1 **Hermetically Sealed Oil Type Distribution Transformers:** This type of transformer uses transformer oil as an insulator to prevent short circuits inside the transformer and release heat from inside the coil to the outside area. The tank itself is carefully sealed to prevent external air from leaking inside and mixing with the oil. This type of transformer, therefore, is highly capable of withstanding moisture and deteriorates at a slower rate. It will also help preserve the quality of the insulator of transformer oil as well as extend the durability and reduce maintenance costs. This type of transformer is mainly installed outdoors.



- 1.2. **Open Type with Conservator:** A previous electricity transformer design that has been popular for a long time. It requires transformer oil as an insulator and heat release in the same manner as the hermetically sealed oil type distribution transformer. The difference is that it has a conservator installed to reserve the expansion of the oil during operations and a tube to let the air flow. On the end of the tube is a bulb filled with silica gel that absorbs moisture from the air before it enters the transformer. This type requires transformer inspection oil every 6-12 months.

2. Power Transformer

Power transformers are transformers used to adjust electromotive forces transmitted from power generation sources along the transmission line to reduce force before entering the distribution line and then later to the end user. The power transformers the company is manufacturing and distributing are sized at 5,000-30,000 KVA with a maximum electromotive force of 72 KV.

3. Transformers-dry (Dry Type Cast Resin Transformer)

Transformers-dry (Dry Type Cast Resin Transformer) transformer is suitable for installation in the building because of electrical insulation, dry. Do not use oil-insulated high-voltage coils series casting Resin Epoxy in Dune that has moisture resistance. The dust and the environment, and the fire resistant properties. A project that uses a transformer, dry, such as high-rise buildings. Residential building or condominium. The hospital or who have limited space to use the transformer can be installed in the building. The company had invested both goods and personnel readiness for service to customers, to sell the dry transformer tested according to international standards in order to build the confidence to customers.



4. Super low loss transformer (Amorphous Metal Distribution Transformer : AMDT)

Amorphous Metal Distribution Transformer is considered as a kind of transformers with Amorphous as the axis of the transformer in lieu of silicon. The benefit obtained from this replacement has low level of No Load Loss that is considered as one-third of that of silicon axis. Consequently, this Amorphous Metal Distribution Transformer can help to save more cost of electricity. If Amorphous Metal Distribution Transformer can replace those with silicon axis in the large number, it will help to save electrical power consumption of Thailand in large amount. In addition, it also helps to relieve global warming situation indirectly by reducing emission of greenhouse gas caused by production of power plants.



5. Special Transformer

The company manufactures special types of electricity transformers that are custom-designed and produced to meet customer needs such as Earthing Transformers, Unit Sub-stations and Pad mounted transformers.



Unit Substation



Earthing Transformer



Pad Mounted

1.2 Services

All services provided by the company are related to 24-hour transformer usage. Our highly experienced engineers and technical experts are ready to support and assist customers who have purchased QTC electricity transformers, as well as general customers. In cases where an electricity transformer belongs to the QTC brand, the details regarding emergency contact information are placed on the sides of all transformers. The electricity transformer-related services provided by the company include the following:

- Electricity transformer installation
- Inspection and maintenance according to the product cycle
- Restoration and maintenance of the electricity transformer
- Filling oil into the electricity transformer
- Electricity transformer rental
- Electricity transformer testing
- Advice on electricity transformers and electrical systems
- Service on steel cutting and coil wiring

2 Marketing and Competition

2.1 Competitive Strategy

1. Product Quality

The company is firmly committed to policy for constant development in the quality of the electricity transformers to comply with international standards from design to the selection of raw materials for production. Quality inspections are frequently conducted for the raw materials frequently purchased. The company's electricity transformers have been designed by a computer system that increases and precisely controls loss under the supervision of experienced engineers in the design field. Furthermore, the technology employed by the company in power plants is up-to-date and highly developed. The main machines used are imported from Germany and all of the production process, up to the products delivered to our customers, have been tested and controlled. All the company's operations described above have been adopted to ensure that products are standardized and customized for customer satisfaction. The company's products are clearly certified by ISO 9001:2008, and all of the electrical sizes and types of electricity transformers available in the market are certified with Thai Industrial Standards 384-2543. and all passed short circuit resistance testing by CESI, Italy. The 167 KVA has also passed short circuit resistance testing from KEMA, in the Netherlands. Both institutions are world famous testing institutes capable of ensuring the quality and durability of the coil and internal structure of electricity transformers.



2. Speed and Reliability in Product Delivery

Delivering products on schedule is another important factor considered by customers when deciding to purchase products from various suppliers. Most of the customers have a timeframe that is exact, especially those in the state enterprise sector that produce and distribute electricity or customers who have won price bidding for entire projects. If QTC is unable to deliver products on time, it may cause delays for the customer's projects and our company may be required to pay fines according to purchase/sales agreements. Therefore, our main policy is to deliver products on time to maintain customer satisfaction and ultimately build trust and loyalty, as well as brand promotion for our company.

3. Effective Capital Management

The company gives importance to the efficiency of capital management, which is a main cost with impact on the company's profit and competitive capacity, beginning with the selection of raw materials. A team of experts selects the manufacturers and/or suppliers who are required to pass inspection testing on their production processes to ensure the quality of the raw materials and reduce loss from production caused by low quality raw materials. In addition, the company has adopted the ERP system to plan the purchasing of raw materials to help control the amount of raw material production at acceptable and sufficient levels. Since the ERP system has linked information from all departments since orders began to be accepted from the customers, the system takes the orders and plans for production and raw material purchases.

In addition, the company has planned a production and technological production system to help save production costs as well as maintain product quality. Applying the Wound Core technology for steel core production, this technology will reduce steel input.

- Silicon and loss of silicon steel could reduce overall production costs

- Finding alternative raw materials for wider options and helping manage capital would be very efficient, e.g. copper foil or paper-wrapped flat wire is an important component for wrapping low voltage coils.

However, the selection of each raw material depends on the specifications of the electricity transformers requested by the customers.

4. Acquiring Experienced Staff and Experts in the Electricity Transformer Industry

With the company's team of directors, architects, and most of the staff with experience and expertise in the electricity transformer industry for over 43 years and having passed the training of world-renowned electricity transformer manufacturers from both Germany and Japan, the company is able to help develop technology both in terms of design and improve the production process for higher efficiency. The machines are therefore high tech and able to reduce production process, causing cost to be lower and able to compete well with competitors in the business. Also, the sales department has experience in the sales and marketing field for over 25 years, making them understand customer's demand and in-depth electricity transformer market condition. They are therefore able to command strategies which are suitable for each situation perfectly.

5. Trade Alliances and Good Relationship with Distributing Agents

In 2018, 18.59% of income from net sales of electricity transformer comes from distributing agents, both domestic and abroad. As of 31 December, 2018 the company has a total of 5 agents domestically and 8 agents abroad; covering Malaysia, Australia, South Africa, and Europe. Also, the company is focused on maintaining and developing relationship with the agents continuously. Also, to maintain good relationship among other companies in the market and distributing agents to share information for product and quality development, as well as service. This allows the company to improve product quality to directly serve needs of the customers at a high standard.

6. Post-Sale Services

The company offers after sale service by experts in electricity transformer to give advice and suggestions on problem solving 24 hours to customers. This service will not only impress the customers but allow the company to be aware of the existing problems caused by the product directly from the customer. The company will be able to take the complaints to develop and fix the product accordingly. The product will therefore have high quality and fully respond to customer's demand. Since the electricity transformer has high quality, we can ensure this by offering 2 year product warranty.

2.2. Characteristics of Customers

Customers of our company can be divided into 2 main groups as follow;

1. Domestic customers

Domestic customers of the company could be divided into 4 categories as follow;

1.1 State and state enterprise

State and state enterprise is a group combined of the main customer who is the electricity state enterprise producer and distributor. This includes The Provincial Electricity Authority (PEA), The Metropolitan Electricity Authority (MEA), Electricity Generating Authority of Thailand (EGAT), and other state and state enterprise customers such as, Ministry of Public Health, Public Works Department, and Royal Irrigation Department.

1.2 Project Contractors

This customer group ranges from small to large project contractors This type of customer includes Powerline engineering public company limited. ItalThai development public company limited, and Demco public company limited.

1.3 Distributing agents

Customers who are distributing agents and then onwards to end users. The company has a total of 3 distributing agents. Each agent is responsible for distributing the electricity transformer and offering service in their area of responsibility. This will help with marketing and service provided by the company to fully cover all the area.

1.4 Project or factory owners

This group of customer will purchase electricity transformer to use in their own factories or buildings such as Advance Pepper Mill Company Limited, True Universal Convergence Company Limited and Betagro Public Co., Ltd.

2. Foreign customers

2.1 Distributing agents

Currently, the company has 8 agents covering electricity transformer distribution sale areas more than 30 countries. where the income from export (60%) mainly comes from selling through distributing agents.

2.2 Other customer groups

Other customer groups include contractor and trading firm which will purchase electricity transformer from the company and deliver it to end users in various industries such as paper industry, petrochemical industry, palm oil industry, textile industry, and electronic industry.

Chart showing revenue from each distributing channel by customer type

Customer Type	2016		2017		2018	
	Million Baht	%	Million Baht	%	Million Baht	%
Revenue from domestic sales						
(1) State and state enterprises	90.03	58.26	285.21	33.98	181.59	23.08
(2) Distributor	14.36	2.80	21.42	2.55	13.48	1.71
(3) Private	298.91	17.55	290.96	34.66	313.85	39.90
Total income from domestic sales	403.30	78.60	597.59	71.19	508.92	64.69
Revenue from foreign sales						
(1) Distributor	82.47	5.32	192.31	22.91	168.35	21.40
(2) Private	27.32	16.07	49.48	5.90	109.43	13.91
Total Revenue from Foreign Sales	109.79	21.40	241.79	28.81	277.78	35.31
Total Revenue from Sales	513.09	100.00	839.38	100.00	786.70	100.00

2.3 Pricing policy

The company has a policy towards pricing that follows the cost plus margin rule which will be different according to each customer type and consider the competitive condition in each market- both domestic and foreign, respond to the product of each customer group which takes in consideration of the product quality and effective after-sale service.

2.4 Details of the company's distribution channel could be categorised as follow;

1. Distribution through auctioning

Auctioning through price bidding is one of the main distributing channels for customers who are state enterprise producer and distributor of electricity. The process of bidding will begin with price offering. After the company studies information and analyze details of the electricity transformer to arrange documents and calculate price which will be offered. Documents used for price offering are divided to document presenting the qualification of the bidder and technical documents. Companies entitled to participate in price bidding must pass the basic qualifications in price offering. Once the company wins the bidding, trading contract of the model and time period will be written, along with the security guarantee- most value of the guarantee is 10% of the bidding price.

2. Distribution through distributing agents

In consideration to establish the distributing agents, both domestic and abroad, the company focuses on experience in business, proficiency in marketing, experience in the area, financial condition, and readiness of the agents. A contract will be written for each agent, in case there are more than one agent in each country, the company

will determine the area of responsibility of each agent. Distributing agents will act as a channel for distribution of the company's products. They will be responsible in marketing of the electricity transformer in each area, including giving service and maintenance of the purchased product. The company will in addition give technical support to the agents and these agents are also responsible for seeking trend of the product in their respective country of duty so that the existing product will be developed to respond directly to the market demand. Distributing via distributing agents will help the company save management cost since products are sold to distributing agents are outright and agents distribute them directly to customers.

On December 31, 2018, the company has a total of 6 agents domestically and 8 abroad- covering Sale areas more than 30 countries

3. Distributing directly to customers

Marketing officer and/or sales officer will directly contact the customers and take advantage of director's relationship with the customers to find channels to continuously reach the customers. They will present and give information regarding the product and take them to visit the company's factories. This group of customers include; contractor, architecture, and customers who use the products directly such as industrial factory.

3 Product provision

3.1 Production

The Company's plant is located at 149 Moo 2, Pluak Daeng-Huay Prab, Mabyangphon, Pluak Daeng District, Rayong, in a 32 rai piece of land. Nearly all electrical transformers are made-to-order transformers. The Company has a policy to manufacture electrical transformers that meet the specifications required by customers and primary emphasis on quality and standards. In addition, modern design and production technologies are used with machines as steel slitter machines, steel cutting machines, coiling machines, ovens, etc., all of which are imported from Germany and other leading manufacturers. Additionally, electrical transformer testing procedures concur with internal standards and are computer-controlled.

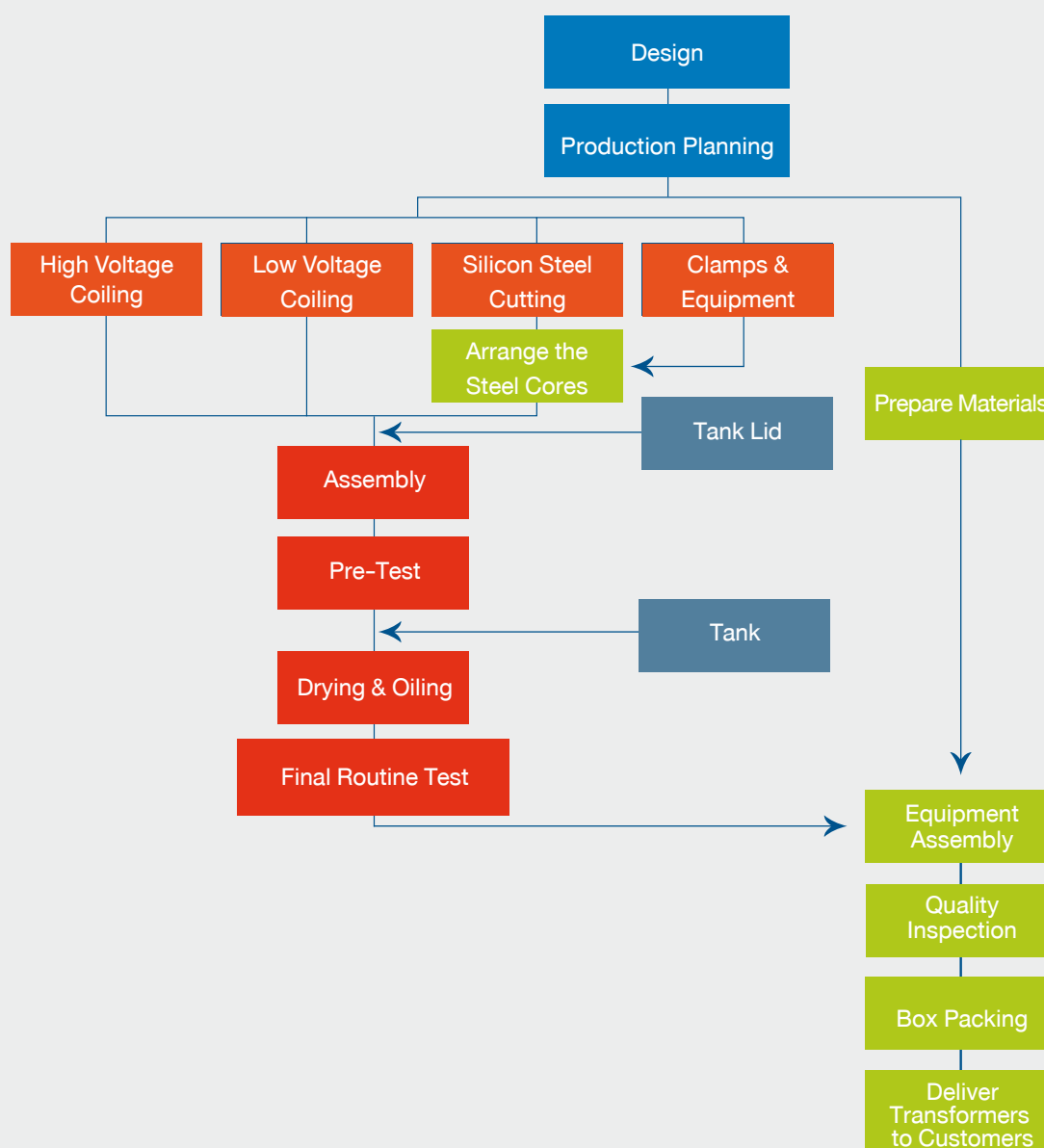
In order to accommodate future business growth, in 2019 the Company remains determined in applying the TQM system for continual improvement of manufacturing and production planning processes with the primary objectives of reduced production time for increased production capacity and line balancing in order to reduce loss such as from waiting and over production and with focus on complete utilization of production capacity. Since the fourth quarter of 2018, chassis manufacturer of the company has been licensed by Department of Industrial Works to manufacture transformers enabling the company to reduce the orders of transformers from outsiders. Consequently, the cost of production of transformer has been reduced while efficiency of production has been higher.

3.2 Production Capacity

	2011	2012	2013	2014	2015	2016	2017	2018
Production Capacity (KVA)	976,000	1,215,000	1,482,000	1,701,000	1,715,000	1,722,000	1,694,000	1,715,000
Production Amount (KVA)	952,380	1,379,748	1,236,562	1,322,535	1,791,847	1,148,604	1,659,651	1,490,595
Production Capacity Rate (%)	97.58	113.56	83.44	77.75	104.48	66.70	97.97	86.92

In 2018, the production capacity decreased about 10.19%, due to the sale lower.

3.3 Manufacturing & Production Processes



The Production Process for Company's Distribution Transformers is as follows:

1. Design

The company's electric transformers are custom-made to meet customer orders. The transformers are completely designed by using a modern computer program with high accuracy and capable engineers with extensive design experience to ensure the results meet the customers' specifications and purpose. The computer design can show immediately results as outline drawings.

2. Production planning and equipment preparations

The electric transformer's order information from customers is entered into the ERP system and used for the purchase plans of raw materials and equipment, including the production plan. The planning will include updates to the production plans for punctual delivery as per customer orders which will require close cooperation between the Sales, Production, and Procurement Departments.

3. Silicon steel cutting and steel core arrangement

The company uses silicon steel cutting machines from Germany controlled by a computer system, thereby making it possible to cut silicon sharply, quickly and precisely in which the computer will calculate the drilling locations of the steel core and cut silicon steel at the same time, fully preserving the electrical properties of the silicon steel core. The silicon sheet will then be cut

to shape and sent to the steel arranging section. For steel arrangement, the steel pieces will be placed in overlapping levels (Step-Lap) using a stacking table. The aforementioned step-lap method results in no-load loss, exciting current of the steel cores and will reduce the transformers, thus reducing noise disturbance and costs for the loss values.

4. Primary (High Voltage) and Secondary (Low Voltage) Coiling

The company uses copper foil as the raw material used for primary coiling instead of using paper-insulated flat wires as in the past, thereby giving the transformer maximum resistance to power surges and short circuits because the copper foil has better current distribution properties combined with the secondary coiling using the long layer method with a high voltage winding machine to control the tension and arranging the wires with a computer system to make the quality of each coil layer meet uniform tension standard which will increase the effectiveness and quality of the coils.

5. Assembly of Wire Coils and Steel Cores

This step takes place when the wire coils are assembled with the steel cores in which the primary coil is assembled near the steel core and the secondary coil is placed on top of the outer part of the primary coil. Next, these are assembled with the upper yoke in combination with the installation of the tank lid, bushing and tap changer, and the internal wiring as in the design.

6. Pre-Testing

Once the steel core and the primary and secondary coils have been assembled, the Testing Department will then perform preliminary testing of the electric transformers as follows:

- Measurement of Winding Resistance
- Measurement of Turn Ratio
- Checking of Polarity or Vector Group
- Megger Testing

7. Drying and Oiling

In the drying of electric transformers, the company uses a modern vacuum oven controlled by a computer system from Germany. Furthermore, the company is the only company in South East Asia to use Electric Low-Frequency Heating technology to remove moisture from the electric transformer by directly delivering low frequency electrical currents to the coils of the electrical transformer in a vacuum environment which is a way to transmit heat from the inside to the outside. This method will remove moisture from the innermost part of the coils in a short time compared to the heater which is a method used to heat the coils from the outside, but unable to remove all moisture. Furthermore, the company also uses technology for oiling the transformer in a vacuum oven in a way for the oil to fully infiltrate the insulation system and can prevent 100% of moisture from coming in to contact with the inside of the transformer, which effectively extends the transformer's usage life.

8. Final Routine Testing

After the transformers have gone through all of the procedures, all transformers will be required to go through a final routine test. The company's testing equipment is controlled by computer and calibrated regularly, thereby yielding test results that are accurate and precise with ability to report test results immediately. The testing list is composed of the following:

- Measurement of winding resistance
- Measurement of voltage ratio and check of phase displacement
- Measurement of short circuit impedance and load loss
- Measurement of no-load loss and current
- Separate source AC withstand voltage test
- Short-duration induced AC withstand voltage test
- Measurement of insulation resistance
- Oil dielectric test
- Leakage test

3.4 Procurement of Raw Materials

The main materials used in the manufacturing of the Company's electrical transformers are silicon steel, coated round wires, transformer body unit, copper foil and transformer oil. The Company purchases these raw materials from both domestic and foreign manufacturers and/or suppliers. Accordingly, the factors considered as a policy by the Company in the purchase of raw materials are as follows:

1. Raw Material Quality

Since the Company makes it a main policy to give importance to product quality, the Company emphasizes quality raw material purchases from capable manufacturers or suppliers that can deliver quality raw materials according to specifications in full quantities and according to schedule. Accordingly, the Company has an approved vendor list for screening for quality manufacturers and suppliers. Moreover, the Company has procedures in place to test the quality of raw materials and conducts visits and inspections on new manufacturing factories before approving them to become manufacturers or suppliers of the Company. Furthermore, the Company reviews assessment results every six months based on the quality and history of raw material deliveries. Additionally, the Quality Assurance Unit (QA) conducts a random inspection of raw materials every time a vendor delivers raw materials in order to ensure guarantee the quality of raw materials used in the manufacturing of the Company's goods.

2. Raw Material Delivery Time

Domestic purchases generally has a delivery time approximately at 15-30 days, depending on the type of materials. On the other hand, raw materials ordered abroad takes approximately 45-90 days to be delivered because an allowance has to be made for shipping time based on the country of the purchase. Therefore, for the most part if raw materials are ordinary or if domestic manufacturers or suppliers can provide materials with similar quality to those offered by foreign manufacturers or suppliers or meet the quality specifications of the Company, e.g., solution-coated round wires, paper-coated band wires, solution-coated band wires and other transformer components, the Company order the aforementioned materials from domestic sources due to the shorter delivery time that allows more convenient and effective inventory management.

3. Prices of Raw Materials and Price Trends

In particular, silicon steel and copper are commodities with prices that fluctuate based on prices in the global market. Therefore, in ordering raw materials in each occasion, the Company has to consider the quantity of materials to be purchased combined with suitable delivery time. Accordingly, the Company closely monitors changes and trends in raw material prices to effectively management raw material costs.

4. Exchange Rates

Because the Company purchases raw materials from abroad for 36.12 percent of all raw materials, the Company closely monitors changes in the exchange rates of important financial currencies and appropriately enters into foreign currency purchase/sales contracts in advance in order to avoid risks from fluctuating exchange rates.

5. Avoidance of Dependency on Few or a Single Manufacturer or Supplier

The Company has policy to procure raw materials from many manufacturers or suppliers. For each type of materials, especially silicon steel, solution coated round wires, electrical transformer body, copper foil and transformer oil, the Company makes purchases from only 2-3 main manufacturers or suppliers because the aforementioned manufacturers and suppliers each have specified minimum purchase orders based on prices and delivery times of the aforementioned materials.

Table Showing Ratios of Domestic and Foreign Raw Material Purchases

	2016		2017		2018	
	Million baht	%	Million baht	%	Million baht	%
Domestic Raw Material Purchases	274.74	63.88	403.35	69.40	397.58	73.59
Foreign Raw Material Purchases	155.38	36.12	177.87	31.60	142.65	26.41
Total Raw Material Purchases	430.12	100	581.22	100	540.23	100

The Company's main raw materials are described as follows:

1. Silicon Steel

Silicon steel is considered an important material in the manufacturing of electricity transformers with a calculated percentage of total raw material purchase value of 19.95 percent and 17.45 percent in 2017 and 2018, respectively. The Company primarily imports silicon steel from the Republic of South Korea and partially from Japan. These purchases are made in advance on a quarterly basis. However, since high-quality silicon steel for electrical transformers has few manufacturers, there is a limited quantity of silicon steel that is manufactured. Therefore, the Company has to manage purchases to ensure sufficiency with usage requirements and successfully manufacture electrical transformers to customers on schedule.

2. Solution-coated Round Wires

Solution-coated round wires are a raw materials used in high-power coiling or high-power wire coils for receiving electrical energy from high-power transmission lines for conversion into magnetic energy circulating inside a steel core to transfer energy to the low-power coils. Accordingly, purchases are made from domestic manufacturers that offer quality similar to or equivalent to foreign raw materials but with a shorter delivery time, which thereby allow the company to more effectively manage inventories.

3. Electrical Transformer Body

In the fourth quarter of 2018, another chassis manufacturer constructed by the company was also licensed by Department of Industrial Works to operate manufacturing therefore the company could improve productivity. Consequently, the company could reduce the orders of transformers from outsiders helping to reduce manufacturing cost and respond to demands of transformers with short period of delivery. In addition, the company was also able to control quality as defined by customers in order to improve competitiveness. However, the company still orders some transformers from 1-2 domestic manufacturers as proper based on nature, Bill of Quantity, price, and delivery duration.

4. Transformer Oil

Transformer oil is oil produced specifically for use in electrical transformers and has good insulation properties, which functions to remove heat from inside the transformer to outside for ventilation. In transformer oil purchases, considerations are based on manufacturing plans, whereby purchases are made in advance from domestic manufacturers and suppliers, in order to prevent material shortages. Accordingly, the purchase department regularly monitors changes in oil prices in the global market to effectively manage transformer oil purchases.

5. Copper Foil

Copper foil is a raw material used in low-power coiling or low-power coils that function to distribute electricity from the transformer to load or connected devices. For copper foil, the Company purchases from both domestic and foreign manufacturers and jointly develops capable domestic manufacturers to enable purchases from domestic manufacturers that meet international standards for the Company to effectively manage raw material quantities.

3.5 Environmental Impact

Throughout the past, the Company has never had disputes or legal cases concerning environmental issues. Moreover, the Company emphasizes electrical transformer designs that reduce energy consumption and are friendly to the environment, and the technologies used in the production processes effectively reduce energy consumption and environmental pollution. In 2013, the Company began to produce amorphous distribution transformers, a type of transformers that conserves energy and prevent energy wasted in steel cores by up to 70 percent. Additionally, the paints sprayed on transformers are primarily water-based paints that are not harmful to people and the environment and the de-humidifier and oil filling systems used decrease energy consumption and emission of hot vapors to the air.

Furthermore, the Company is certified for the Environmental Management Standard ISO 14001: 2004, which is proof that the Company has control and production improvement systems and environmental management plans to visibly decrease or prevent environmental impacts in concurrence with set standards. In addition, in 2015 the Company became certified with the Green Industry Level 3 by the Ministry of Industry, and in 2016 the Company released its greenhouse gas emission report based on 2015 and became certified by Thailand Greenhouse Gas Management Organization (Public Organization) and certified for greenhouse gas emission pursuant to the ISO 14064-3: 2006 standard by SGS (Thailand) Co., Ltd.

3.6 Research and Development

The Company continues to give importance to product research and development in order to achieve good product qualities that meet customer needs and competitive potential. Throughout the past, the Company has always been able to develop products with competitive quality in every market worldwide with improved effectiveness in manufacturing processes. In 2017, the Company's total spending exceeded Three million baht.

1. Project development of Intelligent System Storage Transformers version 1, 2 and 3 (Smart Transformer system V.1-3)
2. Project development process amorphous iron core.
3. Project expansion capacity of transformer's tank for high efficiency according to the needs of overseas customers.
4. Project manufacturing Super low loss transformer (AMDT) for testing Short Circuit Withstand
5. Project development the production process in the factory to production optimization



Revenue Structure

Revenue Type	2016		2017		2017	
	Million Baht	%	Million Baht	%	Million Baht	%
Revenue from Electricity Distribution Transformer Sales	513.09	95.10	875.45	95.70	929.18	94.98
- Revenue from Electricity Sales	-	-	36.06	3.94	142.48	14.56
- Revenue from Domestic Transformer Sales	403.30	74.75	597.59	65.32	508.92	52.02
- Revenue from Overseas Transformer Sales	109.79	20.35	241.79	26.43	277.78	28.39
Revenue from Raw Material Sales ¹⁾	5.25	0.97	6.67	0.73	8.11	0.83
Consolidated Revenue from Sales	518.34	96.07	882.11	96.43	937.29	95.81
Revenue from Service Provision	12.89	2.39	19.42	2.12	20.76	2.12
Other Revenue ²⁾	8.32	1.54	13.28	1.45	20.29	2.07
Total Revenue	539.55	100.00	914.82	100.00	978.34	100.00

- Remarks:
- 1) Revenue from raw material sales is revenue occurring as a result of the sales of raw materials used as a component for the manufacture of electricity transformers to customers, such as transformer oil, low voltage terminal lugs, bushing gasket sets, etc.
 - 2) Other revenue comprising revenue from scrap sales, profit from exchange rates, interest receivable, etc.



Industry and Competition Situational Analysis



Domestic Market

The electricity transformer manufacturing industry is related to the electricity industry, a basic necessity that plays an important role to the daily lives of people and national economic growth, because electricity transformers are equipment used to reduce the voltage of electrical currents sent from a power source at a level that suits the needs of users such as residents in homes, industrial factories, malls, or high-rise buildings such as hotels, condominiums and office buildings. Therefore, the growth of the electricity transformer industry is adjusted according to annual electricity requirements, which depend on primary factors composed of population, industrial and economic growth.

Since electricity is necessary for living and economic growth, electricity users comprise a diverse range of users in industry, business, agriculture and homes. According to the graph below, which shows the amount of electricity used by user type, it is obvious that the industry sector has the highest proportion of electricity use, followed by Household and businesses. And in 2018 (January – September), the electricity used by the aforementioned sectors amounted 65,964 GWH, 34,966 GWH and 33,849 GWH, or proportions of 40 percent, 21 percent, and 20 percent of all domestic electricity consumption, respectively.

Graph showing the types of electricity users from 2015-2018 (Jan. – Sep.)

Branch	Electricity consumption					
	GWh				2018 (Jan-Sep)	
	2015	2016	2017	2018	growth	share
				(Jan-Sep)	(%) YoY	(%)
Household	41,286	43,932	44,374	33,849	0.1	20
Business	42,466	44,639	45,100	34,966	2.0	21
- Department store	4,890	5,086	5,154	3,908	0.2	
- Apartments and guest houses	4,094	4,458	4,600	3,594	2.6	
- Hotel	3,990	4,210	4,228	3,289	2.8	
Industry	83,984	86,878	87,772	65,964	-0.10	40
- Food	10,446	10,873	11,362	8,281	-1.70	
- Iron and base metals	6,647	7,176	7,861	5,963	2.5	
- Electronics	6,952	7,034	7,248	5,541	1.7	
IPS*	25,193	25,634	30,372	25,534	13.4	15
Other**	7,098	7,398	7,878	5,997	0.3	4
Total	200,026	208,481	215,496	166,310	2.3	100

* IPS (Independent Power Supply) Is a power plant that produces electricity for its own use And / or direct sales Connected to the system of 3 electricity

** A non-profit organization that pumps water for agriculture, temporal electricity, public electricity, and others.

Remarks: 1. Changing (%) compared with the same period of the year
2. Consumption of electricity in business and industrial fields exhibiting information of 3 types of specific businesses and important industries only

Source: Energy Policy and Planning Office, the Ministry of Energy

Apart from economic growth influencing the aforementioned demands for power, population growth is a significant factor determining national power demand. Thailand's continual population growth has resulted in community expansions and increased investment in the transmission system by the Provincial Electricity Authority and the Metropolitan Electricity Authority responsible for power distribution to power users in the country. Hence, the demand for electrical transformers in the power transmission system has escalated.

As previously mentioned, power is a basic, essential energy. Inadequate amounts of power for consumer demands will affect the living conditions of the public and the overall view of businesses and the national economy. In cooperation with the Electricity Generating Authority of Thailand, therefore, the Ministry of Energy has prepared the latest Thailand Power Development Plan. This plan is the Thailand Power Development Plan 2015 – 2036 (PDP 2015) approved by the National Energy Policy Office (NEPO) in a meeting held on 14 May 2015 and approved by the Ministerial Cabinet on 30 June 2015. The preparation of the aforementioned Power Development Plan was based on projections on Thailand's future power needs for the first time.

Thailand Power Development Plan of 2015 – 2036 (PDP 2015)

According to the guidelines for preparing the aforementioned plan, the Thailand Power Development Plan of 2015 – 2036 (PDP 2015) can be briefly summarized as follows: At the end of the plan in late 2036, Thailand will have a total net power production capacity of 70,335 megawatts composed of the current power production capacity from the end of 2014 of 37,612 megawatts and production capacity of expired power plans in 2015 – 2036 will be released at 24,736 megawatts.

Power Production Capacity in 2015 – 2036

-	Power Production Capacity in December 2014	37,612	megawatts
-	New Power Production Capacity in 2015 – 2036	57,459	megawatts
-	Power Production Capacity Released in 2015 – 2036	- 24,736	megawatts
-	Total Power Production Capacity at the End of 2036	70,335	megawatts

Power Production Capacity in 2015 - 2036

New power production capacity in 2015 – 2036 will be equal to 57,459 allocated in the following power plant types:

Renewable Energy Power Plants	21,648	megawatts
- Domestic	12,105	megawatts
- Foreign Power Purchases	9,543	megawatts
Pumped Storage Power Plants	2,101	megawatts
Cogeneration Power Plants	4,119	megawatts
Combined Cycle Power Plants	17,478	megawatts
Thermal Energy Power Plants	12,113	megawatts
- Coal/Lignite Power Plants	7,390	megawatts
- Nuclear Power Plants	2,000	megawatts
- Gas Turbine Power Plants	1,250	megawatts
- Foreign Power Purchases	1,473	megawatts
Total	57,459	megawatts

New Power Production Capacity in 2015 – 2026

At this phase of the plan (first ten years), power plant projects are mostly projects with contract obligations aimed at reinforcing power system security in key risk areas by having a new power production capacity of 36,804 megawatts as follows:

Renewable Energy Power Plants	10,644	megawatts
-Domestic	8,101	megawatts
- Foreign Power Purchases	2,543	megawatts
Pumped Storage Power Plants	1,300	megawatts
Cogeneration Power Plants	4,119	megawatts
Combined Cycle Power Plants	14,878	megawatts
Thermal Energy Power Plants	5,863	megawatts
- Coal/Lignite Power Plants	4,390	megawatts
- Foreign Power Purchases	1,473	megawatts
Total	36,804	megawatts

International Markets

The factors affecting power demand in foreign countries are economic growth and world population growth. The Energy Information Administration (EIA) in the US estimates electricity in each continent around the world until the year 2035, which have an average growth rate of approximately 2.30 % per year. The growth of power production of countries outside the Organization of Economic Cooperation and Development (OECD) to be considerably higher than that of OECD countries at 3.3% versus 1.1%, respectively. Asian countries outside OECD are the places where power production growth is the highest at 4.1% per year. Thus, current trends indicate growth for the demand for transformers to be higher than in other regions.

Australia, one of the company's key transformer exporting markets, which have sale revenue 46% of all total revenue. The Australian market is a large market with a strong industrial sector. The company have encouraged to expand regional foreign markets in Laos, Cambodia, Myanmar, Malaysia, the Philippines, Singapore and Bangladesh. These are developing basic industries such as the mining industry, power plants, industrial estate constructions, manufacturing industries and continually increasing investment from overseas to mitigate risks and expand customer bases. Our company has the capacity to manufacture transformers meeting international standards, thus we believe the company's transformer products can compete in the world market. Thus, there is a chance for consistent growth for the company's transformer exports in the future.

