

บริษัท เกร็ดวิศกรรม จำกัด (มหาชน)

ANNUAL REPORT
รายงานประจำปี 2561

2018



RENEWABLE
ENERGY



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พลังงานทดแทน



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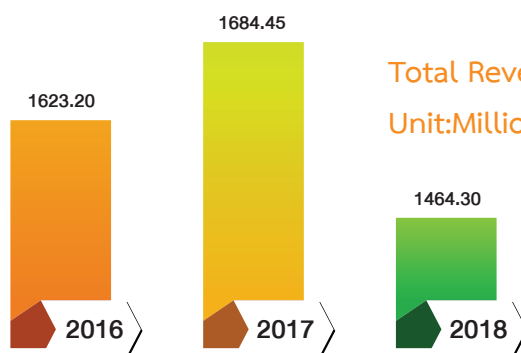
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Summary of Financial Information of Ekarat Engineering Public Company Limited and Subsidiary

		2561	2560
Revenue from operation	(Million Baht)	1,464.30	1,684.45
Total revenue	(Million Baht)	1,492.21	1,732.27
Cost from operation	(Million Baht)	1,193.66	1,354.31
Gross Profit	(Million Baht)	270.64	330.14
Selling Expenses	(Million Baht)	119.41	125.94
Administrative Expenses	(Million Baht)	155.60	165.45
Net Profit	(Million Baht)	(279.65)	44.30
Total Assets	(Million Baht)	1,616.25	2,011.90
Total Liabilities	(Million Baht)	735.24	810.95
Total Shareholders' Equity	(Million Baht)	881.01	1,200.95
Ordinary Shares	(Million Shares)	1,343.29	1,343.29
Paid-up Share Capital	(Million Baht)	1,074.63	1,074.63
Par Value	(Baht)	0.80	0.80
Earnings (loss) Per Share	(Baht)	(0.208)	0.033
Book Value per Share	(Baht)	0.66	0.89
Gross Profit Margin	(%)	19.31	20.01
Net Profit Margin	(%)	(18.74)	2.56
Return on Total Assets	(%)	(17.95)	4.20
Return on Equity	(%)	(26.86)	3.70
Total Debt to Equity	(times)	0.83	0.68



Total Revenue from year 2016-2018
Unit: Million Baht



MESSAGE FROM THE CHAIRMAN

Mr. Vichit Yamboonruang
Chairman of the Board

The economic overview of the domestic in 2018 was likely to improve continuously but it was only corporate. The investment of private ownership of business that has a bit improved and has delayed the investment of the government related to the business of Ekarat Engineering Public Company Limited. There was also the volatility of the global economy from the trade war between the United States and China which indirectly affects to the export of Thailand. It made the competition increased continuously in the transformer market. That was the important factors in the company's core business.

The solar energy business continuously grew according to the government's policy that encouraged the use of alternative energy in accordance with the renewable energy and alternative energy development plan (AEDP), especially for the investment of solar rooftop on the business sector and households in the form of electricity for their own use in order to the electricity production cost from solar rooftop was lower than the retail price which the Electricity Generating Authority of Thailand was the distribution. The business sector was interested in installing the solar rooftop to reduce costs continuously and it can be speculated that in the future will be able to sell the exceeded electricity to the system as well. The company had more incomes from selling solar panels that had been consented to the TIS standards and from the installation of solar panels than last year but at the same, competition in the solar energy business is also rising as the number of operators increased as well.



The company has operated the 3-year business plan (2018-2020), consisting of 3 main policies, namely, 1) Emphasize profit making 2) Progression of the organization and 3) Investment by adjusting the functional and working process to increase competitiveness. The outdated machines have been replaced by the updated machines for improving the production processes more quickly. The product planning and inventory management have been improved to response the customer demands. Moreover, the sale strategies are always the most important role to emphasize by adding the additional customer both the domestic and international target groups in order to increase the sales and the existing maintenance services.

The overview of the transformer and the solar energy industry in 2019 continuously increases as demand for electricity and the growth of GDP. The upcoming election in 2019 will make the worth investment. There are also the projects to promote the investment of the government in Thailand Power Development Plan (PDP 2018) to provide sufficient electricity for the country to meet the demand and Eastern Economic Corridor Plan (EEC) which are expected to have a lot of demand for transformers and solar panels so it is an important opportunity to increase sales. The company is able to develop the quality competitiveness of the product continuously and improve the processes simultaneously by seeking the new technologies to improve the capability of the production betterment and also reduce production costs as well as improve the potential crews to make the foundation for sustainable development of the company.