Competitive Conditions

The transformer market can be divided into the electricity transformer market for power systems and the electricity transformer market for distribution systems. Previously, all of the company's sales were from distribution transformer. There are about 24 manufacturers in the power distribution transformer comprising of small manufacturers that emphasize price strategy rather than quality, and medium and large manufacturers that focus on product quality. Therefore, each group of manufacturers has different customer groups. The company is a medium-sized manufacturer producing high quality transformers to support the work operations of both public and private sector companies. The company's products are TIS 384-2543 accredited and have passed short circuit testing by the CESI in Italy and the KEMA Institute of the Netherlands. Thus, the company's product quality is accepted by domestic and foreign customers; furthermore, our quality is constantly improving. These improvements are constantly enhancing the company's competitive capacity to equal to exceed that of larger manufacturers. Small manufacturers focusing on small groups of customers and putting emphasis on price strategy without giving consideration to product quality are not in the same market with the company.

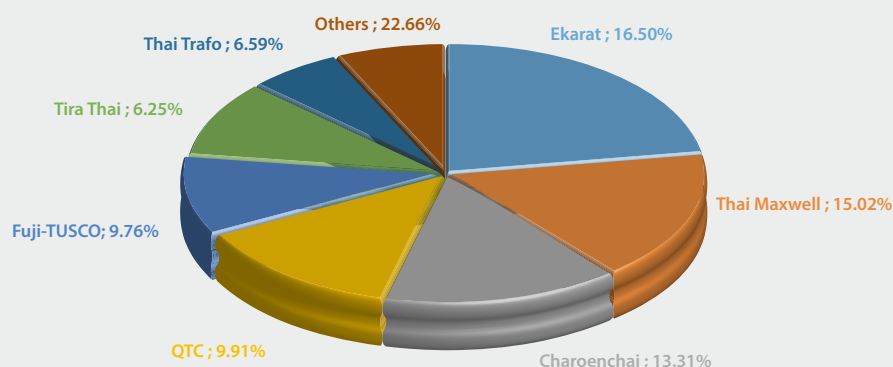
New manufacturers entering the industry and developing electricity transformer manufacturing processes in order to achieve quality meeting international standards are difficult because they require costly investments for machinery. More importantly, know-how and advanced technology with skilled personnel and production expertise are also essential. Thus, domestic competition comes from about seven manufacturers with technology and ability to manufacture high quality transformers. These manufacturers all require manufacturing technology to enable their products to produce high quality transformers accepted by customers. The company manages production costs in order to achieve maximum efficiency with the goal of building capacity for consistent and sustainable competition. In addition to product development, we also emphasize building good relationships with every customer group to maintain customer bases and continually expand customer bases to have coverage. We can be considered as an organization that pays attention to every step and detail in line with our slogan, "Quality of Detail".

Currently, we are the first and only energy-efficient transformers supplier in Thailand, certified by the Metropolitan Electricity Authority, and offers an innovative transformer that can reduce power consumption by more than 35% with payback period of no more than 5 years. The company's products have passed short circuit test from CESI, Italy, enabling customers to be confident in their products and services other than general transformer. It suffices to say that QTC transformer is leader in energy-efficient technology.

Market share

In the years 2017, The overall value of the market was still similar to that of 2016 whereas each manufacturer had the following marketing shares:

Tranformer Market Share 2017



Source: BOL

Risk Factors

The company is aware of various aspects of risk management and makes considerations and monitors the impacts of situations that potentially create risks to the company's business operations on a regular basis in order to ensure thorough and effective risk management. The company has formed the Risk Management Committee and a work committee in which high-ranking executives are involved to analyze various risk factors and assess potential risks in order to obtain adequate risk prevention or management. Furthermore, the Risk Management Committee reports to the Audit Committee and the Board of Directors for acknowledgement and considerations by at least once every three months. The risks that are significantly influential to the company are summarized as follows:

1 Risks of Revenue Fluctuations and Dependence on Large Customers

The company has revenue from the sales of electricity transformers to customers who produce and distribute state enterprise electricity composed primarily of the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA). The aforementioned customers amount to approximately 25-36 percent of overall sales revenue with a high proportion potentially affecting the company's income if lost. Furthermore, revenue generated by the sales of electricity to the aforementioned group of customers is primarily dependent upon the company's ability to win project auctions, economic conditions and budget of each agency. Therefore, if the company loses auctions, or if auction dates are changed, or investment budgets for the purchase of electricity transformers decrease, the company's revenue and performance results will decrease. Thus, the company is shifting focus its to expanding its customer base in the private sector and export sector. In 2018, the proportion of electricity transformer sales for exporting to sector customers was increased by 35% although the overall sale proportion of public sector still increased to 41.61% and the overall sale proportion of state enterprise was decreased to 23.08% in 2018. Moreover, the company has given consideration to increasing product diversity to meet the demands of all customer groups. At present, the company is capable of producing electricity transformers with up to 30 MVA and maximum electrical system of 72 KV and developed the capacity to manufacture amorphous electricity transformers, which are no-load-loss transformers.

2 Risks from Fluctuations in Raw Material Prices

The main raw materials used in transformer production comprise silicon metal, coated round wires and copper foils. The prices of the aforementioned raw materials will fluctuate according to the prices on the world market, which depend on supply and demand in the global market. In the past, the prices of silicon and copper underwent great fluctuations. Therefore, if the costs of raw materials increase rapidly, there may be impacts on the company's sales costs and gross profit margins because the company is unable to adjust product prices at an equal or higher rate than the aforementioned increase in raw material costs, which will have eventually have impact on the company's business performance. However, because the company has policies for setting product prices in line with costs added to the company's gross profit, the company is constantly checking the prices of raw materials, especially raw materials with highly fluctuating prices in order to be able to estimate production costs accurately and as near to real costs as possible so product prices can be set properly. Moreover, the fact that the company's executives have over 30 years of experience in the industry and good relationships with raw material suppliers enables the company to have reliable estimates for raw material price trends.

3 Risks from Foreign Exchange Rates

The company imports raw materials from foreign countries and exports products for distribution to foreign countries. In 2018, the company had revenue from the sales in foreign currency equal to 280.84 million baht, which was 28.70 % of all sales revenue. At the same time, the company has also ordered the purchases of raw materials from foreign countries equal to 136.16 million baht, which must be paid in foreign currencies, thereby enabling the company to partially reduce risks from exchange rate fluctuations with natural hedges. However, the company realizes the importance of preventing the aforementioned risks. The company's Finance & Accounting Department will closely monitor the news and movements of exchange rates and the company will consider preventing risks by using forward contracts according to situations and necessity. Moreover, in the sales of transformers to foreign customers, the Sales Department will calculate transformer prices by using mark-ups for foreign exchange rates to cover the costs of risks and fluctuations, which will help minimize risks from fluctuations of exchange rates to a certain degree.

4 Risk from Investment in other businesses

In 2018, the company started to invest in domestic and overseas energy business, related to transformer business through operation of QTC Global Power (Limited): QTCGP, a subsidiary company. As the company lacked personnel with expertise in energy business, thus the company recruited specialists on investment and hire dedicated consultant to conduct feasibility study of the project and effects on economy, society and environment. The results will be proposed to the shareholders before making the investment decision. The Company pays attention to risk management in new business by buying investment risk insurance and follow-up closely in order to maintain the best interests for shareholders.



Shareholder Structure

Top Ten Major Shareholders as at December 24 , 2018			
No.	Shareholder	Number of Shares (Shares)	Shareholder Ratio (%)
1	1.1 Mr.Chanthanome Phommany	42,500,000	12.46
	1.2 Mr. Sathit Limpongpan	20,000,000	5.86
	A Group of Investor have Shares totally	62,500,000	18.32
2	Tantanasin Group		
	2.1 Miss Sasikarn Tantanasin	22,000,000	6.45
	2.2 Mr. Patcharapong Tantanasin	716,000	0.21
	2.3 Mrs. Alisara Charuenvanich	602,600	0.18
	2.4 Mr. Poonphiphat Tantanasin	598,600	0.18
	Tantanasin Group have shares totally	23,917,200	7.01
3	Mr. Litsamy Latsavong	42,500,000	12.46
4	Mr.Phoukhaokham Pravoraxay	40,000,000	11.73
5	Miss. Katreeya Beaver	27,051,300	7.93
6	LOXLEY PUBLIC COMPANY LIMITED	17,019,702	4.99
7	Mr.Wichai Vachirapong	14,395,900	4.22
8	Verwaltungs-und Privat-Bank Aktiengesellschaft	13,457,344	3.95
9	Thai NVDR Co., Ltd.	12,857,452	3.77
10	Miss. Supharat Sangamueng	9,081,700	2.66
	Other Shareholders	78,311,959	22.96
	Total	341,092,557	100.00

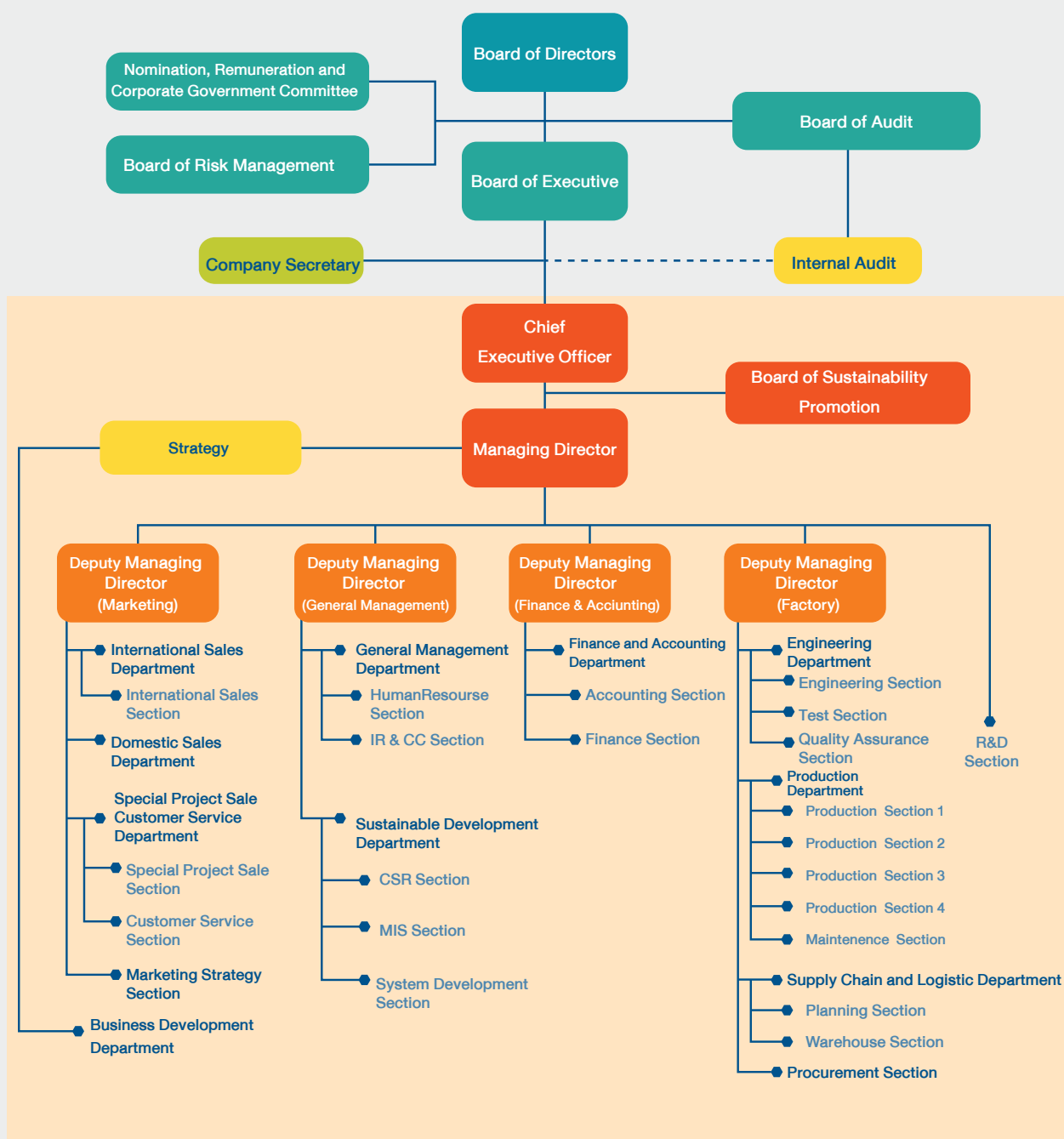
The Company's Top Ten Major Shareholders, as of 24 December 2018, which is the book closing date, is described below:

Dividend Payment Policy

The company has policy for payment of annual dividends at no less than fifty percent of the net profit after deduction of juristic person income taxes and allocation of reserve funds in compliance with the law. However, the company may consider dividend payments differing from the set policy, depending upon business performance, financial liquidity, economic conditions and necessity to use current capital in order to manage operations and expand the company's business.

Management Infrastructure

1. Management Structure



The organizational structure of the company's Board of Directors consists of 5 series include the Board of Directors, the Executive Committee, the Audit Committee, the Nomination Committee. Compensation and corporate governance Committee and the risk management committee, with the names of members and scope of authority as follows:

1.1 Board of Directors

The company's board of directors consists of the following 9 directors:

	First-Last Name	Position
1.	Mr. Krirk-Krai Jirapaet	Chairman and Independent Director
2.	Mr. Natthaphon Lilawattananun	Independent Director and Chairman of the Audit Committee Director
3.	Mr. Phonrat Piathanom	Independent Director and Audit Director
4.	Mrs. Wasara Chotithammarat	Independent Director and Audit Director
5.	Dr. Kamol Takabut	Independent Director
6.	Mr. Suroj Lamsam	Director
7.	Mr. Viraphonh Viravong	Director
8.	Mr. Poonphiphat Tantanasin	Director
9.	Mr. Ruangchai Kritsnakriengkrai	Director

Miss Boonpa Ruddist is the corporate secretary appointed by the 1/2554 meeting of the board of directors on 24 February 2011.

Signatory Directors Authorized to Sign and Obligate the Company

Mr. Poonphiphat Tantanasin has signatory authority with Mr. Ruangchai Kritsnakriengkrai or Dr. Kamol Takabut and affixes the company seal.

Board of Directors Scope of Authority and Duties

1. The board of directors has the authority, duty and responsibility of managing the company according to the company's bylaws, objectives and regulations, including legal resolutions by the meeting of shareholders with integrity and must maintain the company's interests.
2. The board of directors must arrange a general shareholder's meeting within four months from the end of the company's accounting cycle.
3. The board of directors must arrange a meeting of the company's board of directors at least every three months.
4. The board of directors must arrange credible systems for accounting, financial reports and auditing, including efficient and effective systems for internal control, internal auditing and risk management.
5. The board of directors must arrange the company's balance sheets and profit-loss statements at the end of the company's accounting cycle, which must be audited by an auditor and presented to the meeting of shareholders for consideration and approval.
6. The board of directors must set the company's goals, guidelines, policies, business plans and budgets along with monitoring and supervision, so the administration and management of executives concurs with work planning policies and setting budgets with efficiency and effectiveness.

Furthermore, the scope of the board of directors' duties includes direction for the company to comply with laws on securities and securities exchanges, announcements of the Capital Market Supervisory Board, specifications of the Stock Exchange of Thailand such as engaging in connected transactions, acquisitions or sales of significant properties, or laws associated with the company's businesses.

7. The board of directors must consider reviews, audits and approvals of plans by the executives for business expansion, large investment projects, including participation in investments with other business operators proposed by the executives.

8. The board of directors must continually monitor performance for concurrence with plans and budgets.
9. The board of directors must consider designating executive structures with authority to appoint the Executive Board of Directors, Managing Directors and other sub-committees as deemed fitting, such as the Audit Committee, the Recruitment Committee, the Remuneration Committee, etc., including the setting of the scopes of authority and duties of the Executive Board of Directors, Managing Directors and various appointed sub-committees.

Authorizations according to designated scopes of authority and duty with no characteristics of allowing the aforementioned Executive Board of Directors, Managing Directors and various sub-committees to be able to consider and approve transactions with potential conflicts of interest or conflicts of any other interests with the company or its subsidiaries (if any), except for approval of transactions in line with policies and criteria considered and approved by the board of directors.

10. The board of directors may authorize a director, several directors, or any other persons to perform any actions on behalf of the board of directors under the control of the board of directors, or the board of directors may authorize the aforementioned persons to have authority as deemed necessary by the board of directors within the period of time the board of directors deems fitting. The board of directors may cancel, withdraw, change or revise authorizations as deemed necessary.

Authorizations must not have characteristics of allowing the aforementioned persons to consider and approve of transactions in which they or other persons with potential conflicts of interests as stakeholders or other potential conflicts of interest with the company or its subsidiaries (if any), except for approval of routine business transaction according to normal trade conditions or according to policies and criteria considered and approved by the board of directors under criteria, conditions and designated methods concerned with connected/related transactions and acquisition or distribution transaction of key properties of registered companies according to announcements by the Capital Market Supervisory Board and/or the Stock Exchange of Thailand and/or any other announcements by related agencies.

1.2 Executive Board of Directors

The company's Executive Board of Directors comprises the following Four directors:

First-Last Name	Position
1. Mr.Poonphiphat Tantanasin	Chief Executive Officer
2. Mr. Ruangchai Kritsnakriengkrai	Executive Director
3. Mr. Kitti Achariyaboonyong	Executive Director
4. Miss Boonpa Ruddist	Executive Director

Miss Boonpa Ruddist is the secretary of the Executive Board of Directors appointed by the 1/2554 meeting of the board of directors on 24 February 2011.

Scope of Authority and Duties of the Executive Board of Directors

1. Proposal of goals, policies, business plans, including the company's business strategies and annual budgets for consideration of approval by the company's board of directors.
2. The executive board of directors must supervise compliance of the company's businesses with policies, work plans and budgets approved by the company's board of directors.
3. Consideration of approval of the company's regular business transactions, such as investments to purchase machinery and other properties in line with investments or budgets approved by the company's board of directors, purchases of raw materials into warehouses, sales of goods, etc. The balances for each transaction must be made under authority with the approval of the company's board of directors.
4. Establish corporate structure, authority to administrate the corporation and consider adjusting the salaries and bonuses of employees at levels lower than departmental managers, including consideration of approval of labor rates not included in annual budgets.
5. The executive board of directors has the authority to appoint or employ consultants associated with corporate administration

for maximum efficiency.

6. The executive board of directors must consider the company's profits and losses and propose interim dividend payments or annual dividends for approval from the company's board of directors.
7. The executive board of directors has the authority to authorize any person or persons to operate under the control of the executive board of directors or authorize the aforementioned person or persons to have authority as deemed fitting by the executive board of directors within a period of time deemed fitting by the executive board of directors. The executive board of directors may cancel, withdraw, change, or revise authorized persons or authorizations as deemed necessary.
8. Perform other duties assigned by the company's board of directors.

Authorizations of authority, duties and responsibilities by the executive board of directors must not be characteristic of authorizations or temporary authorizations enabling the person or persons authorized by the executive board of directors to approve of transactions in which that person or other persons have potential conflicts of interest (according to the definitions set forth in the announcements of the Capital Market Supervisory Board and/or the Stock Exchange of Thailand and/or related agencies) as stakeholders or with any other conflicts of interest with the company or its subsidiaries and/or related companies. The executive board of directors does not have the authority to approve of actions regarding the aforementioned issues. The aforementioned issues must be presented to the meeting of the board of directors and/or the meeting of shareholders (depending upon the case) for approval, except for approval of transactions under normal business and trade conditions according to the announcements of the Capital Market Supervisory Board and/or the Stock Exchange of Thailand and/or related agencies.

1.3 Board of Audit

The entire Board of Audit is composed of three independent directors who possess knowledge, ability, experience and qualifications in line with the SET's regulations. The Board is composed of non-executive directors with office terms of three years each.

First-Last Name	Position
1. Mr. Natthaphon Lilawattananun*	Chairman of the Board of Audit
2. Mr. Phonrat Piathanom	Audit Director
3. Mrs. Wasara Chotithammarat*	Audit Director

Remarks: * A director with sufficient knowledge and experience for reviewing the credibility financial statements.

Miss Boonnee Kusolsopit is the Internal Auditor and Secretary of the Board of Audit.

Scope of Duties and Responsibilities for the Board of Audit

1. To review the accuracy and sufficiency of the company's financial reports.
2. To review the suitability and effectiveness of the company's internal control systems and internal audits, and to consider the independency of the internal audit agency, and to approve consideration of the appointment, transfer, termination of the head of internal audit or any other agencies responsible for internal audits.
3. To audit the company's compliance with the laws governing securities and exchange markets, the specifications set forth by the Stock Exchange of Thailand and the laws related to the company business.
4. To consider, select and propose the appointment of independent individuals in order to serve as the company's auditors, to propose remuneration for the aforementioned persons, and to attend meetings with the auditors without the management at least once a year.
5. To consider related transactions or transactions with potential conflicts of interest for compliance with the laws and regulations of the stock market in order to ensure that the aforementioned transactions are reasonable and in the company's optimal interests.
6. To prepare Board of Audit reports for dissemination in the company's annual report. The aforementioned reports must be signed by the chairman of the Board of Audit and must contain the following minimum information:

- (a) Opinions on the accuracy, completeness and credibility of the company's financial report.
 - (b) Opinions on sufficiency of the company's internal control system.
 - (c) Opinions on legal compliance on securities and exchange, and securities market regulations or laws related to the company's business.
 - (d) Opinions on auditor's suitability.
 - (e) Opinion on potential conflict of interest transactions.
 - (f) Number of Board of Audit's meetings and meeting attendance by each audit director.
 - (g) Overall opinion or observation rendered by Board of Audit receives on execution of duty in line with charter.
 - (h) Other transactions that should be known by shareholders and general investors with the scope of the duties and responsibilities set forth by the board of directors.
7. To consider and approve the regulations of the company. The Internal Audit Committee prior to submission for approval.
 8. Approved the audit plan, budget and staffing of the internal audit department.
 9. To consider and review the independence and reporting practices of the internal audit section.
 10. To consider and approve the appointment, transfer or dismissal and evaluating the performance of internal audit manager.
 11. To review the code of conduct before the presentation to the Board of Committee.
 12. To review with management team to ensure that employees abide by the Code of Conduct
 13. To review with management regarding the preparation of reports and analysis of the management. (Management's Discussion and Analysis, or MD & A) and disclosed in the annual report.
 14. To review with management regarding financial management and Financial Risk's Management.
 15. To supervise the inspection and investigation about necessary perform and responsibilities of company to success
 16. To Review Committee duties at least once a year,
 17. To perform any other duties assigned by the Board of Directors and also be approved by the Audit Committee as well.
 18. To consider reporting on conflicts of interest of directors and management 4, the first since President at least once a year.

1.4 Nomination, Remuneration and Corporate Governance Committee

First-Last Name	Position
1. Mr. Phonrat Piathanom	Chairman of the Nomination, Remuneration and Corporate Governance Committee.
2. Dr. Kamol Takabut	Director
3. Mr. Poonhipat Tantanasin	Director

Miss Boonpa Ruddist serves as the Secretary of the Nomination, Remuneration and Corporate Governance Committee.

The Nomination, Remuneration and Corporate Governance Committee serves for three years per term.

Scope, Authority, Duties and Responsibilities of the Nomination, Remuneration and Corporate Governance Committee

Designates criteria and policy for recruiting company directors, sub-directors and high-ranking executives by considering the suitability of numbers, structures and composition of the Board of Directors along with designating director qualifications for presentation to the company's Board of Directors and/or the general meeting of shareholders to request approval, depending on the case.

Executive Recruitment and Appointment

1. Sets criteria and policy for recruiting company directors, sub-directors and high-ranking executives by considering the suitability of numbers, structures and composition of the Board of Directors along with setting director qualifications for presentation to the company's Board of Directors.
2. Considers recruitment, selection and currently qualified persons to the positions of directors whose terms are complete and/or in cases of vacant positions and/or additional appointments.

3. Considers and screens persons qualified for becoming Managing Directors to fill vacant positions, including the specification of succession plans for high-ranking executives.
4. Any other operations involved with recruitment according to assignments by the company's Board of Directors.
5. Assesses the performance of the Chief Executive Officer (CEO) for presentation to the meeting of the company's Board of Directors for consideration of approval.

Remuneration

1. Sets policies and criteria for paying remuneration to the company's Board of Directors, the Audit Committee, the Executive Committee and high-ranking executives by presenting to the company's Board of Directors.
2. Specifies necessary and appropriate amounts of annual monetary and non-monetary remuneration for the company's Board of Directors, the Audit Committee, the Recruitment, Remuneration and Good Governance Committee and the Executive Committee by considering amounts commensurate with duties, responsibilities, performance, comparisons with other companies in similar businesses and benefits expected from directors to present to the company's Board of Directors for consideration and present to the meeting of shareholders in order to request approval, depending on the case.
3. Considers the review of policies and criteria in setting remuneration and remuneration payment systems as deemed commensurate with duties and responsibilities in addition to reviewing concurrence with the company's performance and market conditions by primarily considering future benefits for the company.
4. Reports on policies and principles/reasons for remuneration set for directors and executives according to the specifications of the Stock Exchange of Thailand by disclosing in the annual information disclosure form (56-1) and the company's annual report (56-2).
5. Sets annual bonus and salary raise rates based on the company's performance.
6. Considers filtering the company's salary structures and other benefits and returns.
7. Performs any other relevant actions as assigned by the company's Board of Directors. The Administrative Department and various agencies are required to report or present information and relevant documents to the Recruitment, Remuneration and Good Governance Committee to support the Recruitment, Remuneration and Good Governance Committee in successfully operating according to assigned duties.

Corporate Governance

1. Considers reviews and presentations for the company's Board of Directors to approve of policies concerning good governance, business ethics, corporate social and environmental responsibility with sustainable development of the company and any other policies or practice guidelines promoting the company's sustainable growth.
2. Ensures that the Administrative Department implements various policies/practice guidelines in 1 for ongoing company development. The aforementioned policies and guidelines must be in line with and appropriate for the company's business, recommendations of associated agencies and comparable to international standards.
3. Follow-up and review various work systems in the organization for concurrence with good ethics and practice guidelines according to outlined policies and practice guidelines.
4. Supervise the company's operations according to good governance principles of agencies with regulatory authority in compliance with the law such as the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand, etc.
5. Report the organization's performance in line with corporate governance policies and other related policies to report to the company's Board of Directors and external organizations as appropriate.

1.5 The Board of Risk Management

First-Last Name	Position
1. Mr. Ruangchai Krissanakriangkrai	Director
2. Miss Boonpa Ruddist	Director
3. Mr. Kitti Achariyaboonyong	Director
4. Mr. Charoensak Sarawong	Director
5. Miss Kobpetch Chuphemporn	Director
6. Miss Suanya Phummanulap	Director
7. Mr. Nipat Chingchamikorn	Director
8. Miss Sasikarn Tantanasin	Director
9. Mr. Somporn Pragobmai	Director
10. Mr.Phot Wongkham	Director
11. Mr.Ittiphol Kasikram	Director
12. Mr.Chanchai Thanawan	Director
13. Miss Sureeporn Mitdhammana	Director & Secretary

Scope and Responsibilities of the Board of Risk Management

1. To set overall risk management policy and guidelines covering various types of important risks such as financial risks, exchange rate risks, marketing risks and other risks potentially affecting the company's operations and reputation for presentation to the board of directors for approval.
2. To perform assessment and analysis on potential risk factors including the setting of risk measuring criteria and acceptable risk ceiling.
3. To establish processes for managing, assessing, controlling and monitoring risks; to develop processes in to achieve optimum efficiency and suitability in managing all types of potential risks.
4. To regularly report to the board of directors on the management, operations and corporate risk status and changes as well as areas for improvement or correction and notify the Board of Audit to review the sufficiency and suitability of risk management.
5. Manages and controls overall corporate risk management for concurrence with good governance principles.
6. Reviews the sufficiency of policy and risk management systems as well as effectiveness of the system and compliance with set policy.
7. Arranges for a risk management team as necessary.
8. Executes duties as assigned by the board of directors.
9. The board of risk management holds meetings at least once every three months, and reports to the Board of Audit and the board of directors for awareness every quarter.

QTC recognize the importance of good corporate management in driving the organization toward stable growth and business expansion, steady financial status and earning apposite dividends for shareholders. Thus, the company has deemed it fitting to employ risk management practices with operational frameworks and risk management processes compliant with the standards of the Committee on Sponsoring Organizations of the Tread way Commission (COSO), which is an international standard, in order ensure that the people involved have understanding and proper application of risk management principles.

The Risk Management Committee specified the following corporate risk management policies:

1. Risk management is the responsibility of employees at all levels who are required to take into consideration the operational risks existing in their respective agencies and organization as well as prioritize risk management on appropriate and proper levels.
2. All departments are to be responsible for risk assessment; determining risk indicators, preventive guidelines and mitigation or prevention mitigation of potential risks, including regular monitoring and evaluation of risk management. Furthermore, all departments are required to make risk reports according to the operational framework and procedures for risk management.
3. Risk management procedures must be secondary to the decision-making, strategy planning, work plans and operations of the company.
4. When employees witness or become aware of risks with potential Impact on the company, the employee is required to immediately report the aforementioned risks to the persons involved for further risk mitigation.
5. Constantly promote and provide knowledge and understanding about risk management procedures and guidelines for executives and employees in order to emphasize the importance of awareness and participating in the organization's risk management as part of a culture leading to value creation.

1.6 Executives

The company has a total of 14 executives as follows:

First-Last Name		Position
1.	Mr. Poonphiphat Tantanasin	Chief Executive Officer
2.	Mr. Ruangchai Krissanakriangkrai	Managing Director
3.	Miss Boonpa Ruddist	Deputy Managing Director(General Management)
4.	Mr. Kittti Achariyaboonyong	Deputy Managing Director (Marketing)
5.	Mr. Charoensak Sarawong	Deputy Managing Director (Factory)
6.	Miss Kobpetch Chuphemporn	Manager, Finance & Accounting
7.	Miss Suanya Phummanulap	Manager, Domestic Sales Department
8.	Mr.Phot Wongkham	Manager, International Sales Department
9.	Miss Sureeporn Mitdhammana	Manager, Sustainable Development Department
10.	Mr. Nipat Chingchamikorn	Manager, Special Project Sale Customer and Service Department
11.	Miss Sasikarn Tantanasin	Manager, Business Development Department
12.	Mr. Somporn Pragobmai	Manager, Engineering Department
13.	Mr. Ittiphol Kasikram	Manager, Supply Chain & Logistic Department
14.	Mr.Chanchai Thanawan	Manager, Production Department

Scope of Authority and Duties of the Managing Director

1. Supervise business operations and/or administrate the company's daily work.
2. Carry out or administrate work in line with policies, work plans and budgets approved by the board of directors and/or the executive board of directors.
3. Set the company's policies, business plans, business strategies and annual budgets for presentation to the executive board of directors and request approval from the company's board of directors.
4. Consider approval of the company's regular business transactions, such as investments to purchase machinery and other assets in line with investment budgets or budgets approved by the company's board of directors, purchases of raw materials into warehouses and distribution of products, etc. The balance for each item must be approved by the authority of the company's board of directors.

5. The Managing Director has the authority to approve rates for labor, employment and filling employee positions, appointment and transfers of employees at levels lower than departmental managers as approved by the company's board of directors, including the consideration of duties and responsibilities of each unit and position.
6. Continually monitor and evaluate the company's performance. The Managing Director also has the duty of reporting on performance and management, including work progress, to the Executive Board of Directors, the Audit Committee and the company's board of directors.
7. Consider approval of entry into agreements regarding the company's regular business. The balance for each transaction must be in line with authorization already approved by the company's board of directors.
8. Issue orders, regulations, announcement and various records for the company's performance in line with policies in the interests of the company, including the maintenance of discipline in the corporation.
9. The Managing Director has the authority to appoint committees or various working groups for benefits, efficiency and transparency in management. The Managing Director has the authority to authorize any person or persons to operate under the control of the Managing Director and the Managing director may authorize the aforementioned person or persons to have authority as deemed fitting by the Managing Director. The Managing Director may cancel, terminate, change, or amend persons who have been granted authority, or the granting of said authority, as the Managing Director deems it fitting to do so.
10. Perform other duties as assigned by the executive board of directors or the board of directors.

On any issues where the Managing Director, persons authorized by the Managing Director, or persons with potential conflicts of interest (according to the definitions set forth in the announcements of the Capital Market Supervisory Board and/or the Stock Exchange of Thailand and/or related agencies) as stakeholders or other conflicts of interest with the company and/or its subsidiaries and/or affiliated companies, the Managing Director has no authority to approve of the aforementioned issues. The aforementioned issues must be presented to the meeting of the company's board of directors and/or the meeting of shareholders (depending upon the case) in order to request approval, except for approvals of transactions in accordance with the company's regular business and trade conditions as set forth in the announcements of the Capital Market Supervisory Board and/or the Stock Exchange of Thailand and/or related agencies.

The Chairman of the Board is under obligation to perform the following:

1. Serve as Chairman at meetings of the company's Board of Directors.
2. Call the meeting of the company's Board of Directors.
3. Cast the deciding vote in cases where the meeting of the company's Board of Directors has voted and found the vote to be tied.
4. Serve as the Chairman at shareholders' meetings.

Setting Authority to Approve of Financial Amounts

The company has set authority for the approval of financial amounts for the company's regular business transactions, which can be summarized as follows:

		Department Managers	Deputy Managing Director	Managing Director	Executive Board of Directors	Board of Directors
(1)	Investments from investment budgets (per project).	-	No more than 2 million baht	No more than 3 million baht	No more than 20 million baht	more than 20 million baht
(2)	Investments outside of budget plans.	-	-	-	No more than 5 million baht	more than 5 million baht

		Department Managers	Deputy Managing Director	Managing Director	Executive Board of Directors	Board of Directors
(3)	Expenses associated with assets: - Purchases of machinery according to investment budgets. - Purchases of other assets.	- -	No more than 2 million baht No more than 2 million baht	No more than 3 million baht No more than 3 million baht	No more than 24 million baht No more than 24 million baht	more than 24 million baht more than 24 million baht
(4)	Sale of products by setting prices according to price policies (Price List).	No more than 5 million baht	-	No more than 10 million baht	No more than 50 million baht	
(5)	Sale of products by setting prices lower than price policies (Price List) ¹ .	No more than 10%	-	No more than 15%	> 15%	
(6)	Requests to purchase raw materials into warehouses for production ² .	No more than 1 million baht	No more than 5 million baht	No more than 10 million baht	> 10 million baht	
(7)	Requests to purchase machinery/instruments/buildings and facilities ³ .	No more than 200,000 baht	No more than 2 million baht	No more than 3 million baht	> 3 million baht	

Remarks:

1. Considerations for approval of product sales at prices lower than price lists must also include consideration of sales values apart from proceeding as authorized in (5) by requesting approval from authorized persons in line with the sales values set forth in (4).
2. The company has considered granting the executive board of directors the authority to approve of requests to purchase raw materials for production into warehouses without financial limitations, because the main raw materials which need to be ordered, e.g. silicon and copper foil, are raw materials with few producers and sales prices referenced to prices on the global market which is constantly changing. Therefore, considerations of each purchase order will be made in terms of need for raw materials, including trends in the fluctuating prices of main raw materials, which rely on flexibility and speed in the process. In practice, however, the company reports the aforementioned issue to the company's board of directors in board of directors meetings.
3. Investments to purchase machinery must concur with investment structures approved by the company's board of directors. In terms of procedures, the party to purchase the assets must request approval to purchase assets as authorized in (3). The authority in (7) involves signing for approval of purchase requests.

2. Self – Evaluation of the Board of Directors

The board of directors requires the evaluation on the operation of the board of directors annually at least 1 time per year to perceive problems and threats during the last year and improve the efficiency of operation of Board of Directors because they can perceive their responsibilities and duties explicitly. In addition to improve the relationship between Board of Directors and Management Team as well as improve direction of problem solving to meet with good corporate governance. Assessment criteria has the following details: Performance, policies, correctional guidelines in cases where operations did not occur according to specifications, preparations before attending meetings, practices concerning the governance of the company's business, performance of duties as the Chairman and risk management monitoring, etc. The results of the assessment, the Commission analyzed statistical data. And the outcome of the evaluation of the Company's Board of Directors in order to contribute to the implementation of the next administration. And in 2016, the Company assessed the performance of every sub-committee, namely, the Audit Committee, the Recruitment, Remuneration and Corporate Governance Committee and the Risk Management Committee with the following assessment criteria: 1. Suitable sub-committee structure and qualifications resulting in effective work; 2. Effective sub-committee meeting performance and 3. Roles, duties and responsibilities of sub-committees. In 2018, Every committee has reviewed the excellent level

Chief Executive Officer' Performance Evaluation

The company's board of directors has scheduled annual evaluations of the performance of directors. The company adapted its evaluation form based on a sample self-evaluation form for directors of the Stock Exchange of Thailand as deemed fitting and concurrent with the organization's goals and strategic plans. The assessment criteria are divided into the following topics: 1. Leadership; 2. Setting Strategy; 3. Strategy Performance; 4. Planning and Financial Performance; 5. Relationship with the Board of Directors; 6. External Relationships; 7. Management and Personnel Relationships; 8. Handing Over Positions; 9. Product and Service Knowledge; 10. Personal Qualities. The scores of the board of directors' self-evaluation were submitted to statistical data analysis for the purpose of improvement and development of various and different aspects as well as the consideration of setting remuneration rates and commensurate incentives. In the year 2018, there performance is excellent.

3. Board of Directors Structure and Components

The company's board of directors allocated for a suitable number of directors based on its business size. At present, there are nine directors; two are executive directors and seven are non-executive directors. All five non-executive directors are independent directors. All independent directors are independent from Management and major shareholders of the company.

Independent directors account to 55.55 percent of the entire board of directors.

1. Mr. Kirk-Krai Jirapaet
2. Mr. Natthaphon Lilawatthanun
3. Mr. Phonrat Piathanom
4. Dr. Kamol Takabut
5. Mrs. Wasara Chotithammarat

The definition of its independent directors

The company has determined the definition of its independent directors as the director who is non-executive director and do not involve in the management permanently, and is not the company's major shareholder. The company has specified requirements equal to the minimum requirements set by the SEC and the SET. Nominated independent directors of the company are fully qualified according to the definitions as below:

- (1) Holding share of no more than 1 percent of the total voting shares of the company, parent company, subsidiary company, related company or juristic person of person who might have conflict of interest by including the shares held by the related persons
- (2) Not a director or used to be a director who has a managing role, an employee, officer or consultant who receives the salary or authorized person of the company who has the influence on parent company, subsidiary company, related company, subsidiary company at the same level or juristic person who might have a conflict of interest unless such person has been released from such status not less than 2 years before the application is submitted to Securities and Exchange Commission Thailand
- (3) Not a person who is related by blood or by legal registration as father, mother, spouse, siblings and child including the spouse of the child of the managing executive, major shareholders, authorized controlling persons or those nominated to be managing executives or authorized controlling persons of the company or subsidiary company
- (4) Does not have or used to have the business relationship with the company, parent company, subsidiary company, related company or juristic person who might have the conflict of interest in the way that might obstruct independent decision making. The person is not or used to be a major shareholder, director who is not an independent director, or managing executive of those who have business relationship with the company, parent company, subsidiary company, related company or juristic person who might have a conflict of interest unless such person has been released from such status not less than 2 years before the application is submitted to Securities and Exchange Commission Thailand

- (5) Is not or used to be the auditor of the company, subsidiary company, related company, or juristic person who might have a conflict of interest and not a major shareholders, director who is not an independent director, managing executive or audit partner of the company, parent company, subsidiary company, related company or juristic person who might have conflict of interest unless such person has been released from the status not less than 2 years before the application is submitted to Securities and Exchange Commission Thailand
- (6) Is not or used to be professional service provider including legal consultant or financial consultant who receives the service fee more than 2 million baht per year from the company, parent company, subsidiary, related company or juristic person who might have a conflict of interest. In the case where the professional is a juristic person, this shall include major shareholders, director who are not an independent director, managing executive or managing executive partner of the service providing entity unless such person is no longer in the status for at least 2 years before the application is submitted to Securities and Exchange Commission Thailand
- (7) Is not the appointed director who represents the directors of the company, major shareholders or the shareholders who are related to the major shareholders
- (8) Does not possess any characters that prevent giving an independent opinion on the operation of the business
- (9) Do not engage in the same business and competing with the company or its affiliates. Do not hold significant portion of shares in the limited partnership, or be a management director, employee, officer, consultant who earned permanent salary, or hold more than half of voting shares in other companies that engage in the same business and competing significantly with the company or its affiliates.
- (10) Each independent director shall be able to hold this position continuously but not over than consecutive 9 years.

The Board of Directors does not have independent directors holding positions as directors in more than five registered companies and none of the directors or high-ranking executives are employees or partners in outside auditing companies whose services were commissioned by the Company during the past two years.

4. Appointment of Directors and High-Ranking Executives

The company's plan is to appoint directors and high-ranking executives appropriately and transparently to ensure that the company has directors and high-ranking executives who are professionals capable of independent management from major shareholders or other shareholders. The Recruitment Committee determines remunerations and corporate governance, and is responsible for appointing suitable people into selection according to specified selection methods, the criteria and selection method of which is dependent upon the propriety of the company's situation during which time.

5. Director and Executive Development

- 5.1 The company's board of directors has policy for promoting and facilitating training and education the people involved in directing and managing the company's business, which includes the company's directors, auditing directors, executives and secretaries to ensure that operations are constantly improving, which includes organizations such as the Thai Institute of Directors Association (IOD).
- 5.2 The company has prepared documents and information beneficial to the performance of new directors to accompany business study manuals and practice guidelines of the company to new directors.
- 5.3 The company has plans to ensure that selection of people who undertake responsibilities in any important executive position is fitting and transparent for the purpose of ensuring that the company has professional executives capable of independent management from major shareholders or other shareholders. The company's board of directors makes considerations and reviews the aforementioned plans annually. Executives appointed to succeed the aforementioned positions will be provided with an individual development plan to prepare them for future promotions.

6. Board of Directors Meetings

As a means of supporting and promote the company, the board of directors is attend every company board of directors' meeting, for which the company scheduled meetings in advanced every year in order to notify the board of directors in each meeting by setting at every Thursday of second week of each quarter. Clear meeting agendas are set whether they are memoranda or agendas for consideration. Documents completely accompany meetings in sufficient numbers of decision-making and are delivered to the board of directors at least seven days in advance in order to ensure that every member of the board of directors has the ability to discuss and express opinions transparently. The chairman of the board will evaluate comments and summaries obtained from the meeting. Meeting reports are created by the company's secretaries, and after approved by the meeting, are stored in document cabinets on the second floor of the company's main office in Bangkok, where documents can be verified and audited by directors and other people involved. Finally, the company has set policy concerning the quorum for meetings of the board of directors in which at least half of the all directors must be present in order to form a meeting quorum and Directors and related parties are auditable. The Company has set policy on the quorum of a meeting of the Board of Directors requiring no less than half of all directors in attendance to have a meeting quorum. Moreover, the minimum quorum when the Board of Directors passes meeting resolutions must be no less than two-thirds of the directors.

The attendance details of each director for 2016 are summarized as follows:

First-Last Name	Position	Meeting Attendance/All Meetings (Times)		
		Company Director	Auditing Director	Nomination Director
1. Mr. Krirk-Krai Jirapaet	Chairman of the Board	7/7	-	-
2. Mr. Natthaphon Lilawatthanun	Chairman of the Board Auditing Committee/ Director	6/7	5/5	-
3. Mr. Phonrat Piathanom	Chairman of the Nomination, Remuneration and Corporate Governance Committee / Auditing Director/ Director	7/7	5/5	2/2
4. Mrs. Wasara Chotithammarat	Director/ Auditing Director	6/7	5/5	-
5. Dr. Kamol Takabut	Director/ the Nomination, Remuneration and Corporate Governance Director	5/7	-	2/2
6. Mr. Suroj Lamsam	Director	4/7	-	-
7. Mr. Viraphonh Viravong*	Director	3/4	-	-
8. Mr. Poonphiphat Tantanasin	Director/ the Nomination, Remuneration and Corporate Governance Director	6/6	-	2/2
9. Mr. Ruangchai Kritsnakriengkrai	Director	6/6	-	-

Remarks: * Mr. Viraphonh Viravong is appointed the director by shareholder meeting on 25 April 2018

7. Term of Office

The company's board of directors is composed of skilled and knowledgeable people. The company has made arrangements as compatible with the size of its business. At present, the company has a total of nine directors; two are executive directors , two is non-executive and five are independent directors for a number over 55.55 percent of the entire board of directors. The descriptions of the positions held by individual directors are as follows:

First-Last Name	Year of Appointment	Most Recent Date of Selection	Type of Director	Recruited/ Appointed to Directorship in 2018	Next Appointment
1. Mr. Krirk-Krai Jirapaet	2016	2018	Independent Director	Yes	2021
2. Mr. Nattharphon Lilawatthanun	2011	2018	Independent Director	Yes	2021
3. Mr. Phonrat Piathanom	2011	2017	Independent Director	No	2020
4. Dr. Kamol Takabut	2016	2016	Independent Director	No	2019
5. Mrs. Wasara Chotithammarat	2016	-	Independent Director	No	2019
6. Mr. Suroj Lamsam	2017	2017	Director	No	2020
7. Mr. Viraphonh Viravong	2018	-	Director	Yes	2021
8. Mr. Poonphiphat Tantanasin	2011	2017	Executive Director	No	2020
9. Mr. Ruangchai Kritsnakriengkrai	2016	2018	Executive Director	Yes	2021

Remarks: All five independent directors hold the position of independent director beginning from the year of appointment for a term of nine years.

The procedures for nominating directors to fill vacant positions from directors vacating office according to term as follows:

1. The company gives opportunities for shareholders to nominate persons for appointment as company directors through the company's website in line with the specifications of the SEC and the Stock Exchange of Thailand. However, it appeared that no minor shareholders submitted names for appointment as directors.
2. Inquiries are made into the willingness of independent directors vacating position according to term and the intentions of major shareholders are asked in order to nominate directors to replace directors vacating office according to term.
3. The Nomination, Remuneration and Corporate Government Committee makes screening considerations before making proposals to the Board of Directors for consideration to further propose to a meeting of shareholders to consider appointing directors based on qualifications of directors as specified by relevant laws, company regulations and the charter of the Board of Directors.

8. Corporate Secretary

As a means of building knowledge about the work of the corporate secretary and to enable efficient performance of the corporate secretary's duties, the company has stipulated that the corporate secretary be required to pass various training courses such as basic legal courses and courses on criteria associated with listed companies, courses for corporate secretaries and attendance at various seminars held by the Stock Exchange of Thailand and the Thai Institute of Directors (IOD).

In Board of Directors Meeting No. 1/2554 on 24 February 2011, the company's board of directors passed a resolution for the appointment of Boonpa Ruddist, a person possessing knowledge and ability who has passed training courses in relation to the performance of the duties of company secretaries, to serve as the Corporate Secretary in compliance with Section 89/15 of the Securities and Exchange Act of B.E. 2535 (1992), revised with the Securities Exchange Commission Act (No.4) of B.E. 2551 (2008). The duties and responsibilities of the Corporate Secretary are as follows:

1. Serves as a center for storing various important documents/certificates.
2. Registers directors and reports direct and executive stakeholders.
3. Makes arrangements for meetings of the board of directors and shareholders, meeting invitations and minutes to the meetings.
4. Reports on resolutions and policies passed by the board of directors and shareholders' meetings to related executives and follows up on the aforementioned resolutions and policies through the chief executive officer.
5. Observes and makes arrangements for the disclosure of information and information technology reports on the areas under

his/her responsibility to agencies; directs and supervises in compliance with the law, regulations and policies concerning the company's disclosure of news and information.

6. Contacts and communications with ordinary shareholders to inform them of various shareholders' rights/privileges and company news.
7. Delivers news and information to directors on topics concerning the company's business operations in order to accompany the performance of directors' duties.
8. Makes arrangements for the provision of advice for newly appointed directors.
9. Other matters as assigned by the company's board of directors.

Brief Background of Corporate Secretary

Mrs. Boonpa Ruddist

Education: Bachelor of Business Administration, Kasem Bundit University

Training Courses: Company Secretary Program (CSP), Class No. 29/2009

Effective Minute Taking (EMT), Class No.13/2009

Board Reporting Program (BRP), Class No. 2/2010

Company Reporting Program (CRP), Class No. 1/2011

Qualifications: Ability to coordinate tasks, summarize topics and arrange minutes to meetings; competent work performance, creative thinking, good skill in interpersonal relationships, leadership capacity, communications techniques and strategic planning.

9. Remuneration for Directors and Executives

9.1 Monetary Remuneration

Remuneration for the Board of Directors

At the shareholders general meeting in 2018 which was held on 25 April 2018, a resolution was passed on the setting of director remuneration for 2018 in the form of meeting fee, monthly fee approved by shareholding meeting and separate not over 5,000,000 baht for bonus which the company paid as follows:

(Unit: Baht)

Name	Position	Meeting Fee			Monthly Fee	Annual Remuneration	Total
		Company Director	Audit Director	Nomination, Remuneration and Corporate Governance Director			
1. Mr. Krirk-Krai Jirapaet	Chairman of the Board	140,000	-	-	300,000	1,100,000	1,540,000
2. Mr. Nattapol Lilawattananan	Chairman of the Board Auditing Committee/ Director	90,000	75,000	-	240,000	560,000	965,000

Name	Position	Meeting Fee			Monthly Fee	Annual Remuneration	Total
		Company Director	Audit Director	Nomination, Remuneration and Corporate Governance Director			
3. Mr. Phonrat Piathanom	Chairman of the Nomination, Remuneration and Corporate Governance Committee / Auditing Director/ Director	105,000	40,000	30,000	240,000	560,000	975,000
4. Mrs. Wasara Chotithammarat	Director/ Auditing Director	90,000	50,000	-	240,000	560,000	940,000
5. Dr. Kamol Takabut	Director/ the Nomination, Remuneration and Corporate Governance Director	75,000	-	20,000	240,000	560,000	895,000
6. Mr. Suroj Lamsam	Director	60,000	-	-	240,000	560,000	860,000
7. Mr. Viraphonh Viravong*	Director	45,000	-	-	160,000	380,000	585,000
8. Mr.Poonphiphat Tantanasin	Director/ the Nomination, Remuneration and Corporate Governance Director	90,000	-	20,000	-	-	110,000
9. Mr.Ruangchai Kritsnakriengkrai	Director	90,000	-	-	-	-	90,000
Total		785,000	165,000	70,000	1,660,000	4,280,000	6,960,000

Remarks: * Mr. Viraphonh Viravong is appointed the director by shareholder meeting on 25 April 2018

No other form of remuneration.

9.2 Executive Remuneration

In 2017 and 2018, the company paid remuneration to executives amounting to 20.90 million baht and 23.75 million baht, respectively increased from 2017 by 13.64 percent. The aforementioned remuneration includes salaries, bonuses and providence fund contributions.

The only other form of remuneration would be a company car.

Accordingly, remunerations for executive directors and high-ranking executives are considered for approval by the Board of Directors.

10. Supervision of Subsidiaries' and Affiliates' Operations

At present, the company has one subsidiaries and one joint company as follows:

1. QTC Global Power Co., Ltd. (subsidiaries Company) produces electricity and other energy, the establishment on 28 September 2016 capital 700 million
2. PPWE Co., Ltd. (associated company) produces energy, the establishment on 12 January 2016 capital 1 million.

The Company governs subsidiaries and/or associates based on good governance guidelines. The Company appointed the Chairman of the Executive Committee and the Managing Director as the Chief Executive Officer and a director of the subsidiary to set business guidelines, goals and good governance guidelines consistent with the mother company.

11. Securities Trading Policy and Using the Company's Inside Information and Trade Secrets

1. The company strictly forbids its directors, executives, employees and staff, including the spouses and under-age children of the aforementioned, from trading the company's shares during a period of one month before the financial statements are disclosed to the public.
2. The company forbids its directors, executives, employees and employees, including spouses and under-age children of the aforementioned, from using the company's internal data available or in a way which might affect the company's security price changes which have not yet been disclosed to the public for the purpose of purchasing, selling, purchase/sale proposals or persuading other individuals to purchase, sell, propose to purchase/sell the company's securities, whether directly or indirectly, before the data is disclosed to the public, whether the aforementioned actions are for personal gain or the gain of others, or aimed at having the other persons take the aforementioned actions with the benefit of personal gain/remuneration. Any person found in violation will be subject to penalties according to the disciplinary measures set forth by the company.
3. The company's directors, executives, staff and employees are forbidden from disclosing company secrets and/or internal data to other individuals for personal gain or for the gain of other individuals, whether directly or indirectly, with or without remuneration.
4. The interests and trade secrets of the company or the company's customers must be maintained. Disclosure of company's trade secrets to outside individuals, especially to the company's rivals, even when a director, manager or employee term of office has expired is strictly forbidden.

The company's policy on securities trading, the use of inside information and trade secrets is recorded in the code of conduct which the company has made into a manual book given to all directors, executives and employees, all of whom are required to sign to assure complete compliance. Moreover, compliance with the code of conduct is supervised. The full version of code of conduct can be viewed at www.qtc-energy.com.

12 Personnel

1 Number of Employees

As of 31 December 2018, the company had a total of 234 employees (not including 11 executives) with 228 as regular employees and 6 as daily employees according to the following details:

Department	Regular Staff (persons)	Daily Staff (persons)	Total (persons)
Special Project Sale & Customer Service	16	-	16
Supply Chain and Logistics	22	-	22
International Sales	12	-	12
Domestic Sales	3	-	3
Administration	6	-	6
Business Development	-	-	-
Accounting and Finance	8	-	8
Production	118	6	124
Sustainable Development Department	12	-	12
Engineering	26	-	26
Safety	1	-	1
R&D	1	-	1
Marketing Strategy	2	-	2
Internal Audit	1	-	1
Total	228	6	234

Remarks: Under the company's organizational structure, the Business Development Department, R&D Section, report directly to the Managing Director / International Sales Department, Domestic Sales Department, Special Project Sale & Customer Service Department, Marketing Strategy Department, report directly to the Deputy Managing Director(Marketing) / Sustainable Development Department, Administration Department, report directly to the Deputy Managing Director(General Management) / Accounting and Finance Department, report directly to the Deputy Managing Director(Accounting and Finance) / Production Department, Engineering Departments, Supply Chain and Logistics Department, report to the Deputy Managing Director(Factory)

2. Labor Disputes

-None-

3. Employee Remuneration

The board of directors has set policies and practice guidelines concerning employee remuneration and benefits Taking into account the results of the operation. Each year, profitability and performance measures based on Balanced Scorecard for which employee compensation is as follows:

Monetary Remuneration

In 2018, the company paid remuneration to its employees (not including executives) amounting to 84.20 million baht in the form of salaries, bonuses, overtime pay, provident fund contributions. The company established a provident fund contributions on 30 July 2008.

Other Remuneration

-None-

The company has created employee handbooks and distributed to all employees in the organization for acknowledgement of rules, regulations and benefits.

4. Personnel Development Policy

It is the company's vision to be a world class transformer manufacturer with a mission to respond to challenges in developing the customers' electrical systems to meet world class quality standards leading to the setting of all personnel development policy so personnel have capability to achieve the organization's mission and vision based on the following key tenets:

- 1 Constructive Engagement: Having employees at all levels participate in setting work policy at differing levels. However, the extent of participation varies and is focused on joint solutions involving development with emphasis on seeking solutions for resolving issues (rather than pinpointing the guilty party) by providing opportunities to hear and respect differing opinions.
- 2 Sharing Success: Build a working atmosphere where everyone participates in corporate success, which will be reflected in the form of remuneration focused more on overall corporate success than individual achievements, and promoting employees to learn from practice by using the knowledge obtained from previous practice to generate replication, improvement and development of knowledge for future practice by encouraging learning exchanges within the corporations and remaining updated on changing business conditions and responding to those changes. Since everyone must achieve together, value must be given to the success of each employee, agency and business unit which will lead to the success of the entire corporation.
- 3 Better Attitude: Having an attitude that everything must "be better than before" in order to promote continual improvement to meet the expectations of customers, society, organizations and shareholders.

13 Auditor Remuneration

The remuneration of the auditors for the year 2018 amount 1,380,000 baht, up from 170,000 baht in 2017 the company did not pay a fee to the auditor. Auditing the Auditor's Office. The parties related to the auditor and the audit firm affiliated auditor. During the fiscal year, the company did not pay a fee and subject. No company directors and executives who are employees or partners of the audit firm

Non-Audit Fees

The company does not have other non-audit fees.

14. Director and Senior Executive Share Holdings

Company Director/ Senior Executive	Position	Characteristics Of Shareholdings	No. of Common Shares As of 30 Dec. 2017	No. of Common Shares As of 30 Dec. 2018	Increase (Decrease) During financial year
Mr. Krirk-Krai Jirapaet*	Chairman	No	0	0	0
Mr. Nattharphon Lilawatthanun	Director	No	0	0	0
Mr. Phonrat Piathanom	Director	Direct	272,000	271,500	(500)
Dr. Kamol Takabut	Director	No	0	0	0
Mrs. Wasara Chotithammarat	Director	No	0	0	0
Mr. Suroj Lamsam	Director	No	0	0	0
Mr. Viraphonh Viravong*	Director	No	0	0	0
Mr. Poonphiphat Tantanasin	Director /CEO	Direct	598,000	598,000	0
		Indirect(Wife)	602,600	602,600	0
Mr. Ruangchai Kritsnakriengkrai	Managing Director	No	0	0	0
Miss Boonpa Ruddist	Duty Director Managing	No	0	0	0
Mr. Kitti Achariyaboonyong	Duty Director Managing	Direct	0	0	0
Mr. Jaroensak Sanwong	Duty Director Managing	No	0	0	0

Corporate Governance

The board of directors of the company realizes the importance of good governance since it is an important mechanism that leads to an efficient, transparent and verifiable management system which, in turn, creates trust and confidence in the shareholders, investors, stakeholders and all parties involved. Having good governance will be a value adding tool that helps build the competitiveness and promotes sustainable growth of the company in the long run. The board of directors has, therefore, assigned the Remuneration and Good Governance Committee the task of following up on compliance with policy and human resources development to build good people with sound morals and ethics.

In following up on compliance with corporate governance policies in 2018, the company made arrangements for the companywide promotion and communication of information to directors, executives and employees at all levels by the distribution of letters, good governance and the business code of conduct. The company's board of directors, executives and employees has acted in compliance with good governance policy and the business code of conduct. Moreover, compliance has been regularly monitored and there were no issues or situations involving non-compliance with the abovementioned. By removing the IOD's approach comes as the next Pat guidance.

The aforementioned commitment in 2018 has resulted in the company's evaluation in the annual meeting of shareholders 2018 with a score of 100 points, or a good level according the Quality of Annual General Meeting (AGM) Project, the Thai Investors Association (TIA) Project, which is another means of building sustainable good governance. In addition, the results of the survey of information on Corporate Governance Report of Thai Listed Companies 2018 earned an overall score of 96%, which falls within a Excellent CG Scoring range, which is above average for listed company scores. Nevertheless, the company remains firmly committed to developing the company's good governance policies for sustainability.

The company has reviewed the good corporate governance policy every year. The Committee has considered and reviewed the implementation of the principles comply with CG Code 2017 There are 8 Guidelines that are already applied to business context of the company. for relation with the Stock Exchange of Thailand in the 6/2018 meeting of the board of directors on 14 December 2018, which covered five sections of principles detailed as follows:

Section 1: The Rights of Shareholders

The company is aware of and gives importance to the basic rights of shareholders such as rights to purchase, sell, or transfer shares, rights to receive shares in the business, rights to receive sufficient news and information about the business, rights to participate in meetings to exercise rights to vote in shareholders' meetings to appoint or remove directors, appointments of auditors and issues with impact on the company, such as distribution of dividends, specifications or reviews of regulations, memorandums of association, regulations, reductions or increases in capital, etc.

Apart from the above mentioned basic rights, the company has also acted on various issues to promote and facilitate the exercising of shareholders' rights as follows:

- The company sends letters of notification to attend shareholders' meetings to shareholders no less than 21 days before the meeting date for 2018 sending it at 3 April, 2018. Letters contain schedules for dates, times, places and agendas of the meetings, including data regarding topics requiring resolutions at the meeting. The information is also posted at the company's website in Thai and English for at least one month for 2018 it was posted at 23 March, 2018 so shareholders are given a sufficient amount of time to study the information accompanying the meeting before receiving information in the form of documents from the company.
- The company has set agendas for the annual shareholder's meeting for compliance with the principles of corporate good governance as follows:
 - Agenda 1 Consideration to approve the minutes to the shareholder's general meeting.
 - Agenda 2 Consideration to acknowledge the company's performance for the previous year.

- Agenda 3 Consideration to approve the company's financial budget for the accounting cycle for the year ending 31 December of the previous year.
 - Agenda 4 Consideration to approve the allocation of profits from operations for the previous year.
 - Agenda 5 Consideration of the nomination of replacement directors for directors whose terms of office have expired.
 - Agenda 6 Consideration to approve director's compensation.
 - Agenda 7 Consideration of the appointment of auditors and set compensation for the annual audit.
 - Agenda 8 Consideration of other matters by giving the shareholders opportunities to inquire about key issues.
- In the event that a shareholder is unable to attend a meeting, the shareholder may authorize an independent director or an individual to attend the meeting on his/her behalf by using any one of the letters of proxy sent by the company with the meeting invitation.
 - Shareholders are given opportunities to send questions on meeting agendas to the board of directors no less than 20 days before the meeting date via the company's website at 23 March,2018 or investor relations e-mail notified through the SET news system.
 - Shareholders are fully and independently given opportunities to ask questions, express opinions and suggestions.
 - The company fully facilitates shareholders in exercising their rights to attend meetings and cast votes. The meetings are held on working days at hotels in Bangkok and Bangkok suburb areas where transportation is convenient for the shareholders travelling to attend the meetings and prepare a revenue stamp for the shareholder proxy.
 - All directors and high-ranking executives attend the meeting and address questions raised in the shareholder's meetings together.
 - After the meetings, the company posts the voting results for each agenda from the shareholder's general and special meetings on the next day at the company's website, at 25 April,2018 and prepares minutes to the meetings with accurate and complete data disclosed via the company's website within 14 days from the meeting date, so shareholders are able to verify the results. The company post it at 9 May,2018
 - The company employs technology in the shareholder's meetings in terms of shareholder registration, vote counting and display so the meeting can proceed quickly, accurately and precisely.

Section 2: The Equitable Treatment of Shareholders

The company has policies for practicing and protecting the rights of every shareholder equally and fairly, including shareholders who are executives, shareholders who are not executives, Thai shareholders or foreign shareholders, major shareholders or minor shareholders and corporate shareholders. Shareholders are entitled to equal fundamental rights.

- The company allows shareholders who are unable to attend meetings to authorize an independent director or an individual as a proxy to attend the meeting on the shareholder's behalf.
- The company allows shareholders to propose issues to be listed as meeting agendas and nominate persons as director candidates in the shareholder's meeting in advance in line with criteria set by the company as posted at the website <http://www.qtc-energy.com>. For 2018 the company post it between 3 September,2018 until 3 December ,2018
- 2018, the company will not add meeting agendas without sending notification to shareholders, particularly agendas that are important and require time to study information before making decisions.
- The board of directors grants shareholders opportunities to exercise the right to appoint individual directors and encourages the use of voting cards to ensure voting transparency.
- The board of directors sets up measures to prevent insider trading by related individuals, including directors, executives, employees, employees as well as the spouses and underage children of the aforementioned individuals.

- The board of directors has also set up punitive regulations on the company's disclosure of information, or the use of the company's information for personal gain in line with the policy to prevent insider trading.
- The company educates directors and its executives on the burden and duty to report shareholdings of the directors as well as the director's spouses and underage children, and to report changes in shareholdings to the Securities and Exchange pursuant to Article 59 and the punitive clauses of the Securities and Exchange Act of 1992.

Section 3: The Role of Stakeholders

The company gives importance to the rights of stakeholders and treats all related parties with fairness, as follows:

- **Employees:** The company is aware of the importance of every company employee who will take part in pushing the company toward developing its business to the future. Therefore, the company is focused on continually developing the capabilities, knowledge and skills of employees, including considerations of suitable remuneration according to the knowledge and capacity of each employee in addition to the maintenance of work environments by considering quality of life and occupational safety. The company treats every employee equally and fairly.
- **Trading Partners and Trade Accounts Receivable:** The company treats trading partners who are suppliers and financial debtors fairly, equally and without taking advantage by strict adherence to trading conditions and/or agreements made with one another in order to improve business relations in the interests of both parties.
- **Customers:** The company pays attention to customers and takes responsibility by focusing on production of high quality standardized products and responding to the needs of customers while maintaining customer confidentiality. The company also gives importance to setting proper equal prices for products sold to customers.
- **Competitors:** The company behaves in compliance with the rules of good competition and set laws, maintaining the norms of codes of conduct for competition with avoidance of fraudulent methods which would destroy competitors.
- **Community and Society:** The company conducts its business with consideration of environmental impact. The company emphasizes continually building conscience, social and community responsibility in the company and support of activities in the interests of the public without violating laws.
- The company has a compensation measures published in the company's code of conduct in case where stakeholders are damaged by the company's violation of the stakeholder's legitimate rights.
- The company declares that directors, executives and employees who learn of important inside information potentially affecting securities trading prices must stop trading the company's securities within one month before the company announces its performance or before the inside information is disclosed to the public.
- The company has clear procedures for cases where persons disclose matters of legal violation,s financial reporting accuracy, internal control errors or misconduct. These persons can report such matters by letter to the board of audit. Furthermore, the company has set up measures to protect the informants' rights.
- In order to lead to earnest practice, the company has established a manual on ethics as a part of discipline. The directors, executives and employees at all levels are required to strictly adhere to the aforementioned and violations or non-compliance will be subject to disciplinary action under the regulations governing human resources management.
- The company has set policy involving conflicts of interest in the manual on ethics in order to prevent the use of opportunities for seeking personal gain.
- **Notification of Complaint Policy**
- The committee provides employees and interested persons channels of providing complaints, comment and inform the trace of any illegal action through mail to the audit committee of the company at: QTC Energy Public Company Limited 2/2 Soi Krunghthep Kritha 8 Yaek 5, Krunghthep Kritha Road, Huamark sub-district, Bangkapi district, Bangkok 10240 or send e-mail to audit@qtc-energy.com

Section 4: Disclosure and Transparency

The board of directors places importance on correct, complete and transparent information disclosure, from reports on financial data and general data according to the criteria of the SEC and the Stock Exchange of Thailand to the key information which may affect the company's security's prices and potentially affect the decision-making process of the company's investors and stakeholders, so the company's related individuals receive equal the information. Following this proposed sale of stock and following the company's listing on the Stock Exchange of Thailand, the company will disclose information to the shareholders and the public via Stock Exchange of Thailand data dissemination channels and the company's website at <http://www.qtc-energy.com>.

The board of directors is aware of its responsibilities and firmly committed to strictly overseeing compliance with the laws and regulations related to information disclosure and transparency as follows:

- The company publishes information in line with the set criteria through channels of the SET, Annual Disclosure Form (Form 56-1) and the Annual Report (Form 56-2) and via the company's website in both Thai and English with regular information updates.
- The board of directors reports corporate governance compliance results through the Annual Disclosure Form (Form 56-1) and the Annual Report (Form 56-2) and company's website.
- The board of directors compiles reports on the board of directors' responsibilities for financial transactions displayed together with the auditor's report and arranges for reports on corporate governance by the Board of Audit in the Annual Report (Form 56-2).
- Annual Disclosure Form (Form 56-1) and the Annual Report (Form 56-2) the board of directors publishes name list, roles and responsibilities of members of the board of directors and sub-committees, number of meeting and number of meetings attended by each director in each year through the Annual Disclosure Form (Form 56-1) and the Annual Report (Form 56-2).
- The company has set policy for information disclosure through the Annual Disclosure Form (Form 56-1) to assure compliance with the Capital Market Supervisory Board's notification on the criteria, terms and methods for information disclosure regarding a company's financial status and business performance in the following areas: 1) Policy and Overview of Business Operations; 2) Business Characteristics; 3) Risk factors; 4) Assets utilized in business operation; 5) Legal disputes; 6) General and Other Relevant Information; 7) Securities and shareholders information; 8) Management; 9) Corporate Governance; 10) Corporate Social Responsibility; 11) Internal Control and Risk Management; 12) Related Party Transactions; 13) Financial information; 14) Management Discussion and Analysis.
- The board of directors and executives report shareholdings and the changes in shareholdings in line with regulations set by the Securities and Exchange Commission.
- The first four directors and executives counted from the Managing Director are under obligation to submit a report on their own stake holdings and the stake holdings of related individuals to the chairman of the board and the chairman of the Board of Audit with disclosure of information for all directors' awareness in line with the Securities and Exchange Act of 2008. The board of directors has set policy to designate executive level employees with the title of division manager to submit to the Board of Audit their personal stake holdings and the stake holdings of related individuals in order to assure transparency and fairness in business conduct.
- The board of directors arranges for the maintenance of effective internal controls in order provide reasonable assurance that accounting records are recorded accurately, completely and sufficiently to maintain the company's assets, and in order to be aware of the weaknesses so misconduct or significant irregular operations can be prevented. The board of directors has established the Board of Audit composed of non-executive directors serving to audit financial transactions, related party transactions and internal control systems. The Board of Audit directly reports to the board of directors.
- The company has established an investor relation unit for the purpose of communications with outside individuals, namely, shareholders, institution investors, general investors and related public analysts as follows:

1. To disclose important information for public awareness.
2. To thoroughly publish information to the people.
3. To clarify rumors or news.
4. To prevent the promotional disclosure of unreasonable information.
5. To use inside information in the trading of listed companies with accuracy, sufficiency, modernity, equity, transparency and fairness.
6. To carry out procedures when the securities trading of listed companies deviates from the market's normal conditions.

he unit can be contacted through the following channels:

Telephone	: (66) 2379 3089, extension 241
Fax	: (66) 2379 3099
Email	: ir@qtc-energy.com
Website	: http://www.qtc-energy.com/irs/investor_th.html

In addition, the company has appointed the Chief Executive Officer or the Managing Director as the party with the authorization to provide the aforementioned information.

- The company has appointed contact persons who are authorized to coordinate with the SET in disclosing information.
 1. Matters on the disclosure of information in line with events occurring, namely, asset acquisition/discharge (sales) transactions, related transactions, shareholders' meeting schedules, changes in directors and auditors, relocating headquarters, minutes to the shareholders' meetings and investment projects, dividend payments/ dividend payment suspensions are to be made by the Managing Director.
 2. The disclosure of information according to accounting cycle, namely, annual financial statements, and quarterly financial statement, Annual Disclosure Form (Form 56-1) and the Annual Report (Form 56-2) are to be made by the Managing Director.
- The Chairman of the Board or the Managing Director are the parties authorized to provide general news and information on corporate management to the media.
- Appointing contact persons with other related agencies:
 1. The corporate secretary is the party to coordinate with Thailand Securities Depository Company Limited
 2. The corporate secretary is the party to coordinate with the Securities and Exchange Commission.

Section 5: Responsibilities of the Board of Directors

The company gives importance to showing the duties and responsibilities of directors in order to maintain the interests of stakeholders and shareholders such as setting annual strategies for business practices and reviewing the aforementioned strategies semi-annually and monitoring performance audits. And to ensure transparent business practices for added company value and sustainability, the company will take the following actions:

- 5.1 The board of directors is made up of qualified experts with knowledge, ability and experience at the executive level from various corporations. The board of directors is able to use its experience, knowledge and ability to effectively develop and set the company's policies and governance to maximize benefits to the company and shareholders. The board of directors plays a significant role in setting corporate policies and overall business in addition to supervising, auditing and monitoring management performance and evaluating the company's performance according to plans. Each director is allowed to hold the office of director for no more than three listed companies.