On behalf of the Directors, Management Team and staff of the company would like to express our sincere gratitude to all stakeholders, shareholders, customers, business partners and financial institutions for always kind support to the company. We strive and work hard to develop the potential of the company to move forward and make the sustainable yields. Always be the leadership in the transformer business and emphasize on the social responsibility for the most benefit of all stakeholders.

On behalf of the Directors and Management Team
Ekarat Engineering Public Company Limited



(Mr. Vichit Yamboonruang)
Chairman of the Board





Ekarat Engineering Public Company Limited (the “Company”) was incorporated on 24 June 1981 with initial registered capital amount 4 Million Baht by Noichaiboon’s family as a major shareholder. The company operates manufacturing and distribution (Distribution Transformer) under the trademark “EKARAT” which distributed in both domestic and international markets in South East Asia, South Asia, the Middle East and Australia, gained the trust in design and engineering until the sales always be the number one.

In 1994, the Company was approved to be listed on the Stock Exchange of Thailand and transformed into a public company. The Company increased its registered capital 302 Million Baht in 1998, then in 2006 started trading in the Stock Exchange of Thailand in the energy and utility sector under the name of the securities “ AKR” and increased the registered capital to 790 Million Baht with a total of common stock 790 Million shares with a par value of 1 Baht per share. Later in 2012, the company reduced its registered capital by reducing the par value to par 0.80 Baht which caused the registered and paid-up capital of the Company to decrease to 632 million baht. Later in 2013, the company increased the registered capital to 1,074 Million Baht by issuing new ordinary shares 503 Million shares par value 0.80 Baht which is making the Company with registered capital 1,074 Million Baht and divided into common stock 1,343 Million shares until now.

In addition, the Company has the initiative to find new businesses which were consistent and able to support the transformer business therefore the importance and need for clean energy sources for electricity generation to be recognized by observing the potential and various factors in Thailand. The solar energy business, which was the solar power generation system producing the clean energy to be renewable and good for our environments. In 2004, the Company invested in establishing Ekarat Solar Company Limited to manufacture and supply solar cell (Solar Module), with manufacturing, assembly and distribution of solar panels at Chachoengsao Province with a capacity of 15 MW per year. Later in 2006, the Company set up a solar cell factory (Amata City) at Amata City Industrial Estate, Rayong Province with a capacity of 25 MW per year. In addition, the company also designs and installs electricity from solar energy and renewable energy and to be consultant on the energy conservation process, including the construction of power plants. In 2015, the Company invested in the establishment of Ekarat Energy Company Limited, which was operated in all energy businesses as a distributor, advising, bidding, investing in the energy business industry including various power plants both inside and outside the country.



In the present, the Company Headquarter is already operational in Bangkok. The transformer factory and the solar panel assembly is located at Chachoengsao Province. The solar cell factory is located in Rayong Province. In addition, there are 10 transformer service centers covering all over Thailand.

Policy and organization direction

The Company is committed to produce the products that are standard and durable, be able to meet the needs of consumers in all aspects by running the business under the good corporate governance. Adhere to the principles of corporate governance with transparency, accountability, ethics and commitment to sustainable business development with the environment and social responsibility with regard to stakeholders both inside and outside the organization. Board of directors have a vision to review the operating strategy of the Company to be consistent with the company's objectives and goals.

Vision

“To be the leader in the transformer business of the ASEAN”

Missions

1. Always improve the products and the services to be the best and above the expectations of customers.
2. Conduct the business with good governance.
3. Develop personnel to obtain knowledge, ability, morality and good quality of life.

Operating philosophy

“Adhering to quality and integrity for customers”

Corporate policy

1. Produce products and services that meet the standards in order to satisfy customers
2. To maintain the quality of safety, occupational health, environmental and prevention of pollution caused by raw materials in the production process, various activities as well as the products and services of the organization
3. The organization is committed to promote the anti-corruption both from inside and outside the organization.
4. Comply with the laws and regulations which related to the business operation of the organization strictly
5. The employees are also responsible for using the energy and resources efficiently



6. Provide the support in allocating the resources which are needed to improve and solve problems of quality, safety, occupational health, environment and society to be adequate and appropriate.
7. Corporate policy has been disseminated to employees and stakeholders.
8. Review and improve the policies to be consistent with the current situation by taking into account the impact of employees and stakeholders

The Company operates under the values of “Maintaining product quality and being honest with customers” is a leader in distribution transformers. The Company targeting of business since 2018-2020.