- 5.2 The company has set policy for the Chairman of the Board and the Managing Director are held by different persons in order to prevent any one person from holding absolute power in any specific matter. The board of directors will set the scope of the power and responsibilities in addition to selecting the persons to hold the aforementioned offices.
- 5.3 The number of companies in which each director holds office must be compliant with good corporate governance and each director must be a director in no more than three listed companies.
- 5.4 The Managing Director and high-ranking executives can hold the office of director in no more than three companies, and must be approved by the board of directors in advance.
- 5.5 Each independent director may be an independent director for no more than nine consecutive years.
- 5.6 The board of directors will appoint a new director to serve for the remaining term of office for the previous director with approval from the board of directors.
- 5.7 The board of directors discloses information on office holding in other companies to the shareholder's awareness in the Annual Disclosure Form (Form 56-1) and the Annual Report (Form 56-2).
- 5.8 The company has policy for non-executive directors to hold meetings for the purpose of discussing various problems concerning management issues of interest without the presence of management at least once per year. In 2018, the aforementioned meeting was held once on 22 March, 2018.
- 5.9 The company's board of directors has participated with the management in setting the company's vision, mission, strategies, goals, business plans and budgets. Thus, the company has scheduled annual reviews of the company's vision, mission, strategies, goals, business plans and budgets.

5.10. The Roles, Duties and Responsibilities of Directors

The company stipulates that directors comply with the code of best practice in line with SET guidelines. Directors must understand and be aware of their roles, duties, and responsibilities, performing those duties in compliance with the law, company objectives and regulations as well as shareholders' resolutions with integrity, honesty and maximum consideration of the interests of the company and its shareholders. Director's roles, duties and responsibilities are as follows:

1. The board of directors must arrange a general shareholder's meeting within four months from the end of the company's accounting cycle.
2. The board of directors must arrange a meeting of the company's board of directors at least every three months.
3. Arranges a credible accounting system, financial statement reports and financial audits for the company. The board of directors must arrange credible systems for accounting, financial reports and auditing, including efficient and effective systems for internal control, internal auditing and risk management.
4. The board of directors must arrange the company's balance sheets and profit-loss statements at the end of the company's accounting cycle, which must be audited by an auditor and presented to the meeting of shareholders for consideration and approval.
5. The board of directors must set the company's goals, guidelines, policies, business plans and budgets along with monitoring and supervision, so the administration and management of executives concurs with work planning policies and setting budgets with efficiency and effectiveness.

Furthermore, the scope of the board of directors' duties includes direction for the company to comply with laws on securities and securities exchanges, announcements of the Capital Market Supervisory Board, specifications of the Stock Exchange of Thailand such as engaging in connected transactions, acquisitions or sales of significant properties, or laws associated with the company's businesses.

6. The board of directors must consider reviews, audits and approvals of plans by the executives for business expansion, large investment projects, including participation in investments with other business operators proposed by the executives.
7. The board of directors must continually monitor performance for concurrence with plans and budgets.

8. The board of directors must consider designating executive structures with authority to appoint the Executive Board of Directors, Managing Directors and other sub-committees as deemed fitting, such as the Audit Committee, the Recruitment Committee, the Remuneration Committee, etc., including the setting of the scopes of authority and duties of the Executive Board of Directors, Managing Directors and various appointed sub-committees.
9. The board of directors may authorize a director, several directors, or any other persons to perform any actions on behalf of the board of directors under the control of the board of directors, or the board of directors may authorize the aforementioned persons to have authority as deemed necessary by the board of directors within the period of time the board of directors deems fitting. The board of directors may cancel, withdraw, change or revise authorizations as deemed necessary. The power to authorized must not be in a manner that would enable the aforementioned individual to consider or approve transactions or persons with potential conflicts of interest, stakeholders or any other types of conflicts of interest occurring with the company or its subsidiaries (if any), unless the approval involves normal business transactions in line with general trade conditions or compliance with policy and criteria already considered and approved by the board of directors under the criteria, terms and methods set forth regarding related transactions and acquisitions or discharges of listed company main assets pursuant to SEC and/or SET notifications and/or any other notifications by related agencies.
10. The board has prepared corporate governance policy in writing with performance evaluation and policy review at least once a year, promoting the preparation of written code of conduct so all directors, executives and employees understand the ethical code by which the company conducts its business, monitors compliance with the aforementioned ethical codes, and sets up risk management policy with evaluation of risk management effectiveness at least once a year.

5.11 Development of Directors and Executives

Orientation for New Directors

The company's board of directors has scheduled orientation for every new director in order to build knowledge and understanding about the business, including the performance of various company tasks. In order to prepare directors for the performance of their respective duties, the company has policy for promoting the building of new knowledge for every director in learning about good governance, industrial conditions, technology businesses and new innovations in order to enable directors to efficiently take over their respective duties as soon as possible. The Corporate Secretary will coordinate various issues as follows:

1. Things to Know: Business infrastructure, director infrastructure, scope of duty, laws directors need to know.
2. General Business Knowledge: Guidelines for practice in line with various policies and visiting the production process.
3. Make arrangements for collaborative meetings with the entire board of directors, so in-depth questions can be asked about the business operations.

In 2018, the company provided orientation for four new directors, namely, Mr. Viraphonh Viravong, The secretary prepared various information that the aforementioned directors needed to be aware of and to follow various regulations and rules in addition to asset purchase-sales and business ethics.

Learning Development

The company's board of directors has policy for supporting and facilitating training to impart knowledge about the company's governance system, which included directors, auditing directors and recruitment directors in the setting of remuneration and corporate governance, and directors for risk management and the corporate secretary in order to improve practice on a continual basis as arranged by the Stock Exchange of Thailand, the Office of the Securities and Exchange Commission and courses sponsored by the Thai Institute of Directors Association (IOD)

It also encourages the Board to have knowledge of the administration from Institutes, Directors in the year 2018 which was attended workshops and seminars are as follows.

Name - Surname	Course	Institute
1. Mr. Poonphiphat Tantanasin	- Advanced Audit Committee Program - Corporate Anti-Corruption (HM 008), Whistle Blowing Guidelines	IOD Invitation of lecturers for internal training
2. Mr. Ruangchai Kritsnakriengkrai	- Corporate Anti-Corruption (HM 008), Whistle Blowing Guidelines - Solar PV Rooftop System - Finance for Non-finance Executives	Invitation of lecturers for internal training IEEE & PES PSR Management Training

In addition, the company has made arrangements for documents and information for the benefit of new directors in performing their respective duties as well as a manual on business characteristics and guidelines for conducting the company's business operations for new directors. The aforementioned was given to the Recruitment, Remuneration and Corporate Governance Committee with follow-up on succession plans for managing directors, deputy managing directors and executives. Hence, the executives who have been assigned the role of succession will be developed according to Individual Development Plans in order to prepare them for future succession.

5.12 Making Succession Plans

In order to assure that the company has knowledgeable directors with sufficient ability to perform their respective duties, the company's board of directors has made capacity building plans for high ranking executives by appointing the Remuneration and Good Governance Committee with the task of making plans for succession in the positions of managing director, deputy managing director and department manager based on consideration of knowledge, ability and experience required for each position for the selection of executives possessing set qualifications with ability to succeed to each position. Furthermore, the Human Resources Management Department has been assigned the task of monitoring training and the development of knowledge and ability for persons succeeding to the positions of managing director, deputy managing director and department manager.

5.13 Report of Interest of Directors and shareholding report

Our company assigns the committees and Board of Directors to report their own interests and those of related persons when they commence to hold the position or when there is any changing of information. In addition, they have to revise all information annually according to rules and methods of report on interests of company's committees and executives defined by Board of Directors. In 2018, the company stipulated that directors, executive directors and executives send reports on stake holdings on 13 December 2018.

Corporate Social and Environmental Responsibilities

QTC Energy public company limited is committed to conduct its business under the corporate governance. Based on principles of good governance coupled with attention to environmental care. There is the sense of social responsibility truly. In consideration of those who are consistently involved both inside and outside of the Organization, from employees, customers, shareholders, communities and the broader society to contribute to the development of sustainable business to provide a corporate joint venture successful. There are standard actions seriously and ensure that the actions are based on the defined vision and mission. Build confidence to stakeholders with a real organization, as well as to demonstrate social responsibility in various aspects of the policy have been set up a sustainable development policy and the appointment of the Board of Directors. And the Board of supervision work to make sure for the details listed in the sustainable development report.



Internal Control and Risk Management

In Board of Directors Meeting No. 1/2019 on 20 February 2019 where all three audit directors were in attendance, the board of directors assessed the adequacy of the company's internal control system risks by submitting inquiries to the Management Department and was able to draw conclusions based on the assessment of the company's internal control system in terms of the following aspects:

1. Control Environmental
2. Risk Assessment
3. Control Activities
4. Information and Communication Measures
5. Monitoring

The board of directors has rendered the opinion that the company already has adequate and appropriate internal control.

Internal Control-Related Performance

The company has a Board of Audit to perform the duty of checking to ensure that the company has proper and effective internal control systems and internal audits. The Board of Audit has also checked the company's performance to ensure compliance with the laws governing securities and stock exchanges, the specifications set forth by the Stock Exchange of Thailand and laws related to the company's businesses. The Board of Audit will hold meetings at least once every quarter in order to consider and take steps toward ensuring the compilation of accurate financial reports with complete and sufficient disclosure, including the consideration of related transactions or transactions with potential conflicts of interest to ensure compliance with the law and the specifications set forth by the Securities and Exchange Commission and the Stock Exchange of Thailand. Auditors are present at the meetings in order to observe based on the company's audits.

The Company don't have internal audit of the company itself, the company has hired BK IA & IC Co., Ltd. as auditors of the company for the year 2018, the company BK IA & IC Co., Ltd. has assigned Miss Boonnee Khusonsopit is the primary responsible to act in the company's internal auditors. The Audit Committee has considered the property of the company, BK IA & IC Co., Ltd. and Boonnee Khusonsopit charity overthrew governance, then that is sufficient. with such duties as an independent. And experienced in performing the audit in a business or industry, with the same company for 22 years. So subject to review and approve the appointment, transfer and dismissal of the incumbent head of the internal audit department of the Company to be approved by audit Committee.

Related Transactions

1 Relationship Characteristics

QTC Energy Public Company Limited ("Company") has transactions with persons with potential conflicts of interest, composed of shareholders and/or company executives. Related company means a company that holds persons who might have conflicts of interest with the company and relationships between the executives and shareholders of the aforementioned company. The summary of relationship characteristics is as follows:

Persons with Potential Conflicts of Interest	Characteristics of Relationship
QTC Service Chiang Mai Co., Ltd.	Mrs. Sasipim Wongdam is a director with signatory authority and a shareholder of QTC Service Chiang Mai holding 99.94 percent of shares who is related as the younger sister of Mr. Poonphiphat Tantanasin and holding the positions as Chief of the Executive Officer of the company. In addition, the ex-wife and child of Mr. Poonphiphat Tantanasin holds a total of 7.01 percent of the company's shares.
Mr. Poonphiphat Tantanasin	Holds the position of Chief of the Executive Officer. In addition, his ex-wife and child hold a total of 7.01 percent of the company's shares.
QTC PANCO CO., LTD., Electrical Transformer Manufacturing and Distribution Business.	A subsidiary which the company holds 85 percent of issued and paid up shares of QTC Panco Co., Ltd. In addition, the subsidiary also has similar director, namely, Mr. Poonphiphat Tantanasin who holds positions as director of the company.
PPWE Co., Ltd., Investment in Energy Business.	A joint company which the company holds 49.98 percent of issued and paid up shares of PPWE Co., Ltd. In addition, the joint company also has similar director, namely, Mr. Poonphiphat Tantanasin who holds position as director of the company.
QTC Global Power Co., Ltd., Investment in Energy Business.	A subsidiary which the company holds 99.99 percent of issued and paid up shares of QTC Global Power Co., Ltd. In addition, the subsidiary also has similar director, namely, Mr. Poonphiphat Tantanasin who holds positions as director of the company.
Q Solar 1 Co., Ltd., Investment in Solar Energy Business.	An indirect subsidiary which QTC Global Power Co., Ltd. holds 100.00 percent of issued and paid up shares of Q Solar 1 Co., Ltd. In addition, the indirect subsidiary also has similar director, namely, Mr. Poonphiphat Tantanasin who holds positions as director of the company.
Green Earth Power (Thailand) Co., Ltd., Renewable Energy Business (Ended on March 31, 2018)	An indirect joint company which QTC Global Power Co., Ltd. holds 15 percent of issued and paid up shares of Green Earth Power (Thailand) Co., Ltd. In addition, the indirect joint company also has similar director, namely, Mr. Poonphiphat Tantanasin who holds positions as director of the company.

2 Description of Related Transactions

In 2016 and 2015, the company conducted transactions with persons with potential conflict of interests according to the details shown in the list as follows:

(1) Sales of Goods and Services

Person with Potential Conflict of Interests	Transaction Type	Value of Related Transaction (million baht)		Necessity and Reasonability of Transaction
		2018	2017	
QTC Service Chiang Mai Co., Ltd. ("QTC Chiang Mai"), Electrical System Service Business.	Sales of goods and services	3.88	6.68	The company sells electrical transformers and raw materials that are components to electrical transformers, namely, transformer oil, low-power terminal tugs, gaskets, insulators, etc., as well as providing electrical transformer services to QTC Service Chiang Mai, which is a retail representative of the company. The sales prices of products to QTC Service Chiang Mai Co., Ltd. were discount prices equal to the rates offered to other retail representatives of the company and had the same trade conditions as other retail representatives of the company. The Audit Committee had evaluated the transaction and deemed the aforementioned goods sales transaction to be reasonable according to ordinary course of business of the company.
	Account receivables	0.70	1.84	

(2) Selling and administrative expenses transactions

Person with Potential Conflict of Interests	Transaction Type	Value of Related Transaction (million baht)		Necessity and Reasonability of Transaction
		2018	2017	
QTC Service Chiang Mai ("QTC Chiang Mai"), Electrical System Service Business.	Purchase of goods and services	0.01	0.15	<p>The transaction incurred as an expenditure from the company employing QTC Service Chiang Mai to provide services for the company's clients located in areas/provinces near the office of QTC Service Chiang Mai Co., Ltd. such as fees for electrical transformer transportation, inspection, repairs, cranes, etc. as the trucks and/or service staffs of the company were fully occupied with other works and unable to provide service to the aforementioned clients. In addition, QTC Service Chiang Mai Co., Ltd. is able to provide fast and reliable services to clients. The service fees for QTC Service Chiang Mai collected from the company is comparable to expenses that actually incurred from services provided by the company and/or comparable to service fees for employing external parties.</p> <p>The Audit Committee evaluated the aforementioned transaction and holds the opinion that the aforementioned transaction incurred due to necessity and the service fee rates was reasonable and appropriate.</p>

Person with Potential Conflict of Interests	Transaction Type	Value of Related Transaction (million baht)		Necessity and Reasonability of Transaction
		2018	2017	
PPWE Co., Ltd., Energy Investment Business.	Interest received	0.91	1.33	The company provided short-term loan to PPWE Co., Ltd. to be used as working capital and conducting feasibility studies in investment projects with appropriate interest rates. The Audit Committee has evaluated the transaction and holds the opinion that the aforementioned transaction occurred due to necessity and was reasonable.
	Other receivables	0.16	1.33	
	Short-term loan	14.00	17.00	
QTC Global Power Co., Ltd., Investment in Renewable Energy Business	Interest received	7.21	6.30	The company provided short-term loan to QTC Global Power Co., Ltd. to be used as working capital and conducting feasibility studies in investment projects with appropriate interest rates.
	Other receivables	1.04	6.82	
	Administrative expenses	0.52	0.52	The Audit Committee has evaluated the transaction and holds the opinion that the aforementioned transaction occurred due to necessity and was reasonable.
	Short-term loan	0	654.10	

Measures or Procedures for Approving Related Transactions

The company has stipulated measures for conducting related transactions between the company and persons with potential conflict of interests by assigning the Audit Committee to give opinions on the necessity of the transactions, reasonability and propriety of the transaction amounts with considerations based on various conditions according to normal course of business at fair market values comparable to prices proposed by external parties. In cases where the Audit Committee lacks the expertise to evaluate a related transaction that might occur, the company will assign a persons with specialized knowledge and skills such as an auditor, asset valuator, legal office, etc., who are independent from the company and person with potential conflict of interest in the aforementioned related transaction, to provide information to accompany the decision of the Audit Committee. Accordingly, the Audit Committee will propose the results to the meeting of the Board of Directors or shareholders, depending on the case.

Furthermore, the company has stipulated measures to prohibit executives or stakeholders from participating in approving transactions in which they have direct or indirect interest. In addition, the Board of Directors is required to oversee the company to ensure compliance with the law governing securities and the Stock Exchange and regulations, notifications, orders or requirements of the Capital Market Supervisory Board and the Stock Exchange of Thailand as well as complying with regulations on disclosure of information on related transactions and obtainment or sales of important asset of companies or subsidiaries in addition to complying with the accounting standards set by the Federation of Accounting Professions and Licensed Auditors of Thailand. Additionally, the company discloses related transactions in annotations accompanying financial statements audited or examined by the company's auditor.

Possibilities of Related Transactions in the Future

The company might continuously conduct related transactions in the future in line with normal course of business operations and will clearly specify policies for conducting related transactions. Prices and trade conditions will comply with the normal business operations as specified for unrelated persons and/or companies such as sales of goods or provision or obtainment of services. Related transactions

shall occur due to necessity for the company's business operations and for the benefit of the company. Accordingly, the Audit Committee will make considerations and examine practices to ensure compliance with criteria and provide opinions on suitability of transactions that occur on a quarterly basis.

As for sales of goods to QTC Service Chiang Mai Co., Ltd. and QTC Panco Co., Ltd. (Laos), which are entities with potential conflicts of interest in the future, the company had prescribed policies for specifying prices and discounts for sales of electrical transformers and raw materials or equipment that are components to electrical transformers for each type of client, including sales representative, which has been effective as of May 15, 2011. The purpose of this is to increase clarity and allow price and discount comparisons in the sales of goods to QTC Service Chiang Mai Co., Ltd., which has to be according to prices and discounts provided to other sales representatives, for the considerations and opinions of the Audit Committee on fairness and reasonability of goods sold to both companies to be provided systematically, especially in instances where the company does not sell products to other sales representatives.

For potential related transactions not occurring due to normal business operations in the future, the company has assigned the Audit Committee to review practices in line with criteria and provide explanation about the reason for conducting the aforementioned related transactions before the company conducts the aforementioned transactions by complying with the measures and procedures for approving related transactions as mentioned above. In any case, for related transactions that might cause conflicts of interest in the future, the Board of Directors is required to ensure compliance with laws governing securities and the Stock Exchange and rules, notifications, orders or specifications of the Capital Market Supervisory Board and the Stock Exchange of Thailand along with following regulations on disclosure of information about related transactions and obtainment or sales of assets of companies or subsidiaries along with standards set by the Federation of Accounting Professions and Licensed Auditors of Thailand.



Board of Audit Report

The Audit Committee of QTC Energy PCL is composed of Mr. Natthaphon Lilawatthananon as the Audit Committee Chairman and Mr. Phonrat Piathanom and Mrs. Wasara Chotithammarat as the audit directors. The Audit Committee's important scope and responsibilities pursuant to its charter are to oversee and ensure that the company's financial reports are in accordance with generally accepted accounting standards and principles, reviewing the company's performance to be in accordance with good corporate governance principles with effective system of internal control and pursuance to related laws and regulations, along with looking after cases of conflicts of interest between the company and related parties. Hence, the company's Audit Committee has organized five meetings in 2018 with the essential content as follows:

1. The Audit Committee has reviewed the quarterly finances and financial statement for 2018 with the management and auditor to ensure that the company's financial report was made correctly as should be according to generally accepted accounting standards and adequate and complete disclosure of information credibly in the footnotes of financial statements along with providing observations and acknowledgement of beneficial resolutions to the company's problems.
2. Discussion of the disclosure of information of related transactions and transactions related to the company and people who might be in conflict of interest. The Audit Committee deems that the disclosure of information of related transaction and transactions related to the company is correct, complete and sufficient and in accordance with business conditions and criteria set by the Stock Exchange of Thailand.
3. Govern and ensure that internal audits are carried out independently by employing BK IA&IC CO., LTD., which is a company that provides internal and external audit services, as the company's internal auditor with the Audit Committee as the considerer of the annual internal audit plan, reporter of internal audit results, follower of internal audit results for the management, along with providing advice to the internal auditor in order to ensure confidence that the annual internal audit plan is carried out effectively and efficiently. The internal audit results for 2018 found no indicators of corruption or flaws in internal control in essential content.
4. Evaluation of the internal control system in accordance with set guidelines by the Securities and Exchange Commission, which governs corporate internal control, risk management, information technology system control and data communication along with monitor systems. The Audit Committee deems the company's internal control to be adequate and effective.
5. Consideration for the appointment of and proposal for remuneration payment to the auditor for 2019. A proposal was made for the company's board of directors to appoint Mr. Narin Churamongkol, Certified Public Accountant No. 8593 and/or Mr. Teerasak Chuasrisakul, Certified Public Account No. 6624 and/or Miss Kanyanat Sriratchatchaval, Certified Public Accountant No. 6549, of Grant Thornton Limited to be the auditors of the Company with their remuneration 1,545,000 baht for later proposal to the General Shareholders' Meeting.

Hence, the Audit Committee has performed its duties thoroughly and independently, rendered opinions directly without limitations to information access, and has given importance to good corporate governance in accordance with principles set by the Stock Exchange of Thailand with transparency and good ethics in order to establish confidence in shareholders, investors, customers and all related parties.

On behalf of the Board of Audit,



(Mr. Natthaphon Lilawatthananon)

Chairman, Board of Audit

14 February 2019

Board of Nomination, Remuneration and Corporate Governance Committee Report

The Nomination, Remuneration and Corporate Government Committee of QTC Energy PCL is composed of two independent directors and one executive director. Mr. Phonrat Piathanom, Independent Director, is the Chairman of the Nomination Committee while Dr. Kamol Takabut, Independent Director, and Mr. Poonphiphat Tantanasin, Executive Director, have scopes of duties and responsibilities according to the Nomination, Remuneration and Corporate Government Committee Charter.

In 2018, the Nomination, Remuneration and Corporate Government Committee met two times. Every director attended meetings to follow-up and give consideration to important topics assigned by the Board of Directors, which can be summarized as follows:

1. The Committee considered performance assessments of the Company's directors, minor committee directors and high-ranking executives.
2. The Committee considered selections of persons to fill positions of directors who resigned and proposed for the Board of Directors to consider appointments.
3. The Committee considers and reviews corporate governance policies.
4. The Committee considers and reviews business ethics to be consistent with current situations.
5. The Committee considers and reviews Sustainability development.
6. The Committee considers remuneration of the Company's directors, executive directors and sub-committee members before presentation to the Board of Directors and shareholders for consideration of approval by considering suitability for assigned duties and responsibilities, the Company's performance and overall economic conditions.
7. The Committee acknowledges progress in succession plan preparations for high-ranking executives and career path preparations.
8. The Committee selects and nominates individuals to director positions by considering names nominated by shareholders, qualifications and diversity of knowledge, capabilities, experience and gender, etc., before presenting names to the Company's Board of Directors and shareholders. The Committee supports minor shareholders to propose agendas and nominate directors to fill directors who completed terms in advance on 3 September 2018 – 3 December 2018 through the Company's website.

On behalf of the Nomination, Remuneration and Corporate Governance Committee,



(Mr. Phonrat Piathanom)

Chairman, Nomination, Remuneration and Corporate Government Committee

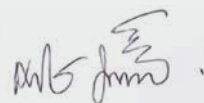
Board of Directors' Reports & Responsibility for Financial Reports

Dear Shareholders,

The board of directors is responsible for the financial statements of QTC Energy PCL, including the financial information appearing in the company's annual report and financial statements. The board of directors holds the view that the company's financial statements for the year ending 31 December 2018 have been compiled in compliance with generally accepted accounting principles by using proper accounting policy in line with the principles of caution and consistent practice. Moreover, the company has carefully exercised discretion with reasonable estimations in the compilation. Moreover, sufficient information has been disclosed in the remarks accompanying the company's financial statements. Hence, the aforementioned financial statements have passed the audit and unconditional opinions have been rendered by the independent licensed auditor.

The board of directors supports the company in good corporate governance with structural development for the board of directors in order to promote continued good corporate governance and efficient work performance with transparency and reliability. The board of directors has appointed a board of audit composed of three independent directors as the parties responsible for checking the financial reporting system, the internal control systems and internal audits. The board of audit has rendered opinions concerning the aforementioned matters as appearing in the board of audit's report as already shown in the annual report.

The board of directors has rendered the opinion that the company's internal control systems are sufficient and appropriate. Moreover, the aforementioned have the ability to build reasonable confidence in the reliability of the company's financial statements for the year ending 31 December 2018.



(Mr. Krirk-Kraj Jirapaet)

Chairman of the Board

Report of Independent Auditor

To the Shareholders of QTC Energy Public Company Limited

Opinion

I have audited the consolidated financial statements of QTC Energy Public Company Limited and its subsidiaries (the “Group”), which comprise the consolidated statement of financial position as at 31 December 2018, and the consolidated statements of profit or loss and other comprehensive income, statement of changes in shareholders’ equity and statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies and I have also audited the separate financial statements of QTC Energy Public Company Limited (the “Company”), which comprise the separate statement of financial position as at 31 December 2018, the separate statements of profit or loss and other comprehensive income, and statement of changes in shareholders’ equity and statement of cash flows for the year then ended, and notes to the separate financial statements, including a summary of significant accounting policies. In my opinion, the accompanying consolidated and separate financial statements present fairly, in all material respects, the consolidated financial position of the Group as at 31 December 2018, and the consolidated financial performance and cash flows for the year then ended, and the separate financial position as at 31 December 2018, and the separate financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the Auditor’s Responsibilities for the Audit of the Consolidated and Separate Financial Statements section of my report. I am independent of the Group and the Company in accordance with the Federation of Accounting Professions’ Code of Ethics for Professional Accountants 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.

Key audit matter	How my audit addressed the area of focus
<p><i>Deferred tax assets</i></p> <p>As at 31 December 2018, the Group and the Company have deferred tax assets of Baht 15.95 million and Baht 13.27 million, respectively. The Group and the Company have not recognized a portion of deferred tax assets of Baht 135.07 million and Baht 72.30 million, respectively. The Group and the Company will recognise deferred tax assets on tax losses carried forwards only when it is that it can generate taxable profits to utilize tax losses carried forward.</p> <p>In calculating deferred tax assets recognised from tax losses carried forward, management is required to exercise judgment in relation to the future forecast on taxable income to be reliable which factors may be changed according to the economic and market conditions in the future.</p> <p>I have focused on this matter because the audit of such balances requires significant judgment since the outcome of management's forecasts is subject to uncertainties of future economic and market conditions.</p> <p>Refer to the note 20 to financial statements and significant accounting policies.</p>	<p>I determined the sufficiency and appropriateness of audit evidence by assessing the methodology that management used to estimate revenue, expenses and operating results in the future.</p> <p>I discussed with management to understand the business plans and the assumption used and evaluated the reasonableness of underlying assumptions that management applied in forecasting the business growth rate in normal situation including trend analysis in the marketing and same industry.</p> <p>I verified the mathematical accuracy of the business forecasts and tested the appropriateness of deferred tax calculation by comparing future tax benefit that the Group and the Company can utilise from the forecasted profits.</p> <p>I also considered the adequacy and appropriateness of disclosures in the notes to financial statements.</p>

Key audit matter	How my audit addressed the area of focus
<p><i>Impairment of investments in subsidiary and associated companies</i></p> <p>As at 31 December 2018, the Company has investments in subsidiary and associated companies - at cost of Baht 718.66 million and Baht 0.50 million, respectively, and allowance for impairment of investments in subsidiary and associated companies of Baht 150.36 million and Baht 0.50 million, respectively.</p> <p>The impairment test of investments in subsidiary and associated companies require significant judgment and assumption of management with complex consideration, specifically the assumption about the cash flows projection of business and the consideration of discount rate for determining of projected cash flows which may affect by changes in the economic condition, market situation and specific risk of assets. Refer to the notes 11 and 12 to financial statements and significant accounting policies.</p> <p>Refer to the notes 2 to financial statements and significant accounting policies.</p>	<p>I assessed the reasonableness of assumptions and methodology that management applied to estimate expected future cash flows by comparing with current and historical operations.</p> <p>I discussed with management the basis of assumptions used and future business plan, including reviewing underlying supporting documentation.</p> <p>I evaluated the reasonableness of the discount rate applied to calculate future cash flows and tested calculation for recoverable amount from the investments.</p> <p>I verified the mathematical accuracy of the model and inspecting inputs with supporting documents.</p>

Key audit matter	How my audit addressed the area of focus
<p><i>Allowance for decline in value of inventories</i></p> <p>As at 31 December 2018, the Company has inventories amount of Baht 175.25 million, which comprises of raw material, work in process, and finished goods. The Company's finished goods are made by customers order and standard type for sale to general customers.</p> <p>Inventories are presented at the lower of cost or net realizable value. The estimation of allowance for decline in value of inventories involves the management judgment for considering the inventory turnover and deterioration of each category and the change in selling price which can be subjected to market situation.</p> <p>Refer to the notes 9 to financial statements and significant accounting policies.</p>	<p>I made an inquiry the management to obtain understanding the measurement of the net realizable value of inventories. I evaluated whether the measurement is appropriate and comply with the Company's accounting policy.</p> <p>I tested aging of inventories and evaluate the reasonableness of assumption used to set allowance for decline in value of inventories by management. I considered the movement of inventory and recalculated the amount of allowance for decline in value of inventories by the Company's accounting policy.</p> <p>I examined the calculation of estimated net realizable value of inventories by comparing, on the test basis, the carrying cost of inventories against expected net realizable value. The net realizable is calculated from the selling price subsequent date, or the selling price in the customer's purchase order less the estimated costs necessary to make the sale.</p> <p>I also considered the adequacy and appropriateness of disclosures in the notes to financial statements.</p>

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.

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

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 Thai Financial Reporting Standards, 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 ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

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

Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements

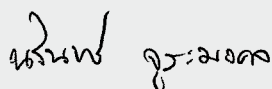
My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance,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

As part of an audit in accordance with Thai Standards on Auditing, 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 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 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 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 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, 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.



Mr. Narin Churamongkol

Certified Public Accountant

Registration No. 8593

Grant Thornton Limited

Bangkok

20 February 2019

Financial Status and Performance

1 Summary of the Audit Report

(a) The financial statement of 2016 was examined by Mr. Narin Joramongkon, Certified Public Accountant No. 8593 from Grant Thornton Co., Ltd.

The Certified Public Accountant audited the Company's financial statement and rendered the opinion that the statement of financial status as of 31 December 2019 and the Company's performance for the year ending on the same date are accurate in terms of relevant contents in compliance with Thailand's financial reporting standards.

(b) The financial statement of 2017 was examined by Mr. Narin Joramongkon, Certified Public Accountant No. 8593 from Grant Thornton Co., Ltd.

The Certified Public Accountant audited the Company's financial statement and had the opinion that the statement of financial status as of 31 December 2017 and the Company's performance for the year ending on the same date are accurate in significant contents according to Thailand's financial reporting standards.

(c) The financial statement of 2018 was examined by Mr. Narin Joramongkon, Certified Public Accountant No. 8593 from Grant Thornton Co., Ltd.

The Certified Public Accountant audited the Company's financial statement and had the opinion that the statement of financial status as of 31 December 2018 and the Company's performance for the year ending on the same date are accurate in terms of relevant contents in compliance with Thailand's financial reporting standards.

2 Table Summarizing Financial Status and Performance

Statement of Financial Status

	2016 (Consolidated)		2017 (Consolidated)		2018 (Consolidated)	
	Million Baht	%	Million Baht	%	Million Baht	%
Assets						
<i>Current Assets</i>						
Cash and Cash Equivalents	98.65	8.08	90.99	4.47	118.79	6.19
Temporary Investments	221.87	18.17	378.85	18.60	466.34	24.30
Trade Accounts Receivable						
- General Accounts Receivable – Net	234.55	19.21	280.97	13.79	255.76	13.33
- Affiliated Companies	0.68	0.06	1.84	0.09	0.70	0.04
Other Accounts Receivable						
- Ordinary Accounts Receivable	-	-	-	-	1.14	0.06
- Other Accounts Receivable – Related Companies	0.04	0.03	1.35	0.07	0.16	0.01
Inventory – Net	207.54	17.00	151.15	7.42	175.25	9.13
Value Added Tax Pending Collection	7.70	0.63	17.16	0.84	29.68	1.55
Expenses Paid in Advance	4.68	0.38	3.99	0.20	4.12	0.21
Other Current Assets	6.86	0.56	8.78	0.43	13.11	0.68
Total Current Assets	782.94	64.13	935.07	45.90	1,065.05	55.50

	2016 (Consolidated)		2017 (Consolidated)		2018 (Consolidated)	
	Million Baht	%	Million Baht	%	Million Baht	%
<u>Non-Current Assets</u>						
Bank Deposits with Limited Use	-	-	21.12	1.04	21.31	1.11
Loans Provided for Related Companies – Net	17.00	1.39	17.87	0.88	6.90	0.36
Investments in Joint Ventures – Net	-	-	210.04	10.31	-	-
Other Investments	0.05	0.00	0.05	0.00	-	-
Collectible Security Deposit for Investment Project Feasibility Study	81.11	6.64	-	-	-	-
Land, Building and Equipment – Net	307.20	25.16	688.96	33.82	689.30	35.92
Computer Programs	6.54	0.54	5.50	0.27	4.19	0.22
Power Grid Connection Service Fees – Net	-	-	4.58	0.23	4.25	0.22
Electricity Sales Contract – Net	-	-	117.36	5.76	108.91	5.68
Deferred Income Tax Assets	23.92	1.96	33.27	1.63	15.95	0.83
Non-Current Assets	2.04	0.17	3.43	0.17	3.12	0.16
Total Non-Current Assets	437.86	35.87	1,102.19	54.10	853.94	44.50
Total Assets	1,220.80	100.00	2,037.27	100.00	1,918.98	100
<u>Liabilities and Shareholder Equity</u>						
Current Liabilities						
Overdraft Accounts and Short-Term Loans from Financial Institutions	311.06	25.48	320.55	15.73	202.08	10.53
Trade Accounts Payable	108.38	8.88	42.83	2.10	98.22	5.12
Other Accounts Payable	6.32	0.51	11.58	0.57	11.05	0.58
Long-Term Loans Due for Payment in One Year	-	-	66.84	3.28	75.24	3.92
Accounts Payable in Lease/Purchase Contracts Due for Payment in One Year	2.71	0.22	2.71	0.13	2.20	0.11
Employee Benefit Obligation Liabilities	-	-	0.18	0.01	0.75	0.04
Unpaid Income Tax	-	-	-	-	-	-
Unpaid Expenses	15.34	1.26	23.37	1.15	23.00	1.20
Related Companies	0.05	0.00	-	-	-	-
Security Deposits for Goods Received	7.25	0.59	14.58	0.72	16.42	0.86
Unpaid Value Added Tax	-	-	-	-	-	-
Other Current Liabilities	5.22	0.43	10.59	0.52	11.40	0.59
Total Current Liabilities	456.28	37.38	493.24	24.21	440.36	22.95
Non-Current Liabilities						
Long-Term Loans – Net	-	-	89.40	4.39	24.30	1.27
Accounts Payable in Lease/Purchasing Contracts – Net	2.75	0.23	3.04	0.15	2.32	0.12
Employee Benefit Obligation Liabilities	4.11	0.34	9.49	0.47	10.36	0.54
Total Non-Current Liabilities	6.86	0.56	101.94	5.00	36.98	1.93
Total Liabilities	463.14	37.94	595.18	29.21	477.34	24.88

Statement of Financial Status (Continued)

	2016 (Consolidated)		2017 (Consolidated)		2018 (Consolidated)	
	Million Baht	%	Million Baht	%	Million Baht	%
Shareholder Equity						
Capital Stock						
Registered Shares	270.00	22.12	429.24	21.07	429.24	22.37
Issued and Paid Up Shares	270.00	22.12	341.09	16.74	341.09	17.77
Premium on Common Shares	304.94	24.98	1,178.83	57.86	1,178.87	61.44
Accumulated Profit						
Allocated – Legal Reserve	20.00	1.64	20.00	0.98	20.00	1.04
Unallocated	159.40	13.06	(99.27)	(4.87)	(98.93)	(5.16)
Other Shareholder Components	0.35	0.03	(1.20)	(0.06)	(1.51)	(0.08)
Total Shareholders' Equity of the Company	754.69	61.82	1,439.45	70.66	1,439.52	75.01
Uncontrolled Stakes in Subsidiaries	2.97	0.24	2.64	0.13	2.12	0.11
Total Shareholders' Equity	757.67	62.06	1,442.09	70.79	1,441.64	75.12
Total Liabilities and Shareholder Equity	1,220.80	100.00	2,037.27	100.00	1,918.98	100

Comprehensive Income Statement

	2016 (Consolidated)		2017 (Consolidated)		2018 (Consolidated)	
	Million Baht	%	Million Baht	%	Million Baht	%
<u>Income</u>						
Sales Income	518.34	96.07	882.11	96.43	937.29	95.81
Service Income	12.89	2.39	19.42	2.12	20.76	2.12
Other Income	8.32	1.54	13.28	1.45	20.29	2.07
Total Income	539.55	100.00	914.81	100.00	978.34	100
Costs and Expenses						
Sales Costs	(493.53)	(91.47)	(745.37)	(81.48)	(735.90)	(75.22)
Service Cost	(10.02)	(1.86)	(15.44)	(1.69)	(11.86)	(1.21)
Sales and Management Expenses	(127.44)	(23.71)	(392.40)	(42.89)	(193.89)	(19.82)
Total Expenses	(630.99)	(117.04)	(1,153.21)	(126.06)	(941.65)	(96.25)
Profit (Loss) Before Financial Cost and Income Tax Deduction						
Financial Cost	(91.95)	(17.04)	(238.40)	(26.06)	36.69	3.75
Juristic Person Income Tax	(7.76)	(1.44)	(14.73)	(1.61)	(15.17)	(1.55)
Profit (Loss) Shares of Joint Ventures by the Equity Method	19.11	3.54	5.88	(0.64)	(17.52)	(1.79)
Loss from Canceled Operations					(1.03)	(0.11)
					(3.09)	(0.32)
Net Profit (Loss) for the Year	(80.59)	(14.94)	(247.25)	(27.03)	(0.12)	(0.01)
Other Comprehensive Profit (Loss) for the Year						
Loss from Estimates by Actuarial Science	-	-	(3.39)	(0.37)	-	-
Exchange Rate Difference from Financial Statement Conversion	(0.00)	(0.00)	(1.83)	(0.20)	(0.36)	(0.04)
Other Comprehensive Profit (Loss) for the Year – Net from Income Tax	(0.00)	(0.00)	(5.21)	(0.57)	(0.36)	(0.04)
Total Comprehensive Profit (Loss) for the Year	(80.60)	(14.94)	(252.46)	(27.60)	(0.48)	(0.05)
Net Profit (Loss) Per Basic Share						
Net Profit (Baht Per Share)	(0.34)	-	(0.89)	-	0.001	
Par Value (Baht)	1.00		1.00		1.00	

Cash Flow Statement

(Unit Million Baht)	2016 (Consolidated)	2017 (Consolidated)	2018 (Consolidated)
<u>Cash Flow from Operations</u>			
Net Profit before Income Tax	(99.71)	(253.13)	17.40
Transactions Adjusting Net Profit as Income Tax from Operations			
Depreciation and Amortization	42.81	50.96	74.25
Allowance for Doubtful Accounts	7.96	4.26	7.28
Allowance (allowance reversal) for Outdated Goods	5.35	(5.00)	7.37
Profit (Loss) from Property Distribution	0.03	(2.77)	(0.55)
Loss (Profit) from Unrealized Exchange Rates	1.26	(3.78)	(0.85)
Profit from Adjusting Unrealized Investments	(1.87)	(0.04)	(2.86)
Profit from Temporary Sale of Investments	-	-	(0.76)
Share of Losses from Joint Ventures by the Equity Method	0.50	(2.72)	1.03
Allowance for Employee Benefit Obligations	1.25	1.03	1.08
Allowance for Depreciation of Loans Provided for Joint Ventures	-	-	7.10
Allowance for Asset Depreciation	-	-	2.91
Losses from Sale of Investments in Joint Ventures	-	-	19.69
Allowance for Value Depreciation	7.76	193.25	-
Interest Paid		14.73	15.17
Cash Received from Operations before Changes in Operating Assets and Liabilities	(34.66)	(3.21)	148.26
Decreases (Increases) in Operating Assets			
Trade Accounts Receivable – General Accounts Receivable	227.33	(25.68)	18.78
Trade Accounts Receivable – Related Companies	0.13	(1.15)	1.13
Other Accounts Receivable – General Accounts Receivable		-	(1.14)
Other Accounts Receivable - Subsidiaries	(0.40)	(0.94)	1.19
Inventory	(57.61)	61.39	(31.48)
Value Added Tax Pending Recall	(18.91)	(9.46)	(12.52)
Expenses Paid in Advance	2.27	0.69	(0.13)
Other Current Assets	(0.11)	2.32	(2.75)
Other Non-Current Assets	(2.04)	(1.18)	2.91
Increases (Decreases) in Operating Liabilities			
Trade Accounts Payable	(56.36)	(67.48)	55.40
Other Accounts Payable			
General Traders	1.06	5.29	(0.52)
Affiliated Companies	0.05	(0.03)	(0.01)
Unpaid Expenses	(9.61)	8.03	(0.37)
Security Deposit for Goods Received	3.49	7.33	1.84
Other Current Liabilities	(3.78)	1.70	0.80
Liabilities Paid Based on Employee Benefit Obligations	(1.60)	-	-

(Unit Million Baht)	2016 (Consolidated)	2017 (Consolidated)	2018 (Consolidated)
Cash from Operating Capacity	49.23	(22.37)	181.39
Tax Payments	(30.56)	(3.22)	(3.19)
Interest Payments	(7.14)	(14.11)	(14.82)
Income Tax Refund		-	1.31
Net Cash Obtained (Spent) from Operating Activities	11.53	(39.70)	164.69
<u>Cash Flow from Investment Activities</u>			
Decreases (Increases) to Bank Deposits with Limited Use	-	-	(83.86)
Decreases (Increases) to Temporary Investments	(200.00)	(146.65)	3.87
Increases in Short-Term Loans – Joint Ventures	(17.00)	(0.87)	-
Cash Spent to Purchase Investments in Indirect Subsidiaries	-	(528.33)	-
Increases in Investments in Joint Ventures	(0.50)	-	(6.00)
Increases in Investments in Indirect Joint Ventures	-	(207.32)	-
Collectible Security Deposit for Investment Project Feasibility Study			195.32
Cash Received from Sale of Indirect Joint Ventures	(81.11)	81.11	3.12
Cash Received from Asset Distribution	0.01	3.53	(69.62)
Payments to Purchase Other Permanent Assets	(40.87)	(56.61)	(0.53)
Computer Program Purchases	(3.26)	(0.55)	
Net Cash Earned (Spent) from Investment Activities	(342.74)	(855.69)	42.30
Increases (Decreases) in Overdraft Accounts and Short-Term Loans from Financial Institutes)	94.66	15.06	(118.47)
Long-term Loans from Banks			15.04
Repayment of Long-term Loans from Banks	(18.82)	(15.31)	(71.74)
Repayment of Liabilities Under Lease/Purchase Contracts	(4.52)	(4.70)	(3.69)
Cash Received from Shares Issued to Raise Capital	329.00	900.93	-
Subsidiaries' Payment for Shares Issued to Raise Capital Outside Control	0.00	-	-
Cash Received from Using Rights on Warrants	-	1.76	0.04
Cash Dividend Payout	(64.00)	(8.10)	-
Net Cash Earned (Spent) from Financing Activities	336.31	889.63	(178.82)
Difference from Converting Financial Statement from Subsidiaries in Foreign Currency	(0.00)	(1.90)	(0.37)
Increases (Decreases) in Cash and Cash Equivalents – Net	5.09	(7.66)	27.80
Cash and Cash Equivalents as of 1 January	93.56	98.65	90.99
Cash and Cash Equivalents as of 31 December	98.65	90.99	118.79

3 Table Summarizing Significant Financial Ratios

Description		2016 (Consolidated)	2017 (Consolidated)	2018 (Consolidated)
Liquidity Ratios				
Liquidity Ratio	(Times)	1.72	1.90	2.42
Quick Ratio	(Times)	1.22	1.53	1.91
Operating Cash Flow to Current Liabilities	(Times)	0.02	(0.08)	0.35
Receivable Turnover Ratio	(Times)	1.45	3.22	3.23
Average Collection Period	(Days)	252.32	113.47	113.02
Inventory Turnover	(Times)	2.62	4.08	4.35
Average Holding Period	(Days)	139.45	89.55	83.82
Payable Turnover	(Times)	3.14	7.74	8.12
Payment Period	(Days)	116.22	47.19	44.97
Cash Cycle	(Days)	275.54	250.21	241.80
Profitability Ratios				
Gross Profit Margin (%)	(%)	5.21	15.61	21.95
Operating Profit Margin	(%)	(18.78)	(27.43)	3.66
Other Profit Margin	(%)	0.10	(1.45)	0.52
Cash to Profitability Margin	(%)	(11.55)	16.06	469.73
Net Profit Margin(%)	(%)	(14.94)	(27.03)	(0.01)
Return on Equity	(%)	(12.11)	(22.48)	(0.01)
Operating Efficiency Ratios				
Returns from Assets	(%)	(7.04)	(15.18)	(0.01)
Fixed Asset Turnover	(%)	(12.27)	(38.94)	10.68
Asset Turnover	(Times)	0.47	0.56	0.49
Financial Policy Analysis Ratios				
Debt to Equity Ratio	(Times)	0.61	0.41	0.33
Interest Coverage Ratio	(Times)	(6.33)	(16.18)	7.24
Obligation Coverage Ratio	(Times)	0.07	(0.45)	1.11
Dividend Payout Ratio	(%)	(79.41)	(3.28)	-

Analysis and Explanations of the Management

1 Past Performance Overview

In the energy business, the Company expanded investments to the energy business via a subsidiary, QTC Global Power Co., Ltd. In 2017, QTC Global Power Co., Ltd. purchased shares from Green Earth Power (Thailand) Co., Ltd. at an investment ratio of 15 percent to invest in a solar power plant in Myanmar in the process of development. Furthermore, the Company purchased all shares in L Solar 1 Co., Ltd. to invest in the 8-Megawatt Solar Power Plant Project in Kabinburi, Prachinburi, which commenced operations to generate and distribute electricity at full capacity.

The transformer manufacturing and distribution business is a business related to electricity generation and consumption needs because transformers are used to adjust voltages from production sites lower to the level of power users' needs such as industrial factories, residential homes and high-rise buildings, etc. Therefore, the business's trends are in the same direction as electricity needs, which are continually rising, causing EGAT to have duties and responsibilities related to all of Thailand's electricity generation and transmission systems including the Metropolitan Electricity Authority (MEA) and the Provincial Electricity

Authority (PEA), which are responsible for distributing electricity to power users, modifying and expanding the power distribution system to be consistent with Thailand's electricity generation development plan, causing transformer needs to increase.

On 31 January 2018, QTC Global Power Co., Ltd. sold investments in Green Power Energy (Thailand) Co., Ltd. and received 195.32 million baht from distribution of investments in indirect joint ventures. The relationship was considered to be over as of 31 March 2018.

In 2018 and 2017, the Company's transformer sales were 786.70 million baht and 839.38 million baht, respectively. Transformer sale trends rise in 2019 from more investment in renewable energy projects, particularly solar energy. In 2018, the Company's transformer sales dropped to 786.70 million baht, a reduction of 6.28 percent from 2017 because the government sector and government enterprises delayed investments in projects. However, in the meantime, transformer sales in the private sector and the export sector grew from 2017 by 9.19 percent because economic growth in other regions of sale representatives' countries increased foreign sales and exports. Throughout the past, the price of vital raw materials such as silicon, copper foil and copper wire used in insulation for low-voltage coils fluctuated significantly. Nevertheless, with the executive team's experience of over 20 years in the transformer industry and the Company's selection of modern and efficient machinery and manufacturing technology, the Company's performance have always been profitable. Moreover, the Company recognizes the importance of implementing enterprise resources planning (ERP) in management of all sectors of the Company whether if it was production, procurement, sales, accounting and finance including inventory management as an interrelated system capable of fast data link in real-time, resulting in systematic integration and more efficient outcomes.

Because the Company places importance on the quality of the transformers it manufactures, the Company's transformer products are accredited for meeting the standards of various institutes such as TIS 384-2543 from the Thai Industrial Standards Institute, Ministry of Industry, ISO 9001:2000 standards for distribution transformer design, manufacturing and maintenance. In addition, the Company received a certificate for test laboratory capabilities meeting TIS 17025-2548 standards (ISO/IEC 17025:2005). Furthermore, the Company is able to manufacture transformers to meet international quality standards, a proof of international-level quality and customer acceptance.

(a) Income

The Company's total income was 1,234.79 million baht in 2016, 539.55 million baht in 2016, 914.82 million baht in 2017 and 978.34 million baht in 2018, respectively. Income in 2018 was divided into income from transformer sales at 786.70 million baht, income from electricity sales at 142.48 million baht, service income at 20.76 million baht and other income at 28.40 million baht. Information on transformer sales income can be summarized as follows:

Transformer Sales income

Customer Type	2016			2017			2018		
	Million Baht	Ratio (%)	Growth Rate (%)	Million Baht	Ratio (%)	Growth Rate (%)	Million Baht	Ratio (%)	Growth Rate (%)
Government Agencies and State Enterprises	90.03	17.55	(73.25)	285.21	33.98	216.79	181.59	23.08	(36.33)
Sales Representatives	96.83	18.87	16.33	213.73	25.46	120.72	181.83	23.11	(14.92)
Private	326.23	63.58	(58.13)	340.44	40.56	4.36	423.28	53.81	24.33
Total Sales Income	513.09	100.00	(57.21)	839.38	100.00	63.59	786.70	100.00	(6.28)

In 2016, the Company's sales income was 513.09 million baht, a reduction from 2015 by 57.21 percent. Income from transformer sales to government agencies, state enterprises and private customers dropped from 1,115.75 million baht in 2015 to 416.26 million baht in 2016, a reduction by 168.04 percent. This was caused by heightened marketing competition and slowing investment in alternative energy projects. Income from sales representatives increased from 83.24 million baht in 2015 to 96.83 million baht in 2016, an increase of 16.33 percent as a result from increases in sales from sale representatives abroad in line with economic growth in the region of sale representatives' countries.

In 2017, the Company's sales income was 839.38 million baht, an increase from 2016 by 63.59 percent. Income from transformer sales to government agencies, state enterprises and private customers increased from 416.26 million baht in 2016 to 625.66 million baht in 2017, an increase by 33.47 percent. This was caused by income from government agencies and state enterprises which increased investments from the previous year. Income from sales representatives increased from 96.83 million baht in 2016 to 213.73 million baht in 2017, an increase of 25.46 percent as a result from increases in sales from sale representatives abroad in line with economic growth in the region of sale representatives' countries.

In 2018, the Company's sales income was 786.70 million baht, a reduction from 2017 by 6.28 percent. Income from transformer sales to government agencies and state enterprises dropped from 285.21 million baht in 2017 to 181.59 million baht in 2018, a reduction by 36.33 percent. This was caused by income from government agencies and state enterprises with slowing investment in projects. Income from transformer sales in the private sector and the export sector increased from 554.17 million baht in 2017 to 605.11 million baht in 2018, an increase of 9.19 percent as a result from increases in domestic and foreign sales in line with domestic and foreign economic growth.

Service Income

The Company's service income in 2016 – 2018 was at 12.89 million baht, 19.42 million baht and 20.76 million baht, respectively. Service income can be divided into: (1) income from transformer repairs, (2) income from providing transformer checks and maintenance services, (3) transportation income and (4) income from allowing transformer leases and other. If service income in 2018 is considered, service income in 2018 consists of income from transformer repairs at 9.66 million baht or 46.53 percent of service income, income from providing transformer checks and maintenance services at 9.24 million baht or a ratio of 44.51 percent of service income, transportation income at 0.56 million baht or a ratio of 2.70 percent of service income, income from allowing transformer leases at 0.82 million baht or a ratio of 3.95 percent of service income and income from other services at 0.48 million baht or a ratio of 2.31 percent of service income.

Other Income

The Company's other income consists of income from selling scraps, profit from exchange rates, interest received, returns from short-term investments, etc. In 2016 – 2018, the Company had other income at 8.32 million baht, 13.28 million baht and 20.29 million baht respectively. In 2018, other income consisted of income from selling scraps at 3.50 million baht, income from short-term investments at 6.11 million baht, profit from foreign currency exchange rates at 4.85 million baht, profit from selling permanent assets at 1.15 million baht and other income at 4.68 million baht.

(b) Costs and Expenses

The Company's main expenses consist of sales and service costs, sales and management expenses and paid interest. In 2016 – 2018, the Company's total expenses amounted to 639.26 million baht, 1,167.94 million baht and 957.85 million baht, respectively, according to the following information:

Sales and Service Costs and Gross Profit

The Company's sales and service costs are the Company's main expenses. The Company's sales and service expenses were 936.41 million baht in 2016, 760.81 million baht in 2017 and 747.76 million baht in 2018 or 78.77 percent, 65.14 percent and 78.15 percent of total expenses, respectively.

If sales and service cost is compared with sales and service income, the Company has the aforementioned ratios at 94.79 percent, 84.39 percent and 78.05 percent of sales and service income, respectively, or a gross profit of 5.21 percent, 15.61 percent and 21.95 percent, respectively. The following factors influence the Company's gross profit as follows:

1. With regard to customer mix in each year, the Company's customers can be divided into three following types consisting of: (1) government agencies and state enterprises, (2) sale representatives and (3) private customers. Transformer distribution to all three types of customers has different gross profit rates. In 2016

and 2017, government agency and state enterprise customers had the highest gross profit margins due to large purchase orders, causing cost per unit to be lower than transformer manufacturing for other customers, followed by foreign sale representative customers.

2. In 2018, transformer sale ratios to government agencies and state enterprises dropped from 33.98 percent in 2017 to 23.08 percent in 2018 due to a slowdown in government sector project investments. However, at the same time, private sector and export transformer sales increased from 40.56 percent in 2017 to 53.81 percent in 2018, causing gross profit margins to increase from 15.61 percent in 2017 to 21.95 percent in 2018.
3. Raw material prices, particularly for main raw materials such as silicon, coated round wires and copper foils which have few producers, adjust according to supply and demand in the global market. Therefore, raw material prices fluctuate significantly. In 2015, silicon prices rose continually until the end of 2015 at 40 – 50 percent due to higher demand for silicon before dropping continually in 2016 and 2017 by 10 – 25 percent. Meanwhile, the price of coated round wire and copper foil dropped slightly in 2016 and rose in 2017 at a rate of 12 – 19 percent. In 2018, silicon prices rose from 2017 at the rate of 2.16 percent, coated round wire prices rose from 2017 by 6.61 percent and copper foil prices increased from 2017 by 1.40 percent.

Sales and Management Expenses

The Company's sales and management expenses were 127.44 million baht in 2016, 394.72 million baht in 2017 and 193.89 million baht in 2018 or 23.53 percent, 42.89 percent and 19.82 percent of total income, respectively.

In 2016, the Company's sales and management expenses were at 127.44 million baht, a reduction from 2015 by 8.56 percent because the Company's sales expenses dropped with lower sales such as transformer transportation expenses, packing expenses and test expenses, etc. The Company's significant management expenses consisted of expenses related to executives and employees at a ratio of 18.47 percent, depreciation at 11.47 percent, marketing expenses at 7.68 percent of sales and management expenses, etc.

In 2017, the Company's sales and management expenses were 392.40 million baht, an increase from 2016 by 206.70 percent. This is because the Company's management expenses increased from normal operating expenses such as legal consultation expenses and employee expenses, etc. Furthermore, in 2017, the Company perceived allowance for depreciation of ค่าความนิยม from business purchases at 193.25 million baht.

In 2018, the Company's sales and management expenses were 193.89 million baht, a reduction from 2017 by 50.88 percent due to the Company's control to lower operating expenses including consultation expenses. Furthermore, in 2018, the Company reversed the allowance for doubtful accounts of loans to subsidiaries at 47.25 million baht.

Paid Interest

In 2016 – 2018, the Company paid interest at 7.76 million baht, 14.73 million baht and 15.17 million baht, respectively. Most of the Company's interest payment burdens were created by B/E, P/N and LC/TR balance spending, which were current loan balances in ordering raw material purchases from in the country and overseas. Furthermore, the Company has long-term loans from a commercial bank to invest in machinery to enhance production efficiency. This created interest burdens from the aforementioned long-term loans.

(c) Net Profit

Based on the aforementioned performance, in 2016 – 2018, the Company's net loss was 80.59 million baht, 247.25 million baht and 0.12 million baht, respectively, with net profit at 0.96 percent, 14.94 percent, 27.03 percent and 0.01 percent, respectively.

If net profit in the past year is considered, the Company's net profit can be seen to increase or drop according to the Company's income including income ratios from sale of goods. For example, sales to customers with high gross profit ratios were higher because the Company's sales and management expenses such as expenses related to executives and employees and depreciation, etc., were at 37 – 40 percent and did not fluctuate with income. In 2016, the Company's net loss was 80.59 million baht as a result of a slowdown to the economy, lower investment in alternative energy, fewer state

enterprise bidding and marketing competition. Furthermore, lower sales increased production cost per unit from expenses which did not fluctuate with production and sales. The Company's aforementioned expenses amounted to 30 – 40 percent of total expenses.

In 2017, the Company had a net loss of 247.25 million baht, an increase from 2016 by 206.80 percent because the Company perceived allowance for depreciation of value from business purchases at 193.25 million baht.

In 2018, the Company had a net loss of 0.12 million baht, a reduction from 2017 by 99.95 percent. This was because the Company controlled production, selling prices, sales and management expenses including the reversal of allowance for doubtful accounts of loans for subsidiaries at 47.25 million baht.

Return on Equity

When return on equity is considered, return on equity can be seen to have adjusted in the same direction as net profit increases. The Company's return on equity was 12.11 percent for 2016, 22.48 percent for 2017 and 0.01 percent from 2018. The Company's return on equity increased when compared to 2017 because the Company's performance in 2018 had lower losses from the Company's performance in 2017 by 247.12 million baht or a reduction of 99.95 percent.

2 Financial Status

(a) Assets

At the end of 2016 – 2018, the Company had total assets at 1,220.80 million baht, 2,037.27 million baht and 1,918.99 million baht, respectively. The Company's significant assets consist of land, buildings and equipment, trade accounts receivable, inventory and temporary investments. In 2018, ratios of the aforementioned significant assets to total assets were at 35.92 percent, 13.33 percent, 9.13 percent, and 24.30 percent respectively. Significant assets of the Company can be summarized as follows:

Trade Accounts Receivable

The Company's separate statement showed trade accounts receivable before allowance for doubtful accounts at 254.35 million baht at the end of 2016, 281.93 million baht at the end of 2017 and 260.39 million baht at the end of 2018 or ratios of 19.30 percent, 13.95 percent and 14.36 percent of total assets, respectively. At the end of 2018, trade accounts receivable before deducting allowance for doubtful accounts dropped by 7.64 percent when compared to 2017. This is because the Company specified policies to manage and follow-up on outstanding debts including loan policies to prevent risks if customers did not pay according to schedule, causing collection efficiency to increase. In the past, the Company's average collection periods were 252.32 days in 2016, 113.47 days in 2017 and 113.02 days in 2018. In 2018, average collection period was shorter.

Outstanding Period	As of 31 DEC 2016		As of 31 DEC 2017		As of 31 DEC 2018	
	Million Baht	%	Million Baht	%	Million Baht	%
Not Due for Payment	111.85	43.98	126.80	44.97	157.88	60.63
Unpaid and Late:						
No More Than 3 Months	111.07	43.67	81.79	29.01	59.44	22.83
3 – 6 Months	9.11	3.58	28.08	9.96	4.60	1.77
6 – 12 Months	3.20	1.25	20.39	7.23	7.49	2.88
More Than 12 Months	19.12	7.52	24.89	8.83	30.98	11.89
Trade Accounts Receivable Before Deducting Allowance for Doubtful Accounts	254.35	100	281.93	100	260.39	100
Deduct: Allowance for Doubtful Accounts	(19.12)		(23.37)		(30.65)	
Trade Accounts Receivable – Net	235.23		258.56		229.74	

Based on the aforementioned table, the Company's accounts receivable not due for payment at the end of 2016 – 2018 can be seen to be 43.98 percent, 44.97 percent and 60.63 percent of trade accounts receivable before deducting allowance for doubtful accounts, respectively. In the meantime, the Company's accounts receivable who have not paid were at ratios of 56.02 percent, 55.03 percent and 39.37 percent of trade accounts receivable before deducting allowance for doubtful account, respectively. Most of these trade accounts were trade accounts who had not paid for no more than three months. This was because the Company was unable to collect when waiting for customer bills and payments. In addition, most of the Company's private customers were contractors of electricity systems who purchased the Company's transformers to install in various projects. Therefore, payment for the cost of goods to the Company was dependent on the customer's ability to collect from project owners, which may take a long time. Nevertheless, the Company was able to collect from the aforementioned accounts receivable.

At the end of 2016 – 2018, the Company's ratio of trade accounts who have not paid for more than one year was at 7.52 percent, 8.83 percent and 11.89 percent of trade accounts receivable before deducting allowance for doubtful accounts, respectively. In 2018, accounts receivable who have not paid for more than one year increased from 2017 by 24.47 percent. The Company considered actions to monitor the aforementioned debts including legal actions or negotiations for debtors to repay debts to the Company by making written agreements to compound debt in the case of debtors who can be contacted by basing consideration on what is deemed fitting and the needs of each debtor. The management places importance on monitoring progress and operations of related parties closely in monthly meetings. Thus, the Company received payments from accounts receivable with allowance for doubtful accounts at 0.80 in 2016, 4.44 in 2017 and 5.91 in 2018. Regarding the policy to set allowance for doubtful accounts in 2016 – 2017, the Company set allowance for doubtful accounts unpaid for more than one year at the full amount. At the end of 2018, the Company set allowance for doubtful accounts at 30.65 million baht.

Inventory

At the end of 2016 – 2018, the Company's inventory before deducting allowance for deterioration and depreciation of goods dropped by 217.36 million baht, 155.97 million baht and 187.45 million baht, respectively. The highest component of inventory in 2016 – 2017 was raw materials at 49.70 percent and 45.46 percent of total inventory, respectively. In 2018, the highest amount of inventory was finished goods at 48.75 percent of total inventory. This was because:

- The main raw materials used in manufacturing transformers such as silicon and copper foil are goods with few producers that require reservations in advance to purchase from producers or suppliers in order to have sufficient raw materials for the amount needed for manufacturing and to reduce risks from fluctuations in raw material prices.
- Ordinarily, to manufacture a set of transformers, raw materials of different sizes are needed. Different draw material sizes are used at different amounts while raw material purchase orders have a minimum order, causing an amount of raw materials to be left over.
- Because some raw materials such as copper foil and coated round wire, etc., are rolled, copper or wire scraps are leftover when used. The Company will consider selling the aforementioned raw material scraps as appropriate. While scraps are not amortized, the Company will continue to record the aforementioned copper or wire scraps as inventory raw materials.

	As of 31 DEC 2016		As of 31 DEC 2017		As of 31 DEC 2018	
	Million Baht	%	Million Baht	%	Million Baht	%
Raw Materials	108.04	49.70	70.90	45.46	77.32	41.25
Work in Progress	10.52	4.84	10.70	6.86	18.72	9.98
Finished Goods	72.73	33.46	71.28	45.70	91.38	48.75
Goods in Transit	26.07	11.99	3.09	1.98	0.03	0.02
Total Inventory	217.36	100	155.97	100	187.45	100
Less: Reserve for Degraded Goods and Allowance for Lower Value of Goods	(9.82)		(4.82)		(12.19)	
Inventory – Net	207.54		151.15		175.26	

The ratio of finished goods to inventory was 33.46 percent at the end of 2016, 45.70 percent at the end of 2017 and 48.75 percent at the end of 2018 while holding periods were at 139.45 days, 89.55 days and 83.82 days, respectively. The finished goods consisted of the following: (1) manufactured transformers pending delivery to customers. Because the Company delivers goods to customers at sites specified by customers in most transformer sales, therefore, customers need to prepare facilities to support transformers from the Company. On some occasions, customers will reschedule transformer deliveries, causing the Company to record the aforementioned transformers as finished goods because the Company's accounting policy allows goods to be recorded as income only when transformers have been delivered to customers; (2) transformers manufactured and reserved for sale. In 2011 and 2012, the Company's sales grew by leaps and bounds. Therefore, the Company placed greater importance on manufacturing finished transformers for sale since 2013. These transformers are standard transformers with regular purchase orders, allowing the Company to make production plans more effectively. Thus, the Company has a number of finished transformers in inventory.

In 2018, the Company's inventory before deducting allowances for degradation and depreciation rose to 187.45 million baht from the end of 2017, an increase of 4.82 million baht or 20.18 percent. Inventory before deducting the aforementioned consisted of 77.32 million baht in raw materials, an increase of 9.05 percent from the end of 2017, ongoing work at 18.72 million baht, an increase of 74.95 percent from the end of 2017 and finished goods at 91.38 million baht, an increase of 28.20 percent from the end of 2017. This was because the Company increased transformer manufacturing in the fourth quarter of 2018 to meet customer delivery schedules at the end of the year and scheduled deliveries in early 2019, causing inventory to be high when compared to the previous year and 2018.

Land, Buildings and Equipment

The Company had net land, buildings and equipment at 307.20 million baht at the end of 2016, 688.96 million baht at the end of 2017 and 689.30 million baht at the end of 2018 or a ratio to total assets of 25.61, 33.82 and 35.92, respectively. In 2015 and 2016, the Company's machinery and factory equipment increased by 43.38 million baht and 1.43 million baht from investment to purchase machinery and factory equipment such as steel cutting and folding machines to enhance production efficiency.

In 2017, the Company's net land, buildings and equipment increased by 381.70 million baht as a result of investment in a solar energy project, which was an indirect subsidiary, and the Company invested to partially modify machines. The Company continually invested in machinery and equipment to enhance production efficiency and capacity from 2012 to the present day.

In 2018, the Company's net land, buildings and equipment increased by only 0.34 million baht due to no investment in any project.

(b) Liquidity

Cash Flow

In 2016, the Company's net cash flow from operations was 11.53 million baht, an increase from 2015. Although the Company's loss in performance was as high as 99.71 million baht in 2016, trade accounts receivable dropped from 326.60 million baht in 2015 to 227.33 million baht in 2016. The Company's cash flow spent in investment activities increased significantly from investments in various funds at 200.00 million baht, investment in machinery and factory equipment permanent assets at 44 million baht and a security deposit for entering studies in energy investment projects at 81 million baht. The Company had net cash flow from financing activities at 336.31 million baht. The Company's short-term loans increased by 75.83 million baht, cash received from capital increases were at 329.00 million baht and dividend payouts to shareholders at 64.00 million baht. Because of the aforementioned reasons, cash and cash equivalents in 2016 increased by 5.09 million baht.

In 2017, the Company's net cash flow from operations was 39.70 million baht, a reduction from 2016. In 2017, the Company's losses from performance were as high as 253.13 million baht because allowance for depreciation of value was as high as 193.25 million baht. Inventory increased from 57.61 million baht in 2016 to 61.39 million baht in 2017 and trade accounts receivable dropped from 227.33 million baht in 2016 to 25.68 million baht in 2017. The Company's cash flow spent in investment activities increased to 855.67 million baht from investing 735.63 million baht in energy businesses through subsidiaries, investments in machinery and factory equipment permanent assets at 56.61 million baht and acceptance of 81 million baht in security deposits to study in energy investment project. The Company's net cash flow gained from financing activities was 889.63 million baht. The Company's short-term loans increased by 15.06 million baht, cash gained from capital increases were at 900.93 million baht and

dividend payout to shareholders was at 15.06 million baht. For the aforementioned reasons, cash and cash equivalents dropped by 7.66 million baht in 2017.

In 2018, the Company had net cash flow from operations at 164.69 million baht, an increase from 2017, because the Company had a loss of 0.12 million baht from performance in 2018, a reduction from 2017. The Company's cash flow spent in investment activities increased to 42.30 million baht and the Company's net cash flow from financing activities was 178.82 million baht, causing cash flow to increase by 27.80 million baht.

(Unit: Million Baht)	2016	2017	2018
Net Cash Earned (Spent) from Operating Activities	11.53	(39.70)	164.69
Net Cash (Spent) from Investment Activities	(342.74)	(855.69)	42.30
Net Cash Earned (Spent) from Financing Activities	336.31	889.63	(178.82)
Increases (Decreases) in Net Cash and Cash Equivalents	5.09	(7.66)	27.80

Liquidity Ratio

At the end of 2016 – 2018, the Company's liquidity ratios were 1.72 times, 1.90 times and 2.42 times, respectively. In addition, the Company's quick ratios were 1.22 times, 1.53 times and 1.91 times, respectively. The significant difference of the quick ratio from the liquidity ratio was because the Company had high inventory to current assets ratios at 26.51 percent, 16.16 percent and 16.45 percent, respectively.

The Company's cash cycle was 275.54 days in 2016, 250.21 days in 2017 and 241.80 days in 2018. The Company's average collection period in 2016 – 2018 is at 252.32 days, 113.47 days and 113.02 days, respectively. The collection period in 2016 is high when compared to the previous year and 2017 because sales income in 2016 dropped significantly when compared to 2015 and sales were made to large products with deliveries at the end of the year, causing outstanding debtors to be higher. In 2017 and 2018, the Company's collection periods were at 113.47 days and 113.02 days, respectively, a reduction from previous years. The Company monitored closely to ensure collection is more efficient.

	2016	2017	2018
Liquidity Ratio (Times)	1.72	1.90	2.42
Quick Ratio (Times)	1.22	1.53	1.91
Average Collection Period (Days)	252.32	113.47	113.02
Average Holding Period (Days)	139.45	89.55	83.82
Payment Period (Days)	116.22	47.19	44.97
Cash Cycle (Days)	275.54	250.21	241.80

(c) Capital Sources

Liabilities

At the end of 2016 – 2018, the Company's total liabilities were at 463.14, 595.18 and 477.34 million baht, respectively. Total liabilities noticeably rise or fall with higher or lower sales figures. This is because the Company needed to purchase sufficient raw materials for manufacturing goods. If the Company's liability structure is considered, most of the liabilities would be found to be current liabilities used in the Company's normal business operations. When calculated as a ratio to total liabilities, the ratios are 98.52 percent at the end of 2016, 97.33 percent at the end of 2017 and 92.95 percent at the end of 2018. Significant current liabilities consist of short-term loans from financial institutes at 74.41 percent of total liabilities at the end of 2018. Most of the Company's current liabilities are composed of loans from promissory notes (P/N) and LC/TR used in making purchase orders of raw materials in the country and overseas. Furthermore, total liabilities include trade accounts payable with a ratio of 20.58 percent of total liabilities at the end of 2018.

Shareholder Equity

At the end of 2016, the Company had shareholders' equity equal to 757.67 million baht, an increase from the end of 2015 by 184.41 million baht, which is an increase to capital increases during the year at 329 million baht. This is a reduction from loss in performance at 80.60 million baht and the Company paid out dividends to shareholders at 64.00 million baht.

At the end of 2017, the Company had shareholders' equity equal to 1,442.09 million baht, an increase from the end of 2016 by 684.42 million baht, which is an increase to capital increases during the year at 902.68 million baht. This is a reduction from loss in performance at 247.25 million baht and the Company paid out dividends to shareholders at 8.10 million baht.

At the end of 2018, the Company has shareholders' equity at 1,441.64 million baht, a reduction from the end of 2017 by 0.45 million baht, which a reduction from losses in performance at 0.12 million baht.

Capital Structure Suitability

The Company has a debt to equity ratio of 0.61 times in 2016, 0.41 times in 2017 and 0.33 times in 2018. In 2016, debt to equity ratio was high when compared to the previous year and 2017. This was mainly caused in the final quarter of the year when the Company ordered to purchase large amounts of raw materials sufficiently for manufacturing in the fourth quarter of 2017 and the first quarter of 2017, causing short-term loans used in operations to increase to 311.06 million baht in 2016 from 215.12 million baht in 2015. In 2017, the debt to equity ratio dropped because the Company increased registered capital by 650 million baht in the fourth quarter. This capital increase was specific for use to invest in energy projects.

In 2018, debt to equity ratio dropped from 2017 because raw material inventory was maintained at levels consistent with manufacturing capacity and no investments were made in any project.

3 Factors and Major Influences with Potential Impact on Future Performance and Financial Status

Concerning impact from the uncertainty of bidding results, because customers are a group in the government sector and state enterprises that generates and distributes electricity such as the Metropolitan Electricity Authority and the Provincial Electricity Authority, transformers are procured by bidding, which may increase uncertainty for the Company's sales income because the Company's sales income is dependent on the Company's bidding capabilities. Furthermore, the Company's sales income is mainly dependent on the economy and budget of each agency, which has effects on the time when the aforementioned agencies will open biddings. In the past, the Company's income from transformer sales to this group of customers amounted to 20 – 30 percent of total sales income, which is a high ratio. Nevertheless, the Company and the Company's executives conducted business over a long time, causing the Company to have good relationships with MEA and PEA and the Company gained trust in the quality of transformers. Furthermore, the Company is one of only a few manufacturers capable of manufacturing high quality transformers to meet the needs of both agencies. Therefore, executives believe the Company has sufficient capacity to sell transformers to both MEAN and PEA continually in the long-term. Moreover, the Company makes efforts to expand the market to foreign customers more by appointing more foreign sales representative in every year.

4 Certified Public Account Fees

In the fiscal year ending 31 December 2018, the Company paid audit fees to the Company's Certified Public Accountant, Grant Thornton Co., Ltd., in the amount of 1,380,000.00 baht. Apart from the aforementioned fees, the Company has no other service fee to pay to the Certified Public Accountant, the Certified Public Accountant's auditing office and individuals or businesses related to the Certified Public Accountant or the Certified Public Accountant's auditing office.

Statements of Financial Position

(Unit : Baht)

		Consolidated F/S		Separate F/S	
	Notes	31 December 2018	31 December 2017	31 December 2018	31 December 2017
ASSETS					
CURRENT ASSETS					
Cash and cash equivalents	5	118,789,123	90,992,895	69,693,599	44,810,154
Temporary investments	6	466,340,820	378,848,818	351,869,055	378,540,803
Trade accounts receivable and unbilled accrued income					
- general customers - net	7	255,756,389	280,966,609	229,036,321	256,722,328
- related company	7, 8	702,134	1,836,548	702,134	1,836,548
Other account receivable - general customers		1,139,513	-	211,251	-
- related companies	8	156,110	1,348,271	1,192,910	8,150,463
Inventories - net	9	175,253,030	151,149,702	175,253,030	151,149,702
Refundable value added tax		29,683,039	17,164,110	26,848,234	14,447,594
Prepaid expenses		4,121,881	3,987,129	4,056,796	3,810,688
Other current assets		13,105,404	8,778,163	12,793,312	7,872,760
Total current assets		1,065,047,443	935,072,245	871,656,642	867,341,040
NON-CURRENT ASSETS					
Restricted deposit at bank	10	21,306,698	21,118,629	-	-
Investments in					
- subsidiary companies - net	11	-	-	568,292,644	14,855,120
- associated companies - net	12	-	210,042,705	-	499,800
Loan to related companies - net	8	6,901,877	17,870,454	6,901,877	616,747,578
Property, plant and equipment - net	14	689,299,174	688,962,686	345,976,004	320,480,941
Computer software - net	15	4,188,378	5,502,708	4,020,429	5,325,282
Interconnection charge - net	16	4,255,477	4,584,904	-	-
Power purchase agreement - net	17	108,906,540	117,359,191	-	-
Goodwill - net	2	-	-	-	-
Deferred income tax asset - net	20	15,953,700	33,274,196	13,274,003	31,155,050
Other non current assets		3,125,718	3,479,218	2,836,455	3,193,967
Total non-current assets		853,937,562	1,102,194,691	941,301,412	992,257,738
TOTAL ASSETS		1,918,985,005	2,037,266,936	1,812,958,054	1,859,598,778

The accompanying notes form an integral part of these financial statements.

Statements of Financial Position (Continued)

(Unit : Baht)

		Consolidated F/S		Separate F/S	
	Notes	31 December 2018	31 December 2017	31 December 2018	31 December 2017
LIABILITIES AND SHAREHOLDERS' EQUITY					
CURRENT LIABILITIES					
Short-term loans from banks	18	202,082,000	320,554,278	202,082,000	320,554,278
Trade accounts payable		98,223,002	42,831,480	98,223,002	42,831,480
Other account payable - general suppliers		11,032,598	11,556,681	8,546,199	10,305,220
- related company	8	12,626	19,260	12,626	19,260
Current portion of :					
- Long-term loans from banks	19	75,240,000	66,840,000	8,400,000	-
- Liabilities under financial lease agreements		2,195,735	2,714,374	1,805,417	2,341,829
- Liabilities under employee benefits obligation	22	754,444	178,063	754,444	178,063
Accrued expenses	21	22,998,919	23,374,823	20,624,504	19,580,596
Advance from customers		16,420,630	14,583,175	16,420,630	14,583,175
Other current liabilities		11,397,521	10,592,625	9,486,814	8,877,463
Total current liabilities		440,357,475	493,244,759	366,355,636	419,271,364
NON-CURRENT LIABILITIES					
Long-term loans from banks - net	19	24,299,346	89,400,000	1,739,346	-
Liabilities under financial lease agreements - net		2,321,619	3,042,366	1,808,728	2,139,157
Liabilities under employee benefits obligation - net	22	10,362,603	9,493,289	10,088,642	9,362,346
Total non-current liabilities		36,983,568	101,935,655	13,636,716	11,501,503
TOTAL LIABILITIES		477,341,043	595,180,414	379,992,352	430,772,867

The accompanying notes form an integral part of these financial statements.

Statements of Financial Position (Continued)

(Unit : Baht)

		Consolidated F/S		Separate F/S	
	Notes	31 December 2018	31 December 2017	31 December 2018	31 December 2017
LIABILITIES AND SHAREHOLDERS' EQUITY (Continued)					
SHAREHOLDERS' EQUITY					
Share capital : common share, Baht 1 par value					
Registered 429,240,725 shares	23	429,240,725	429,240,725	429,240,725	429,240,725
Issued and fully paid-up 341,092,567 shares					
(2017 : 341,088,220 shares)		341,092,557	341,088,220	341,092,557	341,088,220
Premium on common shares		1,136,572,101	1,136,533,588	1,136,572,101	1,136,533,588
Premium on common shares from business combination		42,294,921	42,294,921	-	-
Retained earnings (Deficits)					
- Appropriated for legal reserve	25	20,000,000	20,000,000	20,000,000	20,000,000
- Unappropriated		(98,929,218)	(99,270,425)	(64,698,956)	(68,795,897)
Other components of equity		(1,508,778)	(1,199,755)	-	-
Total equity of the Company's shareholders		1,439,521,583	1,439,446,549	1,432,965,702	1,428,825,911
Non - controlling interests in subsidiaries		2,122,379	2,639,973	-	-
Total shareholders' equity		1,441,643,962	1,442,086,522	1,432,965,702	1,428,825,911
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY		1,918,985,005	2,037,266,936	1,812,958,054	1,859,598,778

The accompanying notes form an integral part of these financial statements.

Statements of Profit or Loss and Other Comprehensive Income

(Unit : Baht)					
	Notes	Consolidated F/S		Separate F/S	
		2018	2017	2018	2017
Income from sales and services					
Sales	8	937,286,010	882,111,143	794,807,652	846,048,282
Service income		20,764,087	19,419,944	20,764,087	19,419,944
Total income from sales and services	31	<u>958,050,097</u>	<u>901,531,087</u>	<u>815,571,739</u>	<u>865,468,226</u>
Cost of sales and services					
Cost of sales		(735,900,161)	(745,372,181)	(688,969,970)	(732,544,980)
Cost of services		(11,860,974)	(15,437,336)	(11,860,974)	(15,437,336)
Total cost of sales and services	31	<u>(747,761,135)</u>	<u>(760,809,517)</u>	<u>(700,830,944)</u>	<u>(747,982,316)</u>
Gross profit		210,288,962	140,721,570	114,740,795	117,485,910
Gain on exchange rate		4,854,937	2,789,411	4,854,937	1,145,324
Other income	8	15,442,941	10,487,706	19,051,241	17,089,212
Profit before expenses	20	<u>230,586,840</u>	<u>153,998,687</u>	<u>138,646,973</u>	<u>135,720,446</u>
Loss from sale of investment in indirect associated company	12	(19,695,061)	-	-	-
Selling expenses	28	(47,869,659)	(49,484,473)	(47,869,659)	(49,484,472)
Administrative expenses	8, 28	(126,329,759)	(345,236,762)	(59,390,125)	(300,205,882)
Total expenses		<u>(193,894,479)</u>	<u>(394,721,235)</u>	<u>(107,259,784)</u>	<u>(349,690,354)</u>
Profit (loss) from operations		36,692,361	(240,722,548)	31,387,189	(213,969,908)
Equity in net profit (loss) of associated companies	12	(1,027,387)	2,723,237	-	-
Profit (loss) before financial cost and income tax		35,664,974	(237,999,311)	31,387,189	(213,969,908)
Finance cost		(15,174,809)	(14,730,861)	(9,409,201)	(11,271,210)
Profit (loss) before income tax		20,490,165	(252,730,172)	21,977,988	(225,241,118)
Income tax benefit (expense)	20	(17,524,944)	5,881,589	(17,881,047)	5,899,833
Profit (loss) from continuing operations		2,965,221	(246,848,583)	4,096,941	(219,341,285)
Loss from discontinued operations	13	(3,087,075)	(396,953)	-	-
Profit (loss) for the year		<u>(121,854)</u>	<u>(247,245,536)</u>	<u>4,096,941</u>	<u>(219,341,285)</u>
Other comprehensive income (loss)					
Items that will not be reclassified subsequently to profit or loss					
Actuarial loss - net of income tax	20	-	(3,385,229)	-	(3,385,229)
Items that will be reclassified subsequently to profit or loss					
Exchange differences from foreign currency					
financial statement translation - net of income tax		(363,556)	(1,828,278)	-	-
Other comprehensive loss for the year - net of income tax		<u>(363,556)</u>	<u>(5,213,507)</u>	<u>-</u>	<u>(3,385,229)</u>
Total comprehensive income (loss) for the year		<u>(485,410)</u>	<u>(252,459,043)</u>	<u>4,096,941</u>	<u>(222,726,514)</u>

The accompanying notes form an integral part of these financial statements.

Statements of Profit or Loss and Other Comprehensive Income (Continued)

(Unit : Baht)

		Consolidated F/S		Separate F/S	
	Notes	2018	2017	2018	2017
Profit (loss) attributable to:					
Portion of the Company's shareholders		341,207	(247,186,033)	4,096,941	(219,341,285)
Portion of non-controlling interests in subsidiaries		(463,061)	(59,503)	-	-
		<u>(121,854)</u>	<u>(247,245,536)</u>	<u>4,096,941</u>	<u>(219,341,285)</u>
Comprehensive loss attributable to:					
Portion of the Company's shareholders		32,184	(252,125,298)	4,096,941	(222,726,514)
Portion of non-controlling interests in subsidiaries		(517,594)	(333,745)	-	-
		<u>(485,410)</u>	<u>(252,459,043)</u>	<u>4,096,941</u>	<u>(222,726,514)</u>
Basic earnings per share					
Profit (loss) of the Company's shareholders					
(Baht per share)	24	0.001	(0.888)	0.012	(0.788)
Weighted average number of common shares (share)		<u>341,092,557</u>	<u>278,391,073</u>	<u>341,092,557</u>	<u>278,391,073</u>
Dilute earnings per share					
Profit (loss) of the Company's shareholders					
(Baht per share)	24	0.001	(0.833)	0.012	(0.739)
Weighted average number of common shares (share)		<u>341,092,557</u>	<u>296,787,174</u>	<u>341,092,557</u>	<u>296,787,174</u>

The accompanying notes form an integral part of these financial statements.

Statements Of Changes In Shareholders' Equity

FOR THE YEARS ENDED 31 DECEMBER

	Notes	Shareholders' equity of the Company							(Unit : Baht)		
		Issued and fully paid-up share capital	Premium on common shares	Premium on common shares from business combination	Retained earnings (Deficits)			Other components of equity			
					Legal reserve	Unappropriated	Exchange differences on translating financial statement	Total		Non-controlling interests' equity	Total shareholders' equity
Consolidated F/S											
Balance as at 1 January 2017		270,000,000	304,939,064	-	20,000,000	159,400,837	354,281	754,694,182	2,973,718	757,667,900	
23	Share capital increment	70,910,475	830,015,225	-	-	-	-	900,925,700	-	900,925,700	
23	Exercise warrant	177,745	1,579,299	-	-	-	-	1,757,044	-	1,757,044	
2	Premium on common shares from business combination	-	-	42,294,921	-	-	-	42,294,921	-	42,294,921	
26	Cash dividend payment	-	-	-	-	(8,100,000)	-	(8,100,000)	-	(8,100,000)	
Transactions with shareholders		71,088,220	831,594,524	42,294,921	-	(8,100,000)	-	936,877,665	-	936,877,665	
	Loss for the year	-	-	-	-	(247,186,033)	-	(247,186,033)	(59,503)	(247,245,536)	
	Other comprehensive loss for the year	-	-	-	-	(3,385,229)	(1,554,036)	(4,939,265)	(274,242)	(5,213,507)	
Total comprehensive loss for the year		-	-	-	-	(250,571,262)	(1,554,036)	(252,125,298)	(333,745)	(252,459,043)	
Balance as at 31 December 2017		341,088,220	1,136,533,588	42,294,921	20,000,000	(99,270,425)	(1,199,755)	1,439,446,549	2,639,973	1,442,086,522	
Balance as at 1 January 2018		341,088,220	1,136,533,588	42,294,921	20,000,000	(99,270,425)	(1,199,755)	1,439,446,549	2,639,973	1,442,086,522	
23	Exercise warrant	4,337	38,513	-	-	-	-	42,850	-	42,850	
Transactions with shareholders		4,337	38,513	-	-	-	-	42,850	-	42,850	
	Profit (loss) for the year	-	-	-	-	341,207	-	341,207	(463,061)	(121,854)	
	Other comprehensive loss for the year	-	-	-	-	-	(309,023)	(309,023)	(54,533)	(363,556)	
Total comprehensive income (loss) for the year		-	-	-	-	341,207	(309,023)	32,184	(517,594)	(485,410)	
Balance as at 31 December 2018		341,092,557	1,136,572,101	42,294,921	20,000,000	(98,929,218)	(1,508,778)	1,439,521,583	2,122,379	1,441,643,962	

The accompanying notes form an integral part of these financial statements.

Statements Of Changes In Shareholders' Equity (Continued)

	Notes	Issued and fully paid-up share capital	Premium on common shares	Retained earnings (Deficits)			(Unit : Baht)
				Legal reserve	Unappropriated	Total	
Balance as at 1 January 2017		270,000,000	304,939,064	20,000,000	162,030,617	756,969,681	
Share capital increment	23	70,910,475	830,015,225	-	-	900,925,700	
Exercise warrant		177,745	1,579,299	-	-	1,757,044	
Cash dividend payment	26	-	-	-	(8,100,000)	(8,100,000)	
Transactions with shareholders		71,088,220	831,594,524	-	(8,100,000)	894,582,744	
Loss for the year		-	-	-	(219,341,285)	(219,341,285)	
Other comprehensive loss for the year		-	-	-	(3,385,229)	(3,385,229)	
Total comprehensive loss for the year		-	-	-	(222,726,514)	(222,726,514)	
Balance as at 31 December 2017		341,088,220	1,136,533,588	20,000,000	(68,795,897)	1,428,825,911	
Balance as at 1 January 2018		341,088,220	1,136,533,588	20,000,000	(68,795,897)	1,428,825,911	
Exercise warrant	23	4,337	38,513	-	-	42,850	
Transactions with shareholders		-	38,513	-	-	42,850	
Profit for the year		-	-	-	4,096,941	4,096,941	
Total comprehensive income for the year		-	-	-	4,096,941	4,096,941	
Balance as at 31 December 2018		341,092,557	1,136,572,101	20,000,000	(64,698,956)	1,432,965,702	

The accompanying notes form an integral part of these financial statements.

Statements of Cash Flows

			(Unit : Baht)	
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Cash flows from operating activities				
Profit (loss) before income tax	17,403,090	(253,127,125)	21,977,988	(225,241,118)
Adjustments to reconcile profit (loss) before income tax				
to net cash provided from operating activities				
Depreciation and amortization	74,247,370	50,947,553	43,558,085	43,043,704
Allowance for doubtful accounts	7,279,592	4,256,681	7,279,592	4,256,681
Allowance (reversal of allowance) for obsolete and decline value of inventories	7,375,334	(4,997,647)	7,375,334	(4,997,647)
Gain on disposal of fixed assets	(546,736)	(2,767,847)	(1,154,946)	(2,767,847)
Unrealized gain on exchange rate	(854,732)	(3,776,150)	(854,732)	(3,776,150)
Unrealized gain on change in value of temporary investments	(2,864,938)	(40,803)	(2,411,206)	(40,803)
Gain on sales of temporary investments	(765,438)	-	(757,420)	-
Allowance for impairment of investment in subsidiary companies	-	-	6,562,476	141,799,970
Allowance for impairment of investment in associated company	-	-	499,800	-
Allowance (reversal of allowance) for doubtful account for loan to subsidiary company	-	-	(54,352,422)	54,352,422
Allowance for impairment of loan to associated company	7,098,123	-	7,098,123	-
Allowance for impairment of fixed assets	2,909,280	-	-	-
Allowance for impairment of goodwill	-	193,254,818	-	-
Equity in net loss (profit) of associated companies	1,027,387	(2,723,237)	-	-
Provision for employee benefits obligation	1,086,350	1,032,149	951,516	901,206
Loss from sale of investment in indirect associated company	19,695,061	-	-	-
Interest expense	15,174,809	14,730,861	9,409,201	11,271,210
Cash provide from (used in) operations before changes in				
operating assets and liabilities	148,264,552	(3,210,747)	45,181,389	18,801,628
Decrease (increase) in operating assets				
Trade accounts receivable and unbilled accrued income - general customers	18,775,798	(25,677,388)	21,251,585	(26,813,382)
- related company	1,134,414	(1,154,530)	1,134,414	(1,154,530)
Other account receivable - general customers	(1,139,513)	-	(211,251)	-
- related companies	1,192,161	(943,548)	6,957,553	(7,745,740)
Inventories	(31,478,662)	61,390,056	(31,478,662)	61,390,056
Refundable value added tax	(12,518,929)	(9,462,251)	(12,400,640)	(6,745,735)
Prepaid expenses	(134,752)	689,903	(246,108)	857,093
Other current assets	(2,749,447)	2,323,325	(3,156,060)	2,080,890
Other non-current assets	2,912,039	(1,179,062)	2,915,592	(1,173,407)
Increase (decrease) in operating liabilities				
Trade accounts payable	55,401,084	(67,484,828)	55,401,084	(66,958,606)
Other accounts payable - general suppliers	(524,083)	5,285,029	(1,759,021)	4,033,568
- related company	(6,634)	(28,890)	(6,634)	(28,890)
Accrued expenses	(375,904)	8,033,685	1,043,908	4,807,559
Advances from customers	1,837,455	7,334,280	1,837,455	7,334,280
Other current liabilities	804,895	1,701,314	609,351	3,690,375
Cash provided from (used in) operations	181,394,474	(22,383,652)	87,073,955	(7,624,841)
Interest payment	(14,811,708)	(14,110,585)	(9,054,284)	(10,699,807)
Income tax payment	(3,197,635)	(3,218,846)	(3,082,248)	(3,199,517)
Income tax refund	1,314,001	-	1,314,001	-
Net cash provided from (used in) operating activities	164,699,132	(39,713,083)	76,251,424	(21,524,165)

The accompanying notes form an integral part of these financial statements.

Statements of Cash Flows (Continued)

(Unit : Baht)

	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Cash flows from investing activities				
Decrease (increase) in temporary investment	(83,861,626)	(146,653,298)	29,840,374	(156,632,371)
Decrease (increase) in short - term loan - related companies	3,870,454	(870,454)	657,100,000	(654,100,000)
Increase in investment in subsidiary company	-	-	(560,000,000)	-
Purchase of investment in indirect subsidiary company	-	(528,315,382)	-	-
Increase in investment in indirect associated company	(6,000,000)	(207,319,468)	-	-
Process from sale of investment in indirect associated company	195,320,257	-	-	-
Decrease refundable deposit for feasibility of investment project	-	81,112,500	-	-
Proceeds from sales of fixed assets	3,119,408	3,533,532	3,119,408	3,533,532
Purchases of assets	(69,625,812)	(56,607,212)	(69,335,578)	(56,029,309)
Purchases of computer software	(527,231)	(554,702)	(484,260)	(524,702)
Net cash provide from (used in) investing activities	42,295,450	(855,674,484)	60,239,944	(863,752,850)
Cash flows from financing activities				
Increase (decrease) in short-term loan from banks	(118,472,278)	15,063,288	(118,472,278)	15,063,288
Increase in long-term loan from bank	15,039,346	-	15,039,346	-
Repayment of long-term loans from banks	(71,740,000)	(15,313,311)	(4,900,000)	-
Repayment of liabilities under financial lease agreement	(3,690,386)	(4,701,489)	(3,317,841)	(3,870,370)
Proceeds from paid-up share capital	-	900,925,700	-	900,925,700
Proceed from paid-up share capital from the exercise share warrants	42,850	1,757,044	42,850	1,757,044
Dividend payment	-	(8,100,000)	-	(8,100,000)
Net cash provided from (used in) financing activities	(178,820,468)	889,631,232	(111,607,923)	905,775,662
Exchange differences from conversion of subsidiary's foreign currency				
financial statements	(377,886)	(1,902,548)	-	-
Net increase (decrease) in cash and cash equivalents	27,796,228	(7,658,884)	24,883,445	20,498,647
Cash and cash equivalents at beginning of year	90,992,895	98,651,779	44,810,154	24,311,507
Cash and cash equivalents at end of year	118,789,123	90,992,895	69,693,599	44,810,154
Supplemental cash flows information				
Non cash transactions :				
Purchase assets under finance lease agreements	2,451,000	4,679,000	2,451,000	2,621,000
Premium on share capital from difference				
between market price and agree price	-	42,294,921	-	-

The accompanying notes form an integral part of these financial statements.

Note to Financial Statements

AS AT 31 DECEMBER 2017 AND 2016

1. GENERAL INFORMATION

QTC Energy Public Company Limited, the “Company”, is incorporated in Thailand and has its registered office at 2/2 Krungthep Kritha Soi 8 Yak 5, Krungthep Kritha Road, Huamark, Bangkapi, Bangkok, with a branch at 149 Moo 2 Mapyangporn Sub District, Ploukdaeng District, Rayong.

The Company was listed on “MAI” of the Stock Exchange of Thailand (SET) on 28 July 2011.

As at 31 December 2018 and 2017, the Company’s major shareholders are:

	Percentage	
	2018	2017
Mr. Thatnakhone Thammavong	12.46	12.46
Mr. Chanthanome Phommany	12.46	12.46
Mr. Phoukhaokham Pravovaxay	11.73	11.73

The Company is engaged principally in the manufacturing of electric transformers for sales and made to orders of domestic and foreign customers under the “QTC” Trademark and customer specific brands. At present, the Company’s transformer products are categorized as follows:

1. For distribution transformers: 10-5000 KVA
 - 1.1 Hermetically sealed oil type distribution transformer
 - 1.2 Open type with conservator
2. Power transformers: 5000-30000 KVA
3. Special transformers: designed and manufactured in accordance with customers’ usage and features, such as Earthling transformer, Dry-Type Class F&H, Unit Substation, Pad mounted, Amorphous transformer.

Furthermore, the Company also provides various types of services for customers, such as scheduled checks and maintenance, transformer repairs and maintenance, transformer oil fill services, transformer rental services, etc., in order to support customer needs and facilitate both customers who have purchased the Company’s transformers and general customers.

Details of the Company’s subsidiaries are given in Note 11.

2. BASIS OF FINANCIAL STATEMENTS PREPARATION

(a) Statement of compliance

The accompanying financial statements have been prepared in accordance with the Accounting Act B.E. 2543, Thai Financial Reporting Standards (“TFRS”) issued under the Accounting Professions Act B.E. 2547 and the financial reporting requirements promulgated by the Securities and Exchange Commission under the Securities and Exchange Act B.E. 2535. These financial statements are officially prepared in the Thai language. The translation of these financial statements to other languages must be in compliance with the official report in Thai.

(b) New and revised financial reporting standards, interpretations and guidance

1. Amendments and interpretations to existing Standards that are effective from 1 January 2018

The Federation of Accounting Professions has issued revised Thai Financial Reporting Standards (TFRS), interpretations and guidance, that are effective for annual accounting periods beginning on or after 1 January 2018. The changes were to align with the corresponding International Financial Reporting Standards where most of the changes are relating to the revision of wording and terminology, and the provision of interpretations and accounting guidance to users of the standards.

The adoption of these revised TFRS has not had a material impact on the consolidated and separate financial statements except for the addition disclosures required under TAS 7 (see Note 33).

2. New Standards that are effective from 1 January 2019

During the year, the Federation of Accounting Professions issued Thai Financial Reporting Standard No. 15 “Revenue from Contracts with Customers” (TFRS 15). TFRS 15 is effective for annual accounting periods beginning on or after 1 January 2019, and presents new requirements for the recognition of revenue, replacing Thai Accounting Standard No. 18 “Revenue”, Thai Accounting Standard No.11 “Construction Contracts”, and several revenue-related Interpretations. The new standard establishes a control-based revenue recognition model and provides additional guidance in many areas which are limited in detail under existing Thai Financial Reporting Standards.

The Group’s management has assessed that the impact on the financial statements is immaterial on revenue and others related accounts when new standard is initial applied.

3. New Standards that are effective from 1 January 2020

During the year, the Federation of Accounting Professions issued Thai Financial issue several TFRSs for financial instruments, which consists of TFRS 9 “Financial instruments”, TAS 32 “Financial instruments: Presentation”, TFRS 7 “Financial instruments: Disclosure”, TFRIC 16 “Hedges of a Net Investment in a Foreign Operation” and TFRIC 19 “Extinguishing Financial Liabilities with Equity Instruments”, which are effective for annual accounting periods beginning on or after 1 January 2020. The new TFRS establish new requirements relating to the definition, recognition, classification, measurement, impairment of financial assets and liabilities, as well as providing guidance on hedge accounting.

The Group will adopt these new standards when they become effective, and management is in the process to assess the impact on the financial statements in the period of initial application.

(c) Basis of measurement

The financial statements have been prepared on the historical cost basis except for the following items, which are measured on an alternative basis on each reporting date.

Items	Measurement bases
Non-derivative financial instruments at fair value through profit or loss	Fair value
Net defined benefit liability	Present value of the defined benefit obligation, limited as explained in Note 22

(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 policies and reported amounts of assets, liabilities, income, and expenses. Actual results may differ from their estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized prospectively.

Assumptions and estimation uncertainties

Information about significant areas of estimation uncertainties that have a significant risk of resulting in a material adjustment to the amounts recognized in the financial statements is included in the following notes:

Note 20	Current and deferred taxation
Note 22	Measurement of defined benefit obligations
Note 30	Valuation of financial instruments

Measurement of fair values

A number of the Group 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 CFO.

The Group 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 Group 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.

When measuring the fair value of an asset or a liability, the Group uses market observable data as far as possible. Fair values are categorized 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).

(e) Basis of consolidation

The consolidated financial statements include the financial statements of QTC Energy Public Company Limited and its subsidiaries which are under the control or with voting right more than 50%, QTC – Panco Co., Ltd. and QTC Global Power Co., Ltd., at 85.00% and 99.99% shareholdings, respectively, and the indirect subsidiary, L Solar 1 Co., Ltd, at 100.00% shareholdings.

On 31 August 2018, L Solar 1 Co., Ltd. has registered the change of its name to “Q Solar 1 Co., Ltd.” with the Department of Business Development.

The percentage of subsidiaries total assets as at 31 December 2018 and 2017 and total revenues for the years ended 31 December 2018 and 2017 as included in the consolidated financial statements are as follows:

Subsidiary company	Nature of business	Main place of business	Percentage of subsidiaries's total assets to consolidated total assets As at 31 December		Percentage of subsidiaries's total revenues to consolidated total revenues for the years ended 31 December	
			2018	2017	2018	2017
<u>Direct</u>						
QTC – Panco Co., Ltd.	Distributing of electric transformer	Laos	0.73	0.87	-	-
QTC Global Power Co., Ltd.	Investing in renewable energy	Thailand	28.99	32.68	-	-
<u>Indirect</u>						
Q Solar 1 Co., Ltd. (Formerly "L Solar 1 Co., Ltd.")	Production and distribution of electricity from solar energy	Thailand	21.87	27.81	14.87	4.00

Significant intercompany balances and transactions and investment in subsidiary companies have been eliminated from the consolidated financial statements.

The consolidated financial statements have been prepared with the same accounting policy for the same accounting transactions or accounting events as used for the preparation of separate financial statements.

On 10 August 2018, the shareholders of subsidiary, QTC – Panco Co., Ltd., has resolution to cease its operation and plan for dissolution of the subsidiary. The subsidiary expects the dissolution will be finished within 1 year. However, the Company considers no any significant impact to the financial statement due to the Company already set provision for impairment in subsidiary and relevant accounts.

At the Extraordinary Shareholders' Meeting No. 2/2017 held on 29 August 2017, the shareholders passed a resolution to approve QTC Global Power Co., Ltd. ("QTCGP"), a subsidiary, to purchase of entire shares in L Solar 1 Co., Ltd. to invest in a solar power plant project with contracted capacity of 8 megawatt in Kabinburi, Prachinburi province with Loxley Public Co.,Ltd. , Leonics Co., Ltd. and Pacific Tone Investment Limited (the party designated by Col. Prasert Shusang). Total purchase price of Baht 538.01 million comprises of 20,910,475 newly issued common shares of the Company at the value of Baht 12 each (average seven - days market price of the Company's share as at agreement date on 25 July 2017 – net of discount from negotiation) of Baht 250.93 million and cash of Baht 287.09 million. The subsidiary issuing promissory notes due on 15 December 2017 bearing interest rate of 7.50% per annum.

On 20 September 2017, the subsidiary paid for L Solar 1 Co., Ltd.'s common share of Baht 250.93 million, in order that Loxley Public Co., Ltd. and Leonics Co., Ltd. used the same amount to buy the Company's share at agreed quantity and price.

The fair value of the acquired assets and liabilities of L Solar 1 Co., Ltd. as at 30 September 2017, which approximate to the value at the acquisition date of 20 September 2017, are summarised below:

	Baht
Asset	
Cash and cash equivalents	9,696,178
Temporary investments	10,287,088
Trade accounts receivable	25,380,275
Other current assets	22,156,215
Property, plant and equipment - net	373,403,399
Power purchase agreement	119,467,371
Deferred tax asset	29,551,731
Other non - current assets	264,646
Liabilities	
Trade accounts payable	(526,222)
Long-term loan from bank	(171,553,311)
Other current liabilities	(3,674,173)
Deferred tax liabilities	(27,401,084)
Total net asset value	387,052,113
Goodwill in the subsidiary's financial statement	150,959,897
Cash payment for purchase of investment in the indirect subsidiary	538,012,010
<u>Less</u> Cash and cash equivalents of the indirect subsidiary	(9,696,178)
Net cash payment for purchase of investment in the indirect subsidiary	528,315,832

The market price of the Company's share when the subsidiary has control power, higher than the agreement price. Therefore, the goodwill is additionally recognized in the Group consolidated financial statement as follow;

	Baht
Goodwill in the subsidiary's financial statements	150,959,897
Goodwill from the difference of market price and agreement price	
Market price (Baht per share)	14.02
Agreement price (Baht per share)	(12.00)
Difference (Baht per share)	2.02
Number of common share issue to seller	20,910,475
Premium on common share from business combination	42,294,921
Goodwill in the Group's consolidated financial statements	193,254,818

As at 31 December 2017, the Group performed test of goodwill impairment by considering the carrying amount and the recoverable amount of the cash – generating unit (“CGU”) to goodwill from the business combination. After impairment test, the Group therefore, recorded the allowance for impairment of goodwill in consolidated financial statements for the year ended 31 December 2017 of Baht 193.25 million.

(Unit: Baht)

Goodwill	193,254,818
<u>Less</u> Allowance for impairment of goodwill	(193,254,818)
Goodwill - net	<u>-</u>

Subsidiary

Subsidiary is an entity 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 subsidiary are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

3. SIGNIFICANT ACCOUNTING POLICIES

The accounting policies set out below have been applied consistently to all fiscal periods presented in these financial statements.

Foreign currencies

Monetary assets and liabilities denominated in foreign currencies are translated into the functional currency at the exchange rate at the reporting date.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated into the functional currency at the exchange rates at the dates of the transactions.

Foreign currency differences are recognized in profit or loss as incurred.

Foreign subsidiary

The assets and liabilities of foreign subsidiary are translated into Thai Baht at the exchange rates at the reporting date.

The revenues and expenses of foreign subsidiary are translated into Thai Baht at rates approximating the exchange rates at the dates of the transactions.

Foreign exchange differences are recognized as other comprehensive income and presented in cumulated of translation adjustments under shareholder's equity until disposal investment, except to extent that the translation difference is allocated to non-controlling interest.

Cash and cash equivalents

Cash and cash equivalents include cash on hand and highly liquid cash in banks (which do not have restriction of usage) that are readily convertible to cash on maturity date with insignificant risk of change in value.

Related parties

Related parties comprise enterprises and individuals that control, or are controlled by the Company, whether directly or indirectly, or which are under common control with the Company.

They also include associated companies and individuals which directly or indirectly own a voting interest in the Company that gives them significant influence over the Company, key management personnel, directors and officers with authority in the planning and directing the Company's operations.

Trade accounts receivable and allowance for doubtful accounts

Trade accounts receivable are stated at the net realizable value. The Company provides allowance for doubtful accounts equal to the estimated collection losses that may incur in the collection process. The estimated losses are based on historical collection experiences coupled with a review of the current status of receivables.

Inventories

Inventories are stated at the lower of cost or net realizable value. Cost of raw materials are determined using the first-in first-out method. Cost of work in process and finish goods are determined using the specific method for work in process and finish goods Net realizable value is the estimated selling price in the ordinary course of the business less the marginal cost to complete (for work in process) and other estimated costs necessary to make the sale.

Cost consists of purchasing price and other related direct cost, net of discounts and allowances (if any).

Costs of finished goods and work in process consist of raw materials, direct labor, other direct expenses, and overhead which are allocated based on the production process.

The Company sets up allowance for decline value of inventories (if any), based on their status, slow – moving and defectiveness.

Business combinations

Business combinations are accounted for using the acquisition method with the cost of the acquisition being the fair value at the acquisition date of consideration transferred, and the amount of any non-controlling interest in the seller. For each business combination, the Company measures the non-controlling interest, in the acquire either at fair value or at the proportionate share of the seller's identifiable net assets.

Goodwill is measured as the fair value of the consideration transferred including the recognized amount of any non-controlling interest in the acquire, less the net recognized amount (fair value) of the identifiable assets acquired and liabilities assumed, all measured as of the acquisition date.

Cost of business combinations

A contingent liability of the acquire 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 incurs in connection with a business combination, such as legal fees, and professional and other consulting fees are expensed as incurred.

Investment in subsidiary companies

Investment in subsidiary companies in the separate statement of financial position is accounted for by the cost method. The Company recognizes gain or loss on sale of investment in the profit or loss and in the year the investment is sold. In the case of impairment, the Company will recognize loss from impairment as expense immediately in the profit or loss. The Company recognizes dividend income upon the subsidiary's declaration of the payment.

Investment in associated companies

Investment in associated companies in consolidated statement of financial position is accounted for by the equity method, and investment in associated company in the separate statement of financial position is accounted for by the cost method. In the case of impairment, the Company will recognize loss from impairment as expense in the profit or loss. The Company recognizes dividend income upon the associate's declaration of the payment.

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 recognized in profit or loss.

The fair value of financial instruments classified as held-for-trading is determined at 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 is recognized in profit or loss.

If the Company disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

Property, plant and equipment

Recognition and measurement

Property, plant and equipment are stated at cost less accumulated depreciation and impairment losses (If any).

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. 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.

Gains 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 in profit or loss.

Leased assets

Leases in terms of which the Company 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 capitalized 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 part of an item of property, plant and equipment is recognized in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Company, and its cost can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day servicing of property, plant and equipment are recognized 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 property, plant and equipment. The estimated useful lives are as follows:

Land improvements	20 years
Building and factories	10, 20 years
Machinery and factory equipment	5, 10, 20 years
Furniture and office equipment	5, 20 years
Vehicles	5 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.

Impairment

The Group assess whether there is an indication that any asset may be impaired. If any such indication exists, the Group make an estimate of the asset recoverable amount. Where the carrying amount of the asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. Impairment loss is recognized in the statement of profit or loss. An asset recoverable amount is the higher of fair value less costs to sell or value in use.

An impairment loss is recognised if the carrying amount of an asset exceeds its recoverable amount. The impairment loss is recognised in profit or loss.

Power purchase agreement

Power purchase agreement is presented at cost less accumulated amortization. Amortization is calculated by a straight-line basis over the estimated useful lives of 14 years.

Computer software

Computer software is presented at cost less accumulated amortization. Amortization is calculated by a straight-line basis over the estimated useful lives of 5 years.

Interconnection charge

Interconnection charge is presented at cost less accumulated amortization. Amortization is calculated by a straight-line basis over the estimated useful lives of 20 years.

Goodwill

Goodwill represents the future economic benefits arising from a business combination that are not individually identified and separately recognized. Goodwill is carried at cost less allowance for impairment.

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.

Trade and other accounts payable

Trade and other accounts payable are stated at cost.

Revenue

Revenue excludes value added taxes and is arrived at after deduction of trade discounts.

Sales of goods and services rendered

Revenue from sales 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 rendered.

Unbilled accrued income

Sale of electric not yet been billed to the customer are presented as “unbilled accrued income” in the statement of financial position.

Interest income

Interest income is recognized in profit or loss on an accrual basis.

Finance costs

Finance costs comprise interest expense on borrowings, unwinding of the discount on provisions and contingent consideration, losses on disposal of available-for-sale financial assets that are recognized in profit or loss.

Borrowing costs that are not directly attributable to the acquisition, construction or production of a qualifying asset are recognized in profit or loss using the effective interest method.

Income tax

The income tax expense for the year comprises current and deferred income taxes. Current and deferred income taxes are recognized in profit or loss, except to the extent that they relate to items recognized directly in equity or other comprehensive income.

Current income tax

Current income tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantially enacted at the end of the reporting period, and any adjustment to tax payable in respect of earlier years.

Deferred income tax

Deferred income tax is recognized in respect of temporary differences between the carrying amounts of assets and liabilities and the amounts of corresponding items used for income tax computation purpose. Deferred income tax is measured by applying the tax rate to the temporary differences which are expected to be reversed, using tax rate enacted or substantively enacted at the end of the reporting period.

Deferred income tax assets are recognized to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilized. Deferred tax assets are reviewed at the end of each reporting period and reduced to the extent that the related tax benefit will be realized.

Employee benefits

Short-term employment benefits

Salaries, wages, bonuses, contribution to the social security and provident fund, are recognised as expenses when incurred on the accrual basis.

Post-employment benefits (Defined contribution plan)

The Company and its employees have jointly established a provident fund plan whereby monthly contribution are made by employees and by the Company. The fund's assets are held in a separate trustee fund from the Company's assets. The Company's contribution to the fund is recognised as expenses when incurred.

Post - employment benefits (Defined benefit plan)

The Company and its subsidiary have obligations in respect of the severance payment it must make to employee upon retirement under the Labor Law. The Company and its subsidiary treat these severance payment obligations as a defined benefit plan.

The obligations under the defined benefit plan are determined by a professionally qualified independent actuary based on actuarial techniques, using the projected unit credit method.

Actuarial gains or losses for the computation of post-employee benefits is recognized in other comprehensive income.

Long-term leases—where the Company is the lessee

Leases of equipment where the Company assumes substantially all the benefits and risks of ownership are classified as finance leases. Assets under finance leases are capitalized at the fair value or estimated present value of the underlying lease payments, whichever is lower. Each lease payment is allocated between the liability and finance charges so as to achieve a constant rate on the outstanding finance balance. Future lease payments, net of financial charges, are recognized as liabilities under finance lease agreements. The financial charge is recognized in the statement of profit or loss over the lease period. Assets acquired under finance lease agreements are depreciated over their useful lives.

Leases of assets under which all the risks and benefits of ownership are effectively retained by the lessor are classified as operating leases. Payments made under operating leases are recognized in the statement of profit or loss on a straight – line basis over the lease period. When an operating lease is terminated before the expiry date of the lease period, any payment required to be made to the lessor by way of penalty is recognized as an expense in the period in which termination takes place.

Determining whether an arrangement contains a lease

At inception of an arrangement, the Company determines whether such an arrangement is or contains a lease. A specific asset is the subject of a lease if fulfilment of the arrangement is dependent on the use of that specified asset. An arrangement conveys the right to use the asset if the arrangement conveys to the Company the right to control the use of the underlying asset.

Segment reporting

Segment results that are reported to the Company'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.

Profit or loss from discontinued operations

A discontinued operation is a component of the Group that either has been disposed of, or is classified as held for sale. Profit or loss from discontinued operations comprises the profit or loss before and after tax of discontinued operations and disposal of assets classified as held for sale.

Basic earnings per share

The Company presents basic earnings (loss) per share for its common shares. Basic earnings (loss) per share is calculated by dividing the profit or loss attributable to common shareholders of the Company by the weighted average number of common shares outstanding during the period.

Diluted earnings per share

Diluted earnings (loss) per share is calculated by dividing the profit (loss) for the year by number of common shares and the number of equivalent common shares (warrant) by weighting based on the period of time as if there were conversion of common shares at the issued date of issuance of equivalent common shares.

A calculation is done to determine the potential number of shares that could have been acquired at market price (determine as the average share price of the Company's shares during the period) based on the outstanding warrants to determine the number of potential common shares to be additionally issued. The potential shares are added to the outstanding ordinary shares but no adjustment is made to profit or loss for the period.

Dividend payment

Dividend payment is recorded in the financial statements in the period in which they are approved by the Shareholders or Board of Directors of the Company.

Use of accounting estimates

When preparing the financial statements, management undertake judgments, estimates and assumptions about recognition and measurement of assets, liabilities, income and expenses. The actual results may differ from the judgments, estimates and assumptions made by management.

4. CRITICAL ACCOUNTING ESTIMATES, ASSUMPTION AND JUDGMENT AND CAPITAL RISK MANAGEMENT

4.1 Critical accounting estimates, assumption and judgments

4.1.1 Impairment of trade accounts receivables

The Company sets an allowance for doubtful accounts to reflect impairment of trade accounts receivable resulting from possible non-collection of receivable. The allowance is based on a review of aging status of outstanding receivables at reporting date with the status of each customer.

4.1.2 Allowance for obsolete and decline value of inventories

The Company provides an allowance for obsolete and decline value of inventories (if any) to reflect impairment of inventories. The allowance is based on the consideration of inventory turnovers, the period of outstanding and the comparison with market value.

4.1.3 Plant, equipment and computer program

Management determines the estimated useful lives and residual values of the Company's plant, equipment and computer software and will revise the depreciation charge where useful lives and residual values previously estimated have changed or subject to be written down for their technical obsolescence or if they are no longer in used.

4.1.4 Impairment of investment

The Company treats investments as impaired when there been a significant or prolonged decline in their fair value. The determination of what is "significant" or "prolonged" requires management judgment.

4.1.5 Goodwill

The initial recognition and measurement of goodwill and subsequent impairment testing, require management to make estimates of cash flows to be generated by asset or the cash generated by the asset or the cash generating unit and to choose a suitable discount rate in order to calculate the present value of those cash flows.

4.1.6 Post-employment benefits

The employee benefits obligation for employee retirement in compliance the Thai labour law is measured, using the projected unit credit method in accordance with Actuarial Technique for the present value of the estimated future cash outflows based on the interest rates of government securities, which terms to maturity approximate the terms of the related obligations and consider based on salary, turnover rate, mortality rate, length of service and others.

4.1.7 Deferred tax assets

The extent to which deferred tax assets can be recognized is based on an assessment of the probability of the Company future taxable income against which the deductible temporary differences can be utilized. In addition, management judgment is required in assessing the impact of any legal or economic limits or uncertainties in various tax jurisdictions.

4.1.8 Provision for warranty expense

A provision for warranties is recognised when the underlying products or services are sold. The provision is based on historical warranty data and a weighting of all possible outcomes against their associated probabilities.

4.2 Capital risk management

The Company's objectives in the management of capital is to safeguard its ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders, and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Company may adjust the amount of dividends payment for shareholders, return capital, issue new shares, or sell assets to reduce debts.

5. CASH AND CASH EQUIVALENTS

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Cash on hand	27,123,423	83,254	27,091,791	61,328
Cash at banks - current accounts	22,984,172	28,711,863	9,283,337	14,240,899
Cash at banks - saving accounts	68,681,528	62,197,778	33,318,471	30,507,927
Total	118,789,123	90,992,895	69,693,599	44,810,154

The currency denomination of cash and cash equivalents as at 31 December 2018 and 2017 are as follows:

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
THB	104,447,195	75,889,432	69,607,162	44,721,270
AUD	86,437	88,884	86,437	88,884
LAK	14,255,491	15,014,579	-	-
Total	118,789,123	90,992,895	69,693,599	44,810,154

6. TEMPORARY INVESTMENTS

Movements during the years ended 31 December 2018 and 2017 are as follow:

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Balance as at 1 January	378,848,818	221,867,629	378,540,803	221,867,629
<u>Add</u> Addition investment	858,102,000	523,500,000	734,100,000	523,500,000
Addition from business combination	-	10,287,088	-	-
<u>Less</u> Disposal	(774,240,374)	(376,847,438)	(763,940,374)	(366,867,629)
Gain on sales during the year	765,438	-	757,420	-
Unrealized gain on change in value	2,864,938	41,539	2,411,206	40,803
Balance as at 31 December	<u>466,340,820</u>	<u>378,848,818</u>	<u>351,869,055</u>	<u>378,540,803</u>

The Group has temporary investment in open-end mutual fund which yields more return than general saving deposits. The said investments do not have any restriction for redemption.

7. TRADE ACCOUNTS RECEIVABLE AND UNBILLED ACCRUED INCOME – NET

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Other parties	286,408,856	304,339,484	259,688,788	280,095,203
Related parties	702,134	1,836,548	702,134	1,836,548
Total	<u>287,110,990</u>	<u>306,176,032</u>	<u>260,390,922</u>	<u>281,931,751</u>
<u>Less</u> allowance for doubtful accounts	(30,652,467)	(23,372,875)	(30,652,467)	(23,372,875)
Net	<u>256,458,523</u>	<u>282,803,157</u>	<u>229,738,455</u>	<u>258,558,876</u>

The outstanding balance of trade accounts receivable and unbilled account income as at 31 December 2018 and 2017 are classified by ages as follows:

			(Unit : Baht)	
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
<u>Trade accounts receivable and unbilled accrued income</u>				
<u>– general customers – net</u>				
Not yet due	171,530,466	137,782,136	157,611,823	125,202,381
Past due :				
Less than 3 months	71,802,093	93,201,282	59,000,668	81,536,756
3 – 6 months	4,603,540	28,076,181	4,603,540	28,076,181
6 – 12 months	7,489,660	20,387,830	7,489,660	20,387,830
Over 12 months	30,983,097	24,892,055	30,983,097	24,892,055
Total	286,408,856	304,339,484	259,688,788	280,095,203
<u>Less</u> Allowance for doubtful accounts	(30,652,467)	(23,372,875)	(30,652,467)	(23,372,875)
Net	255,756,389	280,966,609	229,036,321	256,722,328
<u>Trade accounts receivable – related companies</u>				
Not yet due	261,294	1,593,872	261,294	1,593,872
Past due :				
Less than 3 months	440,840	242,676	440,840	242,676
Total	702,134	1,836,548	702,134	1,836,548

The normal credit term granted by the Group company ranges from 30 days to 90 days.

The currency denomination of trade accounts receivable and unbilled accrued income as at 31 December 2018 and 2017 are as follows:

			(Unit : Baht)	
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
THB	272,561,534	274,578,242	245,841,466	250,333,961
USD	1,848,800	19,248,524	1,848,800	19,248,524
AUD	12,700,656	12,349,266	12,700,656	12,349,266
Total	287,110,990	306,176,032	260,390,922	281,931,751

The Company has movements in allowance for doubtful accounts of trade accounts receivable for the years ended 31 December 2018 and 2017 are as follow:

	(Unit : Baht)	
	Consolidated and Separate F/S	
	2018	2017
Balance as at 1 January	23,372,875	19,116,194
Additional allowance during the year	14,180,312	8,403,741
Reversal during the year	(6,900,720)	(4,147,060)
Balance as at 31 December	30,652,467	23,372,875

8. RELATED PARTY TRANSACTIONS

The Company has certain business transactions with its related companies which are related through common shareholding and/or management. Such transactions are made under the conditions and terms of general trade practice with prices approximate the market.

Relationships with key management and other related parties were as follows:

Related parties	Relationship
Green Earth Power (Thailand) Co., Ltd.	Indirect associated company (until on 31 March 2018)
Q.T.C. Services Chiang Mai Co., Ltd.	Co - relative of director of the Company
PPWE Co., Ltd.	Associated company

The significant business transactions with related parties for the years ended 31 December 2018 and 2017 are as follow:

		(Unit : Baht)			
		Consolidated F/S		Separate F/S	
		For the years ended 31 December			
	Pricing Policy	2018	2017	2018	2017
Sales of goods					
Related company	Market prices	3,880,700	6,684,500	3,880,700	6,684,500
Other Income					
Subsidiary company	Agreed price	-	-	518,400	518,400
Interest income					
Subsidiary company	4.0% per annum	-	-	7,209,841	6,302,871
Associated company	5.5% per annum	901,548	946,092	901,548	927,014
Total		901,548	946,092	8,111,389	7,229,885
Administrative expense					
Related company	Agreed price	13,500	153,500	13,500	153,500
Key management personnel compensation					
Current employment benefits		22,661,950	20,734,200	20,861,950	20,734,200
Post-employment benefits		476,727	442,788	339,076	311,845
Total		23,138,677	21,176,988	21,201,026	21,046,045

Significant balances with related parties as at 31 December 2018 and 2017, are as follows:

		(Unit : Baht)			
		Consolidated F/S		Separate F/S	
		2018	2017	2018	2017
<u>Trade accounts receivable - related company</u>					
Related company		702,134	1,836,548	702,134	1,836,548
<u>Other accounts receivable - related companies</u>					
Subsidiary company		-	-	1,036,800	6,821,271
Associated company		156,110	1,348,271	156,110	1,329,192
Total		156,110	1,348,271	1,192,910	8,150,463

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
<u>Loans to related companies – net</u>				
Subsidiary company	-	-	-	654,100,000
Associated company	14,000,000	17,000,000	14,000,000	17,000,000
Indirect associated company	-	870,454	-	-
Total	14,000,000	17,870,454	14,000,000	671,100,000
<u>Less</u> Allowance for doubtful account for loan to related companies	(7,098,123)	-	(7,098,123)	(54,352,422)
Loans to related companies - net	6,901,877	17,870,454	6,901,877	616,747,578
<u>Other account payable – related company</u>				
Related company	12,626	19,260	12,626	19,260
<u>Liabilities under employee benefits obligation</u>				
Post-employment benefits - key management	3,357,749	2,827,370	3,090,864	2,696,428

As at 31 December 2017, the Company has loan to subsidiary of Baht 654.10 million bearing interest at 4.00% per annum and no collateral. As at 31 December 2018, the Company already received in full amount.

As at 31 December 2018 and 2017, the Company has loan to associated company of Baht 14.00 million and Baht 17.00 million, respectively, bearing interest at 5.50% per annum and no collateral. However, the Company has no any intention to call for repayment this loan within 1 year period in order to support working capital of said associated company.

As at 31 December 2017, the subsidiary company has loan to indirect associated company of Baht 0.87 million, bearing interest at 5.00% per annum and no collateral. The subsidiary company will call up for repayment when the indirect associated company has profit from operation.

Movements in loan to related companies for the years ended 31 December 2018 and 2017 are as follows:

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Balance as at 1 January	17,870,454	17,000,000	671,100,000	17,000,000
<u>Add</u> Increase of loan during the year	-	870,454	-	654,100,000
<u>Less</u> Receive payment of loan during the year	(3,870,454)	-	(657,100,000)	-
Balance as at 31 December	14,000,000	17,870,454	14,000,000	671,100,000

The Company has movements in allowance for doubtful account for loan to related companies for the years ended 31 December 2018 and 2017 as follow:

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Balance as at 1 January	-	-	54,352,422	-
Allowance for doubtful account during the year	7,098,123	-	7,098,123	54,352,422
Reversal allowance for doubtful account during the year	-	-	(54,352,422)	-
Balance as at 31 December	7,098,123	-	7,098,123	54,352,422

9. INVENTORIES – NET

	(Unit : Baht)	
	Consolidated and Separate F/S	
	2018	2017
Raw materials	77,318,399	70,896,414
Work in process	18,719,195	10,699,370
Finished goods	91,379,485	71,279,074
Goods in transit	31,420	3,094,979
Total	187,448,499	155,969,837
<u>Less</u> Allowance for obsolete and decline value of inventories	(12,195,469)	(4,820,135)
Inventories – net	175,253,030	151,149,702

The Company has movements in allowance for obsolete and decline value of inventories for the years ended 31 December 2018 and 2017 as follows :

	(Unit : Baht)	
	Consolidated and Separate F/S	
	2018	2017
Balance as at 1 January	4,820,135	9,817,782
Write - down to net realizable value	13,951,226	3,550,555
Reversal of write - down	(6,575,892)	(8,548,202)
Balance as at 31 December	12,195,469	4,820,135

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	For the years ended 31 December			
	2018	2017	2018	2017
Inventories recognized as an expense				
in cost of sales of goods:				
- Cost of goods sold	728,524,827	750,369,828	681,594,636	737,542,627
- Write - down to net realizable				
value	13,951,226	3,550,555	13,951,226	3,550,555
- Reversal of write - down	(6,575,892)	(8,548,202)	(6,575,892)	(8,548,202)
Net	735,900,161	745,372,181	688,969,970	732,544,980

10. RESTRICTED DEPOSIT AT BANK

As at 31 December 2018 and 2017, the indirect subsidiary's deposit of Baht 21.31 million and Baht 21.12 million, respectively is restricted for usage from the pledge as collaterals for ban from a commercial bank as mentioned in Note 19.

11. INVESTMENTS IN SUBSIDIARIES - NET

Name of entities	Type of business	Separate F/S				(Unit : Baht)
		Paid-up share capital		Percentage of shareholding	Cost method	
		2018	2017			
<u>Direct subsidiary</u>						
QTC – Panco Co., Ltd.	Distributing electric transformer	21,947,200	21,947,200	85.00	18,655,120	18,655,120
QTC Global Power Co., Ltd.	Investing in renewable energy	700,000,000	140,000,000	99.99	699,999,970	139,999,970
Total					<u>718,655,090</u>	<u>158,655,090</u>
<u>Less Allowance for impairment of investment in subsidiary companies</u>						
					<u>(150,362,446)</u>	<u>(143,799,970)</u>
Net					<u>568,292,644</u>	<u>14,855,120</u>

On 22 March 2018, the Company has additionally invested in subsidiary company (QTC Global Power Co., Ltd.) by Baht 560.00 million, which the subsidiary company increase its registered capital of Baht 560.00 million from the registered capital of Baht 140.00 million to Baht 700.00 million, by issuing 56.00 million common shares at par value of Baht 10.00. The subsidiary registered the share capital increment with the Department of Business Development on 22 March 2018.

The Company has movement in allowance for impairment of investment in subsidiaries for the years ended 31 December 2018 and 2017 are as follow:

	(Unit :Baht)	
	Separate F/S	
	2018	2017
Balance as at 1 January	143,799,970	2,000,000
Addition allowance for impairment during the year	6,562,476	141,799,970
Balance as at 31 December	150,362,446	143,799,970

On 10 August 2018, the subsidiary company, QTC – Panco Co., Ltd., ceases its operation and plan for dissolution. As at 31 December 2018, the subsidiary company has net asset value at 85% shareholding by the Company of Baht 11.94 million, less than book value of investment – cost method by Baht 6.72 million. The Company therefore, additionally recorded allowance for impairment of investment amounted Baht 2.92 million.

As at 31 December 2018, the Company tests impairment of investment in subsidiary (QTC Global Power Co., Ltd.) and considers to record the additional allowance for impairment of said investment of Baht 3.65 million.

12. INVESTMENTS IN ASSOCIATED COMPANIES - NET

	Type of business	Paid-up share capital		Percentage of shareholding		Consolidated F/S		(Unit : Baht)	
		2018	2017	2018	2017	2018	2017	2018	2017
						Cost method	Equity method		
<u>Direct associated company</u>									
PPWE Co., Ltd.	Production and distribution of electric power by alternative energy	1,000,000	1,000,000	49.98	49.98	499,800	-	-	-
<u>Less Allowance for impairment of investment on associated company</u>						(499,800)	-	-	-
<u>Net</u>						-	499,800	-	-
<u>Indirect associated company</u>									
Green Earth Power (Thailand) Co., Ltd.	Renewable energy	-	125,755,800	-	15.00	-	269,052,890	-	271,776,126
<u>Less Share payable</u>						-	(61,733,421)	-	(61,733,421)
<u>Net</u>						-	207,319,469	-	210,042,705
<u>Total investments in associated companies</u>						-	207,819,269	-	210,042,705

	Type of business	Paid-up share capital		Percentage of shareholding		Separate F/S		(Unit : Baht)	
		2018	2017	2018	2017	2018	2017	2018	2017
						Cost method			
<u>Direct associated company</u>									
PPWE Co., Ltd.	Production and distribution of electric power by alternative energy	1,000,000	1,000,000	49.98	49.98	499,800	499,000	-	-
<u>Less Allowance for impairment of investment on associated company</u>						(499,800)	-	-	-
<u>Net</u>						-	499,800	-	-

Movements in investment in associated companies during the years ended 31 December 2018 and 2017 are as follows:

	(Unit : Baht)			
	Consolidated F/S (Equity Method)		Separate F/S (Cost Method)	
	2018	2017	2018	2017
Balance as at 1 January	210,042,705	-	499,800	499,800
<u>Add</u> Investment during the year – cost	-	269,052,890	-	-
Additional payment in accordance with share purchase agreement	6,000,000	-	-	-
Equity in net profit (loss) associated companies	(1,027,387)	2,723,236	-	-
<u>Less</u> Impairment loss of investment	-	-	(499,800)	-
Loss from disposal of investment during the year	(19,695,061)	-	-	-
Proceeds from sale of investment during the year	(195,320,257)	-	-	-
Balance as at 31 December	-	271,776,126	-	499,800
<u>Less</u> Share payable	-	(61,733,421)	-	-
Net	-	210,042,705	-	499,800

On 9 December 2016, QTC Global Power Co., Ltd., (“QTCGP”), a subsidiary, entered into a memorandum of share purchase agreement with 2 companies which are incorporated in Singapore. Those companies have investment in Green Earth Power (Thailand) Co., Ltd. (“GEP Thailand”) who invested in GEP (Myanmar) Company Limited (“GEP Myanmar”), a renewable energy company incorporated in Myanmar. The subsidiary will purchase 15% of the shareholding in said company with totally amount of USD 7.63 million, the subsidiary has paid a refundable deposit of USD 2.25 million (equivalent to Baht 81.11 million) for participating in feasibility process of the renewable energy project.

On 31 March 2017, QTCGP has entered into purchase shares agreement with 2 companies with the conditions precedent for and subsequent to the transaction.

On 23 August 2017, Green Earth Power (Thailand) Co., Ltd. increased its registered share capital by Baht 100,000,000 at par value of Baht 100 per share from old share capital of Baht 25,755,800 to Baht 125,755,800 which registered the share capital increment with the Department of Business Development. Green Earth Power (Thailand) Co., Ltd. called for partially paid up share capital of Baht 31,000,000. The subsidiary has paid-up share capital of Baht 4,650,000 (at 15% shareholding). The subsidiary has mortgaged its share certificates of 113,180 shares (60% of total shares held by the subsidiary), totalling amount of Baht 11,318,000 to pledge as collaterals for construction in the project.

As at 31 December 2017, the subsidiary has payable for investment in associated company amounting to USD 1.88 million (equivalent to Baht 61.73 million).

On 31 January 2018, Green Earth Power (Thailand) Co., Ltd. cannot complete the subsequent conditions which subsidiary extended the due date to 31 January 2018. Then, the subsidiary exercise the right to sell shares of said company back to the sellers under the Share Purchase Agreement amount to USD 5.75 million and Baht 5.52 million.

During the year 2018, Green Earth Power (Thailand) Co., Ltd. called for addition paid up share capital of Baht 40.00 million. The subsidiary has paid-up share capital of Baht 6.00 million (at 15% shareholding) under the share purchase agreement's condition. The subsidiary received proceeds from disposal the investment in indirect associated company amount of Baht 195.32 million.

13. ASSETS HELD FOR DISCONTINUED OPERATIONS

As at 10 August 2018, the subsidiary's management resolved to cease its operations and plan for dissolution since it was concluded that business may no longer reach its commercial worthiness.

Details of the financial position and operating result of subsidiary company included in the consolidated financial statements as follows :

	(Unit : Baht)
	Consolidated F/S
	2018
Assets	
Cash and cash equivalent	14,255,491
Other current asset	7,990
Assets held for discontinued operations	14,263,481
Liability	
Other current liability	216,520
Liability held for discontinued operations	216,520

	(Unit :Baht)	
	Consolidated F/S	
	For the year ended 31 December	
	2018	2017
Operating result of discontinued operations		
Other revenue	16,529	7,119
Expenses	(3,103,604)	(404,072)
Loss for the year of discontinued operations	(3,087,075)	(396,953)

14. PROPERTY, PLANT AND EQUIPMENT – NET

	Consolidated F/S						(Unit : Baht)
				Machinery			
	Land	Land improvements	Building and factories	Machinery and factory equipment	Furniture and office equipment	Vehicle	and equipment under installation
							Total
Cost							
1 January 2017	31,089,980	2,486,074	168,852,585	258,246,499	44,452,350	33,664,171	555,273,451
Fair value adjustment	56,895,564	(4,211,714)	(4,572,881)	(206,554,097)	-	-	(158,443,128)
Addition from business combination	18,104,436	20,929,600	24,488,076	677,604,114	-	-	741,126,226
Acquisitions	-	258,290	3,134,525	16,169,370	1,467,703	4,679,000	61,286,212
Disposals	-	-	(82,898)	(937,642)	(537,364)	(11,059,135)	(12,617,039)
Transfer in / (out)	-	-	1,565,565	16,719,108	53,070	-	(18,337,743)
Exchange rate differences from conversion	-	-	-	(382,800)	-	-	(382,800)
foreign currency financial statements	-	-	-	-	-	-	-
31 December 2017	106,089,980	19,462,250	193,384,972	760,864,552	45,435,759	27,284,036	1,186,242,922
Acquisitions	-	-	4,401,139	10,105,941	5,705,998	2,451,000	72,076,812
Disposals	-	-	-	(6,625,572)	(1,080,108)	(4,888,795)	(12,594,475)
Transfer in / (out)	-	-	20,909,584	36,167,677	151,500	-	-
Exchange rate differences from conversion	-	-	-	(76,560)	-	-	(76,560)
foreign currency financial statements	-	-	-	-	-	-	-
31 December 2018	106,089,980	19,462,250	218,695,695	800,436,038	50,213,149	24,846,241	1,245,648,699
Accumulated depreciation							
1 January 2017	-	47,808	57,608,182	130,589,892	34,166,971	25,655,896	248,068,749
Addition from business combination	-	5,972,150	7,087,704	201,054,042	-	-	214,113,896
Depreciation for the year	-	375,368	15,119,774	23,343,111	4,140,767	4,038,534	47,017,554
Depreciation for disposals	-	-	(54,178)	(327,039)	(481,130)	(11,057,616)	(11,919,963)
31 December 2017	-	6,395,326	79,761,482	354,660,006	37,826,608	18,636,814	497,280,236
Depreciation for the year	-	44,413	12,632,324	43,994,274	4,079,640	2,873,113	63,623,764
Depreciation for disposals	-	-	-	(2,149,516)	(450,603)	(4,863,636)	(7,463,755)
31 December 2018	-	6,439,739	92,393,806	396,504,764	41,455,645	16,646,291	553,440,245

(Unit : Baht)

Consolidated F/S

	Land	Land improvements	Building and factories	Machinery and factory equipment	Furniture and office equipment	Vehicle	Machinery and equipment under installation	Total
<u>Allowance for impairment</u>								
1 January 2018	-	-	-	-	-	-	-	-
Allowance for impairment for the year (Administrative expense)	-	-	-	2,909,280	-	-	-	2,909,280
31 December 2018	-	-	-	2,909,280	-	-	-	2,909,280
<u>Net book value</u>								
31 December 2017	106,089,980	13,066,924	113,623,490	406,204,546	7,609,151	8,647,222	33,721,373	688,962,686
31 December 2018	106,089,980	13,022,511	126,301,889	401,021,994	8,757,504	8,199,950	25,905,346	689,299,174
<u>Depreciation for the year 2017</u>								
Cost of sales								32,764,287
Administrative expense								14,253,267
Total								47,017,554
<u>Depreciation for the year 2018</u>								
Cost of sales								50,321,583
Administrative expense								13,302,181
Total								63,623,764

The indirect subsidiary has pledged land including construction and solar power plant thereon, as collaterals for the loan from bank (Note 19).

The gross amount of the Company's fully depreciated property, plant and equipment that are still in use as at 31 December 2018, amounted to Baht 118.01 million (2017: Baht 119.81 million).

(Unit : Baht)

Separate F/S

Cost

	Land	Land improvements	Building and factories	Machinery and factory equipment	Furniture and office equipment	Vehicle	Machinery and equipment under installation	Total
1 January 2017	31,089,980	2,486,074	168,852,585	254,877,859	44,452,350	33,664,171	16,481,792	551,904,811
Acquisitions	-	258,290	3,134,525	15,769,121	1,290,049	2,621,000	35,577,324	58,650,309
Disposals	-	-	(82,898)	(937,642)	(537,364)	(11,059,135)	-	(12,617,039)
Transfer in / (out)	-	-	1,565,565	16,719,108	53,070	-	(18,337,743)	-
31 December 2017	31,089,980	2,744,364	173,469,777	286,428,446	45,258,105	25,226,036	33,721,373	597,938,081
Acquisitions	-	-	4,401,139	10,072,813	5,448,892	2,451,000	49,412,734	71,786,578
Disposals	-	-	-	(6,625,572)	(471,928)	(4,888,795)	-	(11,986,295)
Transfer in / (out)	-	-	20,909,584	36,167,677	151,500	-	(57,228,761)	-
31 December 2018	31,089,980	2,744,364	198,780,500	326,043,364	50,386,569	22,788,241	25,905,346	657,738,364

Accumulated depreciation

1 January 2017	-	47,809	57,608,181	130,589,892	34,166,971	25,655,896	-	248,068,749
Depreciation for the year	-	42,518	10,199,924	23,227,547	4,091,897	3,746,468	-	41,308,354
Depreciation for disposals	-	-	(54,178)	(327,039)	(481,130)	(11,057,616)	-	(11,919,963)
31 December 2017	-	90,327	67,753,927	153,490,400	37,777,738	18,344,748	-	277,457,140
Depreciation for the year	-	44,413	11,304,952	24,364,352	3,182,145	2,873,113	-	41,768,975
Depreciation for disposals	-	-	-	(2,149,516)	(450,603)	(4,863,636)	-	(7,463,756)
31 December 2018	-	134,740	79,058,879	175,705,236	40,509,280	16,354,225	-	311,762,360

Net book value

31 December 2017	31,089,980	2,654,037	105,715,850	132,938,046	7,480,367	6,881,288	33,721,373	320,480,941
31 December 2018	31,089,980	2,609,624	119,721,621	150,338,128	9,877,289	6,434,016	25,905,346	345,976,004

Depreciation for the year 2017

(Unit : Baht)

Separate F/S

	Land	Land improvements	Building and factories	Machinery and factory equipment	Furniture and office equipment	Vehicle	Machinery and equipment under installation	Total
Cost of sales								27,513,772
Administrative expense								13,794,582
Total								<u>41,308,354</u>
Depreciation for the year 2018								
Cost of sales								29,689,748
Administrative expense								12,079,227
Total								<u>41,768,975</u>

The gross amount of the Company's fully depreciated property, plant and equipment that are still in use as at 31 December 2018, amounted to Baht 117.36 million (2017: Baht 115.81 million).

15. COMPUTER SOFTWARE – NET

		(Unit : Baht)
	Consolidated F/S	Separate F/S
<u>Cost</u>		
At 1 January 2017	17,807,940	17,807,940
Addition from business combination	415,140	-
Acquisitions	554,702	524,702
Disposals	(153,580)	(153,580)
At 31 December 2017	18,624,202	18,179,062
Acquisitions	527,231	484,260
Disposals	(33)	(3)
At 31 December 2018	19,151,400	18,663,319
<u>Amortisation and impairment losses</u>		
At 1 January 2017	(11,271,980)	(11,271,980)
Addition from business combination	(248,830)	-
Amortisation for the year (administrative expenses)	(1,754,234)	(1,735,350)
Amortisation for disposals	153,550	153,550
At 31 December 2017	(13,121,494)	(12,853,780)
Amortisation for the year (administrative expenses)	(1,841,528)	(1,789,110)
At 31 December 2018	(14,963,022)	(14,642,890)
<u>Net book value</u>		
At 31 December 2017	5,502,708	5,325,282
At 31 December 2018	4,188,378	4,020,429

16. INTERCONNECTION CHARGE – NET

	(Unit : Baht)
	Consolidated F/S
<u>Cost</u>	
At 1 January 2017	-
Addition from business combination	6,588,543
At 31 December 2017	6,588,543
Acquisitions	-
At 31 December 2018	6,588,543
<u>Amortisation</u>	
At 1 January 2017	-
Addition from business combination	(1,920,605)
Amortisation for the year (cost of sales)	(83,034)
At 31 December 2017	(2,003,639)
Amortisation for the year (cost of sales)	(329,427)
At 31 December 2018	(2,333,066)
<u>Net book value</u>	
At 31 December 2017	4,584,904
At 31 December 2018	4,255,477

The indirect subsidiary paid the interconnection charge into the project of the indirect subsidiary company to Provincial Electricity Authority (PEA). The ownership of the interconnection is belonging to the PEA and the indirect subsidiary has the right to use it.

17. POWER PURCHASE AGREEMENT – NET

	(Unit : Baht)
<u>Cost</u>	Consolidated F/S
At 1 January 2017	-
Addition from business combination	119,467,371
At 31 December 2017	119,467,371
Acquisitions	-
At 31 December 2018	119,467,371
<u>Amortisation</u>	
At 1 January 2017	-
Amortisation for the year (cost of sales)	(2,108,180)
At 31 December 2017	(2,108,180)
Amortisation for the year (cost of sales)	(8,452,651)
At 31 December 2018	(10,560,831)
<u>Net book value</u>	
At 31 December 2017	117,359,191
At 31 December 2018	108,906,540

On 25 June 2010, the indirect subsidiary had entered into the power purchase agreement with PEA by specified quality which start sale power in June 2012. The agreement is for the period of 5 years start from agreement date and can be renewable ever 5 years. Moreover, the indirect subsidiary has passed the inspection and quality certification by PEA and start to sale power to PEA since such date.

18. SHORT-TERM LOANS FROM BANK

	(Unit : Baht)			
	Interest rate per annum		Consolidated F/S and Separate F/S	
	31 December 2018	31 December 2017	30 December 2018	31 December 2017
Liabilities under trust receipt agreements	4.07 - 4.39	2.95 - 3.85	57,082,000	84,567,278
Promissory notes	3.30 - 4.75	3.10 - 3.12	145,000,000	235,987,000
Total			202,082,000	320,554,278

As at 31 December 2018 and 2017, the Group has outstanding credit facilities in form of bank overdrafts, promissory note, liabilities under trust receipt agreements, letter of credit, forward exchange contracts, the assignment of collection under customer letters of credit and others totaling Baht 160.10 million and Baht 463.18 million, respectively.

19. LONG-TERM LOAN FROM BANKS

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Balance as at 1 January	156,240,000	-	-	-
<u>Add</u> Addition loan during the year	15,039,346	-	15,039,346	-
Addition from business combination	-	171,553,311	-	-
<u>Less</u> Repayments during the year	(71,740,000)	(15,313,311)	(4,900,000)	-
Balance as at 31 December	99,539,346	156,240,000	10,139,346	-
<u>Less</u> Current portion within one year	(75,240,000)	(66,840,000)	(8,400,000)	-
Long-term loans from banks - net	24,299,346	89,400,000	1,739,346	-

As at 31 December 2018, the Company has loan from bank of Baht 10.14 million with bearing interest rate of MLR-1.50% per annum for twelve months after the first drawdown and bearing interest rate per annum of MLR-1.00% for the remaining periods. This loan is repayable approximately Baht 0.70 million per month, starting the first repayment in June 2018 and the last payment in June 2020.

As at 31 December 2018 and 2017, the indirect subsidiary has long-term loan from bank of Baht 89.40 million and Baht 156.24 million, respectively, bearing interest rate of MLR-1.50%. This loan is repayable approximately Baht 5.57 million per month, starting the first repayment in May 2012 and the last payment in April 2020. This loan is collateralized by the mortgages of the indirect subsidiary's land include structure and solar power plant, thereon as mentioned in Note 14. And transferring right to withdrawn in bank account as mentioned in Note 10 also transferring right from the receiving under the power purchase agreement as mentioned in Note 17.

20. INCOME TAX

20.1 The movements in deferred income tax assets / liabilities for the years ended 31 December 2018 and 2017 are as follows:

(Unit : Baht)

	Consolidated F/S			
	Charged as income / (expense) in			
	1 January 2018	Profit or loss	Other comprehensive income	31 December 2018
Deferred income tax assets				
From allowance for doubtful accounts	4,674,575	1,455,918	-	6,130,493
From allowance for obsolete and decline value of inventories	964,027	1,475,067	-	2,439,094
From accumulated depreciation for plant and equipment	197,923	5,954	-	203,877
From provision for warranty expenses	931,193	57,689	-	988,882
From employee benefits obligation	1,908,082	260,535	-	2,168,617
From taxable loss carried forward not exceeding 5 years	22,079,250	(22,079,250)	-	-
From temporary differences from business combination - revaluation of land improvement, building improvement and machinery	29,551,731	-	-	29,551,731
From translation adjustment	368,499	-	90,888	459,387
Total	60,675,280	(18,824,087)	90,888	41,942,081
Deferred income tax liability				
From temporary differences from business combination - revaluation of land	11,379,112	-	-	11,379,112
From power purchase agreement	16,021,972	(1,412,703)	-	14,609,269
Total	27,401,084	(1,412,703)	-	25,988,381
Deferred tax assets - net	33,274,196	(17,411,384)	90,888	15,953,700

(Unit : Baht)

	Consolidated F/S				
	Charged as income / (expense) in				
	1 January 2017	Addition from business combination	Profit or loss	Other comprehensive income	31 December 2017
Deferred income tax assets					
From allowance for doubtful accounts	3,823,239	-	851,336	-	4,674,575
From allowance for obsolete and decline value of inventories	1,963,557	-	(999,530)	-	964,027
From accumulated depreciation for plant and equipment	218,706	-	(20,783)	-	197,923
From provision for warranty expenses	749,767	-	181,426	-	931,193
From employee benefits obligation	821,345	-	240,430	846,307	1,908,082
From taxable loss carried forward not exceeding 5 years	16,640,682	-	5,438,568	-	22,079,250
From temporary differences from business combination - revaluation of land improvement, building improvement and machinery	-	29,551,731	-	-	29,551,731
From translation adjustment	-	-	-	368,499	368,499
Total	24,217,296	29,551,731	5,691,447	1,214,806	60,675,280
Deferred income tax liability					
From liabilities under finance lease agreements	208,386	-	(208,386)	-	-
From temporary differences from business combination - revaluation of land	-	11,379,112	-	-	11,379,112
From power purchase agreement	-	16,021,972	-	-	16,021,972
From translation adjustment	88,570	-	-	(88,570)	-
Total	296,956	27,401,084	(208,386)	(88,570)	27,401,084
Deferred tax assets - net	23,920,340	2,150,647	5,899,833	1,303,376	33,274,196

(Unit : Baht)

	Separate F/S		
	Charged as income / (expense) in		
	1 January 2018	Profit or loss	Other comprehensive income
			31 December 2018
Deferred income tax assets			
From allowance for doubtful accounts	4,674,575	1,455,918	-
From allowance for obsolete and decline value of inventories	964,027	1,475,067	-
From impairment of investment subsidiary company	760,000	583,040	-
From accumulated depreciation for plant and equipment	197,923	5,954	-
From provision for warranty expenses	931,193	57,689	-
From employee benefits obligation	1,908,082	260,535	-
From taxable loss carried forward not exceeding 5 years	21,719,250	(21,719,250)	-
Total	31,155,050	(17,881,047)	-
Deferred tax assets - net	31,155,050	(17,881,047)	-

(Unit : Baht)

	Separate F/S		
	Charged as income / (expense) in		
	1 January 2017	Profit or loss	Other comprehensive income
			31 December 2017
Deferred income tax assets			
From allowance for doubtful accounts	3,823,239	851,336	-
From allowance for obsolete and decline value of inventories	1,963,557	(999,530)	-
From allowance for impairment on investment in subsidiary	400,000	360,000	-
From accumulated depreciation for plant and equipment	218,706	(20,783)	-
From provision for warranty expenses	749,767	181,426	-
From employee benefits obligation	821,345	240,430	846,307
From taxable loss carried forward not exceeding 5 years	16,640,682	5,078,568	-
Total	24,617,296	5,691,447	846,307
Deferred income tax liability			
From liabilities under finance lease agreements	208,386	(208,386)	-
Total	208,386	(208,386)	-
Deferred tax assets - net	24,408,910	5,899,833	846,307

20.2 Income tax expenses are as follows:

Income tax recognised in profit or loss

(Unit : Baht)				
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Current tax expense				
Income tax under Revenue Code	113,560	18,244	-	-
Deferred tax income				
Movements in temporary differences	(17,411,384)	5,899,833	(17,881,047)	5,899,833
Total income tax benefit (expense)	(17,524,944)	5,881,589	(17,881,047)	5,899,833

Income tax recognised in other comprehensive income

(Unit : Baht)					
	Consolidated F/S				
	2018			2017	
	Before tax	Tax (expense) benefit	Net of tax	Before tax	Tax (expense) benefit
Foreign currency translation differences for foreign operations	454,445	(90,889)	363,556	2,285,348	(457,069)
Defined benefit plan actuarial losses	-	-	-	4,231,536	(846,307)
Total	454,445	(90,889)	363,556	6,516,884	(1,303,376)

(Unit : Baht)					
	Separate F/S				
	2018			2017	
	Before tax	Tax (expense) benefit	Net of tax	Before tax	Tax (expense) benefit
Defined benefit plan-actuarial losses	-	-	-	4,231,536	(846,307)

Temporary differences unrecognized as deferred tax assets in the financial statement are summarized as follows:

	(Unit : Baht)	
	Consolidated F/S	Separated F/S
	2018	2017
Temporary differences:		
From allowance for impairment of investment in related companies	-	-
From allowance for impairment of loan to related companies	7,098,123	54,352,422
Unused taxable loss carried forward	135,073,360	142,253,442
Total	142,171,483	196,605,864

20.3 Income tax recognized in profit or loss

Reconciliation of income tax expenses are as follows:

	(Unit : Baht)	
	Consolidated F/S	Separate F/S
	2018	2017
Profit (loss) before tax	17,403,090	(253,127,125)
Applicable tax rate (%)	20	20
Tax multiplied by applicable tax rate	3,480,618	(50,625,425)
Effects :		
Adjustment for eliminate transaction	3,147,302	(772,215)
Tax on exempted revenue for Revenue Code	(10,441,325)	(1,217,143)
Tax on non-deductible exempted revenue for Revenue Code	1,244,716	40,308,185
Tax for unrecognized temporary different as deferred tax asset	(9,450,860)	-
Reverse of previously recognized deferred tax asset	22,079,250	-
Current year losses for which no deferred tax assets was recongnized	7,465,243	6,425,009
Income tax expense (benefit)	17,524,944	(5,899,833)
Income tax consisted of :		
Current income tax	113,560	18,244
Deferred tax from temporary differences	17,411,384	(5,899,833)
Total income tax (benefit)	17,524,944	(5,881,589)

21. ACCRUED EXPENSES

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Accrued director and management remuneration	9,509,746	9,235,000	9,000,000	7,600,000
Accrued transportation	1,026,470	1,105,230	1,026,470	1,105,230
Accrued export expenses	1,720,147	2,649,101	1,720,147	2,649,101
Accrued commission	5,810,509	3,768,889	5,810,509	3,768,889
Others	4,932,047	6,616,603	3,067,378	4,457,376
Total	22,998,919	23,374,823	20,624,504	19,580,596

22. LIABILITIES UNDER EMPLOYEE BENEFITS OBLIGATION

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Statement of financial position				
Obligations for post-employment benefits	11,117,047	9,671,352	10,843,086	9,540,409
Statement of profit or loss and other comprehensive income:				
<i>Recognized in profit or loss:</i>				
Post-employment benefits	1,445,695	1,333,090	1,302,677	1,202,147
<i>Recognized in other comprehensive loss:</i>				
Actuarial losses recognized in the year	-	4,231,536	-	4,231,536

The Company had established a defined benefit pension plan under the Thai Labour Protection Act B.E 2541 to provide retirement benefits to employees based on pensionable remuneration and length of service.

Movements in the present value of the defined benefit obligations for the years end 31 December 2018 and 2017 are as follows:

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Beginning balance as at 1 January	9,671,352	4,106,727	9,540,409	4,106,727
<i>Recognised in profit or loss</i>				
- Current service costs	1,086,350	1,032,149	951,516	901,206
- Interest on obligation	359,345	300,940	351,161	300,940
<i>Recognised in other comprehensive income</i>				
- Actuarial loss	-	4,231,536	-	4,231,536
Balance as at 31 December	11,117,047	9,671,352	10,843,086	9,540,409
<u>Less</u> Current portion	(754,444)	(178,063)	(754,444)	(178,063)
Net	10,362,603	9,493,289	10,088,642	9,362,346

Actuarial gains and losses recognized in other comprehensive income arose from:

	(Unit : Baht)	
	Consolidated and	
	Separate F/S	
	2017	
Demographic assumptions	708,131	
Financial assumptions	1,745,944	
Experience adjustment	1,777,460	
Total	4,231,535	

Actuarial assumptions

The following are principal actuarial assumptions at the reporting date (expressed as weighted averages).

	2018	2017
Discount rate	3.48 percent per annum	3.48 percent per annum
Future salary average increment rate	7.37 percent per annum	7.37 percent per annum
Normal retirement age	60 years	60 years
Mortality rate	Thai Mortality Table 2017	Thai Mortality Table 2017

Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

	(Unit : Baht)			
	Effect to the defined benefit obligation			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Discount rate (0.5% increment)	(639,145)	(590,753)	(624,643)	(583,340)
Discount rate (0.5% decrement)	684,518	634,603	668,905	626,610
Future salary growth (0.5% increment)	720,896	622,165	704,759	614,582
Future salary growth (0.5% decrement)	(661,772)	(571,531)	(646,653)	(564,412)

As at 31 December 2018, expected maturity of employee benefits obligation before discount are as follow:

	(Unit : Baht)	
	Consolidated F/S	Separate F/S
Within one year	649,444	649,444
Between 2 - 5 years	2,068,413	2,068,413
Between 5 - 10 years	5,318,400	4,033,321
More than 10 years	3,703,633	3,703,633
Total	11,739,890	10,454,811

On 13 December 2018, the National Legislative Assembly approved the Labor Protection Act, that will become effective 30 days after its publication in the Government Gazette, determined employer to pay compensation, if an employee work consecutively period of 20 years or more, employees has right to receives severance payment of 400 days of wages at the most recent rate. When the labor law come into force, the Group will recognize the increase in provision for employee benefits including past services cost of Baht 2.51 million in the consolidated FS and the separate financial statement. The Group selected to recognise such effect in year 2019.

23. SHARE CAPITAL AND WARRANT

23.1 SHARE CAPITAL

At the Annual General Meeting of Shareholders for the year 2017 held on 28 April 2017, the Shareholders passed a resolution to approve the increase of the registered capital for the exercise of the warrants amount of Baht 67,500,000 by issued common shares 67,500,000 shares at the par value of Baht 1 each, from the registered capital of Baht 270,000,000 to Baht 337,500,000. The Company registered the share capital increment with the Department of Business Development on 15 May 2017.

At the Extraordinary Shareholders' Meeting No. 2/2017 held on 29 August 2017, the Shareholders passed a resolution to approve the increase of the registered capital amount of Baht 21,740,725 as a part of payment of L solar 1' shares amount of 20,910,475 shares and for the adjust right exercising warrant amount of 830,250 shares, from Baht 337,500,000 to Baht 359,240,725 by issuing 21,740,725 newly issued common shares at the par value of Baht 1 per share, totalling Baht 21,740,725. The Company registered the share capital increment with the Department of Business Development on 8 September 2017.

At the Extraordinary Shareholders' Meeting No. 3/2017 held on 31 October 2017, the Shareholders passed a resolution to approve to increase of registered capital of Baht 70,000,000 from the registered capital of Baht 359,240,725 to Baht 429,240,725 by issued common shares 70,000,000 shares at offering price of Baht 13.00 per share (the par value of Baht 1 per share) that average seven days market price of the Company, totaling Baht 910,000,000 with the premium on common share at Baht 12.00 per share, totaling Baht 840,000,000 to private placement comprising Mr. Phoukhaokham Pravoraxay and/or Mr. Peeranat Tantipoj. The Company registered the share capital increment with the Department of Business Development on 8 November 2017.

During the year 2018, the warrant holders exercised 4,288 warrants, to buy 4,337 common shares with exercise price of Baht 9.88 per share. The Company received additional paid-up share capital of Baht 4,337 and recorded share premium of Baht 38,513.

During the year 2017, the warrant holders exercised 175,682 warrants, to buy 177,745 common shares with exercise price of Baht 9.88 per share. The Company received additional paid-up share capital of Baht 1,757,044 and recorded share premium of Baht 1,579,299.

23.2 WARRANT

At the Annual General Meeting of Shareholders for the year 2017 held on 28 April 2017, the Shareholders pass a resolution to issue of warrants to the Company's existing shareholders of 67,238,638 units as per the following item at the ratio of 1 existing shares to 1 unit of warrants with no consideration, the exercise priced at Baht 10.00 per share. The warrant holders may exercise their warrants shall be on the last business day of every quarter of each calendar year, (which are the last business day of March, June, September and December) throughout the term of Warrants. The first exercise date was on 30 June 2017 and the last exercise date shall be on 25 May 2018.

At the Extraordinary Shareholders Meeting No. 2/2017 held on 29 August 2017, the Shareholders passed a resolution to approve the warrant exercise ratio of the first stock warrants is adjusted from the exercise ratio of 1 warrant to 1 new common share to the ratio of the warrant to 1.01 new common shares, and the exercise price is adjusted from Baht 10.00 per share to Baht 9.88 per share.

During the year 2018, movements in warrants are as follow:

	Number of warrants
Balance as at 1 January 2018	67,062,956
Issued of warrants	(4,288)
Warrants expire on 25 May 2018	(67,058,668)
Balance as at 31 December 2018	-

24. EARNING PER SHARE

The Calculation of earning per share, basic and diluted earning per share for year ended 31 December 2018 and 2017 are as follows:

Consolidated F/S						
	Profit (loss) for the year ended 31 December (Baht)		Weighted average common shares (shares)		Earnings (loss) per share	
	2018	2017	2018	2017	2018	2017
Basic earning per share						
Profit (loss) attributable to shareholder of the Company	340,784	(247,186,033)	341,092,557	278,391,073	0.001	(0.888)
Potential effect of dilutive the Company						
Warrants			-	18,396,101		
Diluted earning (loss) per share						
Profit (loss) of common shareholder assuming the exercise of warrants	340,784	(247,186,033)	341,092,557	296,787,174	0.001	(0.833)
Separate F/S						
	Profit (loss) for the year ended 31 December (Baht)		Weighted average common shares (shares)		Earnings (loss) per share	
	2018	2017	2018	2017	2018	2017
Basic earning per share						
Profit (loss) attributable to shareholder of the Company	4,096,941	(219,341,285)	341,092,557	278,391,073	0.012	(0.788)
Potential effect of dilutive the Company						
Warrants			-	18,396,101		
Diluted earning (loss) per share						
Profit (loss) of common shareholder assuming the exercise of warrants	4,096,941	(219,341,285)	341,092,557	296,787,174	0.012	(0.739)

25. LEGAL RESERVE

Pursuant to the Public Limited Companies Act. B.E. 2535, the Company is required to set aside as a statutory reserve at least 5 percent of its net profit for the year net of deficit (if any), until the reserve reaches 10 percent of the registered capital. This reserve shall not be distributable for dividends.

26. DIVIDEND PAYMENT

At the Annual General Meeting of Shareholders for the year 2017 held on 28 April 2017, the Shareholders pass a resolution to approve the dividend payment from the retained earnings as at 31 December 2016 at Baht 0.03 per share, totaling Baht 8.10 million. The dividend was paid on 26 May 2017.

27. PROVIDENT FUND

The Company and employee have established a contributory Provident Fund. This Provident Fund has already been registered under the Provident Fund Act, B.E. 2530. Under the Fund plan, employee has to contribute to the fund at the specific rate and will be entitled to receive the fund when staff is no longer member in accordance with regulation of the fund. The Company's contribution to the Fund for the year 2018 amounted to Baht 3.07 million (2017 : Baht 2.83 million).

28. EXPENSES BY NATURE

Significant expenses by nature for the for the years ended 31 December 2018 and 2017 are as follows :

	(Unit : Baht)			
	Consolidated F/S		Separate F/S	
	2018	2017	2018	2017
Raw materials and supplies used	550,510,410	612,827,859	550,510,410	612,827,859
Changes in finished goods and work in process	7,375,334	1,274,225	7,375,334	1,274,225
Salaries, wages and other employee benefits	138,651,578	127,002,075	123,743,434	116,950,433
Depreciation and amortization	74,247,370	50,963,001	43,558,085	43,043,704
Repair and maintenance expenses	10,785,211	17,000,890	9,161,216	14,881,544
Electric expense	6,730,152	6,319,022	6,623,825	6,175,509
Transportation expense	9,869,629	11,397,584	9,819,696	11,251,116
Marketing expense	6,046,709	6,378,205	6,046,709	6,378,205
Warranty expenses	3,563,940	4,980,908	3,563,940	4,980,908
Commission expense and sales promotion	8,147,819	8,066,340	8,147,819	8,066,340
Professional fee	11,305,208	54,514,327	9,958,648	16,586,840
Doubtful account for trade receivable	7,624,132	4,256,681	7,624,132	4,256,681
Allowance for impairment for goodwill	-	193,254,818	-	-
Allowance for impairment of investment in related companies	-	-	7,062,276	141,799,970
Allowance (reversal of allowance) for doubtful account of loans to related companies	7,098,123	-	(47,254,299)	54,352,422
Allowance for impairment of fixed assets	2,909,280	-	-	-
Travelling expense	7,567,685	5,398,309	6,858,644	5,135,544
Bank fee	4,601,145	4,506,897	4,089,280	4,262,924
Equity in net loss of associated company	1,027,387	-	-	-
Loss from sale of investment in indirect associated company	19,695,061	-	-	-
Others	64,926,828	47,389,611	51,201,579	45,448,446
Total	942,683,001	1,155,530,752	808,090,728	1,097,672,670

29. PROMOTIONAL PRIVILEGE

The indirect subsidiary received promotional privileges from the Board of Investment Promotion Act B.E. 2520 under a certificate No.1114(1)/2554 on 21 January 2011 for production and distribution of electricity from solar energy such as exemption import duties on the machineries, exemption from corporate income tax on net profit derived from the promoted activities, for the period of 8 years from the date income is first derived from such activity.

30. FORWARD FOREIGN EXCHANGE CONTRACTS

The Company does not have any policy to use derivative financial instrument for speculation or commercial use. Forward foreign exchange contracts are made to manage exposure for fluctuation in foreign currency exchange rates on specific transactions.

As at 31 December 2018, the Company has open forward contracts for collection of payment from trade accounts receivable and repayment of accounts payable which settlement dates are ranging between 1 month and 6 months as follows:

	Foreign currencies	Contracts rates (Baht)
<i>Forward contracts for repayment of trade accounts payable and trust receipts</i>		
USD	1,750,187	32.25 – 33.27
EUR	67,335	38.55
<i>Forward contracts for collection of payment from trade accounts receivable</i>		
AUD	211,490	23.31 – 23.99
USD	1,262,820	32.41 – 32.61

31. SEGMENT REPORTING

The Company business operations categorized by nature of business and geophysical for the years ended 31 December 2018 and 2017 are as follows:

	Consolidated F/S						(Unit : Baht)
	For the years ended 31 December						
	Manufacturing and sale electric transformers			Manufacturing and sale electricity			Total
	Domestic		Export	Domestic			
	2018	2017	2018	2018	2017	2018	2017
Revenues from sales	513,966,391	602,556,616	280,841,261	142,478,358	36,062,862	937,286,010	882,111,143
Cost of sales	(512,281,591)	(563,563,693)	(176,688,379)	(46,930,191)	(12,827,201)	(735,900,161)	(745,372,181)
Gross profit	1,684,800	38,992,923	104,152,882	95,548,167	23,235,661	201,385,849	136,738,962
Revenues from service	20,764,087	19,419,944	-	-	-	20,764,087	19,419,944
Cost of service	(11,860,974)	(15,437,336)	-	-	-	(11,860,974)	(15,437,336)
Gross profit	8,903,113	3,982,608	-	-	-	8,903,113	3,982,608
Interest expense							
Depreciation and amortization expenses						(15,174,809)	(14,730,861)
						(74,247,370)	(50,963,001)
Profit (loss) before income tax from continuing operations						20,490,165	(252,730,172)
Loss from discontinued operations						(3,087,075)	(396,953)
Profit (loss) before income tax						17,403,090	(253,127,125)
Total Assets						1,918,985,005	2,037,266,936

Major Customers

For the year ended 31 December 2018 and 2017, the Company's major revenues arose from sales to Government enterprises and private companies amounted to Baht 605.11 million and Baht 410.85 million, respectively.

32. COMMITMENTS AND CONTINGENT LIABILITIES

As at 31 December 2018, the Company and the indirect subsidiary has obligations under a domestic bank guarantees for performance bonds required in the normal course of businesses approximately Baht 226.93 million and Baht 3.30 million, respectively.

33. RECONCILIATION OF LIABILITIES ARISING FROM FINANCING ACTIVITIES

The amendments to TAS 7, effective 1 January 2018, require the Group to provide disclosures about the changes in liabilities from financing activities. The Group categorises those changes into changes arising from cash flows and non-cash changes as required by TAS 7.

The changes in the Group's liabilities arising from financing activities can be classified as follows;

(Unit : Baht)

	Consolidated F/S			
	Short-term loans from banks	Long-term loans from banks	Liabilities under financial lease agreement	Total
1 January 2018	320,554,278	156,240,000	5,756,740	482,551,018
Cash-flows:				
Repayment	(635,534,692)	(71,740,000)	(3,690,386)	(710,965,078)
Proceeds	517,062,414	15,039,346	-	532,101,760
Non-cash:				
Acquisition	-	-	2,451,000	2,451,000
31 December 2018	202,082,000	99,539,346	4,517,354	306,138,700

(Unit : Baht)

	Consolidated F/S			
	Short-term loans from banks	Long-term loans from banks	Liabilities under financial lease agreement	Total
1 January 2017	311,060,793	-	5,461,186	316,521,979
Cash-flows:				
Repayment	(932,592,931)	(15,313,311)	(4,383,446)	(952,289,688)
Proceeds	942,086,416	-	-	942,086,416
Addition from business combination	-	171,553,311	-	171,553,311
Non-cash:				
Acquisition	-	-	4,679,000	4,679,000
31 December 2017	320,554,278	156,240,000	5,756,740	482,551,018

(Unit : Baht)

Separate F/S				
	Short-term loans from banks	Long-term loans from banks	Liabilities under financial lease agreement	Total
1 January 2018	320,554,278	-	4,480,986	325,035,264
Cash-flows:				
Repayment	(635,534,692)	(4,900,000)	(3,317,841)	(643,752,533)
Proceeds	517,062,414	15,039,346	-	534,552,760
Non-cash:				
Acquisition	-	-	2,451,000	2,451,000
31 December 2018	202,082,000	10,139,346	3,614,145	215,835,491

(Unit : Baht)

Separate F/S				
	Short-term loans from banks	Long-term loans from banks	Liabilities under financial lease agreement	Total
1 January 2017	311,060,793	-	5,461,186	316,521,979
Cash-flows:				
Repayment	(932,592,931)	-	(3,601,200)	(936,194,131)
Proceeds	942,086,416	-	-	942,086,416
Non-cash:				
Acquisition	-	-	2,621,000	2,621,000
31 December 2017	320,554,278	-	4,480,986	325,035,264

34. FINANCIAL INSTRUMENTS

Foreign Currency Risk

The Company has exposure for foreign currency risk relating primarily to its trade accounts receivable and accounts payable and loans from banks which are denominated in foreign currencies. The Company entered into the forward exchange contracts when it considers necessary to reduce exposure on foreign currency risk.

Credit Risk

The Company provides credit term on its trade transactions. The Company manages its exposure to credit risk by closely monitoring collection of accounts receivable and focuses on overdue accounts. In the case of doubt about the collection of accounts receivable, the Company provides allowance in the accounts as deemed necessary.

Interest Rate Risk

The interest rate risk is that future movements in market interest rates that will affect the results of the Company operations and its cash flows. The Company's exposure to interest rate risk relates primarily to their deposits with bank, temporary investment, loans to associate company, loans from bank and liabilities under hire - purchase agreements as follows:

(Unit : Baht)

	Consolidated F/S				
	2018				
	Floated rate	Fixed rate	No interest	Total	Interest rate (%)
<u>Financial assets/ liabilities</u>					
Cash and cash equivalents	68,681,529	-	50,107,594	118,789,123	0.30% - 1.50%
Temporary investment	-	-	466,340,820	466,340,820	-
Trade accounts receivable and unbilled accrued income	-	-	256,458,523	256,458,523	-
Other receivable	-	-	1,295,263	1,295,263	-
Restricted cash	21,306,698	-	-	21,306,698	0.30% - 1.75%
Loan to related companies	-	6,901,877	-	6,901,877	5.50%
Short-term loans from banks	-	202,082,000	-	202,082,000	3.30% - 4.75%
Long-term loans from banks	99,539,346	-	-	99,539,346	MLR-1.50%
Trade accounts payable and other payable	-	-	109,268,226	109,268,226	-
Liabilities under finance lease agreements	-	4,517,354	-	4,517,354	1.09% - 4.00%

(Unit : Baht)

	Consolidated F/S				
	2017				
	Floated rate	Fixed rate	No interest	Total	Interest rate (%)
<u>Financial assets/ liabilities</u>					
Cash and cash equivalents	62,197,777	-	28,795,118	90,992,895	0.13% - 0.75%
Temporary investment	-	-	378,848,818	378,848,818	-
Trade accounts receivable and unbilled accrued income	-	-	282,803,157	282,803,157	-
Other receivable – related company	-	-	1,348,271	1,348,271	-
Restricted cash	21,118,629	-	-	21,118,629	0.13% - 0.75%
Loan to related companies	-	17,870,454	-	17,870,454	4.00% - 5.00%
Short-term loans from banks	-	320,554,278	-	320,554,278	2.92% - 3.25%
Long-term loans from banks	156,240,000	-	-	156,240,000	MLR-1.50%
Trade accounts payable and other payable	-	-	54,407,421	54,407,421	-
Liabilities under finance lease agreements	-	5,756,740	-	5,756,740	2.40% - 4.00%

(Unit : Baht)

Separate F/S

	2018				
	Floated rate	Fixed rate	No interest	Total	Interest rate (%)
<u>Financial assets/ liabilities</u>					
Cash and cash equivalents	33,318,470	-	36,375,129	69,693,599	0.30% - 1.50%
Temporary investment	-	-	351,869,055	351,869,055	-
Trade accounts receivable	-	-	229,738,455	229,738,455	-
Other account receivable	-	-	1,404,161	1,404,161	-
Loan to related company	-	6,901,877	-	6,901,877	5.50%
Short-term loans from banks	-	202,082,000	-	202,082,000	3.30% - 4.75%
Long-term loan from bank	10,139,346	-	-	10,139,346	MLR-1.50%
Trade accounts payable and other payable	-	-	106,781,827	106,781,827	-
Liabilities under finance lease agreements	-	3,614,145	-	3,614,145	1.09% - 4.00%

(Unit : Baht)

Separate F/S

	2017				
	Floated rate	Fixed rate	No interest	Total	Interest rate (%)
<u>Financial assets/ liabilities</u>					
Cash and cash equivalents	30,507,927	-	14,302,227	44,810,154	0.13% - 0.75%
Temporary investment	-	-	378,540,803	378,540,803	-
Trade accounts receivable	-	-	258,558,876	258,558,876	-
Other account receivable - related companies	-	-	8,150,463	8,150,463	-
Loan to related companies	-	616,747,578	-	616,747,578	4.00% - 5.50%
Short-term loans from banks	-	320,554,278	-	320,554,278	2.92% - 3.25%
Trade accounts payable and other payable	-	-	53,155,960	53,155,960	-
Liabilities under finance lease agreements	-	4,480,986	-	4,480,986	2.40% - 4.00%

Liquidity Risk

Liquidity risk arises from the possibility that customers may not be able to settle obligations to the Company within the normal terms of trade. To manage this risk, the Company periodically assesses the financial viability of customers.

As at 31 December 2018 and 2017, the financial instrument classified by the periods of time from the date on the statements of financial position to their maturity dates are as follows:

	(Unit : Baht)			
	Consolidated F/S			
	2018			
	At call	Within 1 year	Over 1 year	Total
<u>Financial assets/ liabilities</u>				
Cash and cash equivalents	118,789,123	-	-	118,789,123
Temporary investment	466,340,820	-	-	466,340,820
Trade accounts receivable and unbilled accrued income	256,458,523	-	-	256,458,523
Other account receivable	1,295,263	-	-	1,295,263
Restricted cash	-	-	21,306,698	21,306,698
Loans to related companies	6,901,877	-	-	6,901,877
Short-term loans from banks	-	202,082,000	-	202,082,000
Long-term loans from banks	-	75,240,000	24,299,346	99,539,346
Trade accounts payable and other payable	109,268,226	-	-	109,268,226
Liabilities under hire - purchase agreements	-	2,195,735	2,321,619	4,517,354
				(Unit : Baht)
	Consolidated F/S			
	2017			
	At call	Within 1 year	Over 1 year	Total
<u>Financial assets/ liabilities</u>				
Cash and cash equivalents	90,992,895	-	-	90,992,895
Temporary investment	378,848,818	-	-	378,848,818
Trade accounts receivable and unbilled accrued income	282,803,157	-	-	282,803,157
Other account receivable - related companies	1,348,271	-	-	1,348,271
Restricted cash	-	-	21,118,629	21,118,629
Loans to related companies	17,870,454	-	-	17,870,454
Short-term loans from banks	-	320,554,278	-	320,554,278
Long-term loans from bank	-	66,840,000	89,400,000	156,240,000
Trade accounts payable and other payable	54,407,421	-	-	54,407,421
Liabilities under hire-purchase agreements	-	2,714,374	3,042,366	5,756,740

(Unit : Baht)

	Separate F/S			
	2018			
	At call	Within 1 year	Over 1 year	Total
Financial assets/ liabilities				
Cash and cash equivalents	69,693,599	-	-	69,693,599
Temporary investment	351,869,055	-	-	351,869,055
Trade accounts receivable	229,738,455	-	-	229,738,455
Other account receivable - related companies	1,404,161	-	-	1,404,161
Loan to associated company	-	-	6,901,877	6,901,877
Short-term loans from banks	-	202,082,000	-	202,082,000
Long-term loans from bank	-	8,400,000	1,739,346	10,139,346
Trade accounts payable and other payable	106,781,827	-	-	106,781,827
Liabilities under hire - purchase agreements	-	1,805,417	1,808,728	3,614,145

(Unit : Baht)

	Separate F/S			
	2017			
	At call	Within 1 year	Over 1 year	Total
Financial assets/ liabilities				
Cash and cash equivalents	44,810,154	-	-	44,810,154
Temporary investment	378,540,803	-	-	378,540,803
Trade accounts receivable	258,558,876	-	-	258,558,876
Other account receivable - related companies	8,150,463	-	-	8,150,463
Loan to related companies	-	599,747,578	17,000,000	616,747,578
Short-term loans from banks	-	320,554,278	-	320,554,278
Trade accounts payable and other payable	53,155,960	-	-	53,155,960
Liabilities under hire - purchase agreements	-	2,341,828	2,139,158	4,480,986

Fair value of financial instruments

The following methods and assumptions are used to estimate the fair value of each class of the Company's financial instruments.

- Financial assets are shown at estimated fair value.
The Company determines Level 1 fair values for financial assets such as cash and cash equivalents, temporary investment, and trade accounts receivable.
- Financial liabilities are shown at the book value which is considered fair value because such liabilities will be matured in short term.

The Company determines Level 1 fair values for financial liabilities such as trade accounts and other accounts payable.

The Company determines Level 2 fair values for financial liabilities using a discounted cash flow technique, which uses contractual cash flows and a market-related discount rate, such as short-term and long-term loans from banks, liabilities under financial lease agreement, and liabilities under employee benefits obligation

35. APPROVAL OF FINANCIAL STATEMENTS

These financial statements were authorized by the Company's director on 20 February 2019.



คุณภาพแห่งความประณีต
QUALITY OF DETAILS >>
D - DYNAMICS E - ENVIRONMENT
T - TEAMWORK A - ACHIEVEMENT
I - INNOVATION L - LEADERSHIP S - SERVICE

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