The business plan for the 3 years later (2018-2020)

The economic outlook for 2018-2020 forecasts that the GDP will grow approximately 3.7-4.0% and after the election year 2019, which is pushing for increased investment. the trend of electric power usage, with an increase of 1,000 MW per year (data from the PDP Power Development Plan of Thailand 2015 - 2036) that makes the demand for distribution transformers averaging 5,000 MW per year while the ASEAN countries with a very high economic growth rate, the Company has more opportunities to sell transformers to these countries.

Solar energy is a new alternative energy that never runs out and environmentally friendly. In addition, at present, the solar cell system has a lower price. In the future, the electricity cost tends to be increased and make various operators. There is an idea to save electricity by installing a solar power system on the roof. According to the Thailand Power Development Plan (PDP 2015 – 2036) plan to install a solar power plant with an average of 200 MW per year, including the government is considering the installation of free solar rooftop this year. That is a driving force for the solar market to grow rapidly. It is expected that in this period of 1-3 years, there will be more investment projects for installing solar power systems on the roof. Both in the private sector and government agencies causing the opportunity to sell solar panels, the installation of the solar power generation system on the roof for to add more.

The Company has prepared a business plan for 3 years (2018 – 2020). The three main policies are focus on profits, the progress of the organization and investment. In addition, the 4 main strategies are defined as follows.



1. Sales

Focus on increasing revenue and profits with plans to increase the revenues both the transformer and the service about 10% per year and plans to sell solar cell average about 400 Million Baht per year.

2. Investment

Focus on investment projects with private solar roof and the government power plant project according to the power development plan of Thailand PDP 2015 – 2036.

3. Production

Focus on reducing costs and increasing production efficiency by improving the design, production processes and adding machines. The business plan is a plan to reduce costs about 3-5% of the sale cost and increased production by 10% per year.

4. Human resources

Focus on the management to work efficiently. Use the principle of staff turnover and use machines to replace employees. Including organizational structure improvements, improving the work system of each unit to ensure consistency and maximum efficiency.

The Company will focus on increasing sales, reducing costs and increasing profits by focusing on the production of transformers to keep pace with customer demand and focus on the solar energy business by increasing market share. This will result in the company achieving the goals.

Expansion and increase of business competitiveness

The company plans to expand and increase the competitiveness of the business by

- Increasing the ability of personnel to provide advice on investing in solar power plants including services in various areas to respond to an investor.
- Increasing competitiveness by finding business partners that are technologically advanced continuously developing and training skills for employees. It is an important to maintain the leadership of the company.

In this regard, the Board of Directors' meeting on 25 December 2018 has considered reviewing the business plan and monitoring the company's performance annually to adjust the operating strategy to suit the changing situation at all the times.



Changes and developments in 2018

- The Company has allocated the net profit for 2017 to be the Company reserve of 2,543,746.30 baht and approved the dividend payment from the Company's performance to shareholders at the rate of 0.03 baht per share, 1,343,289,404 shares, totaling of dividends in total 40,298,682.12 baht.
- The Company has invested and improved the production process for 2018
 - The production department has changed the new high voltage coil machine to improve production efficiency which can reduce production time by an average of about 35% per device.
 - The production department has replaced the new transformer oil tester because the original machine has a long life time and confronted with the deflections.
 - Production department changed the new oven to support increased production.
 - The production department has improved the electrical testing laboratory that has been certified according to TIS 17025.
 - The Company has installed the Solar Rooftop 139 kW, additional on the factory roof at Bang Pakong, Chachoengsao, to produce electricity for use within the factory and reduce the cost of electricity consumption.
- The awards that the Company received in 2018 include the green label project. The Company received the certificate for using the green label certification mark from the Thai Environment Institute Foundation which shows that the Company's products have been evaluated and verified that the environmental standards are in line with the requirements of the Green Label policy and project management committee and other. Environmental labels announced using clean technology to produce products that have little environmental impact.

Structure of shareholding for EKARAT ENGINEERING PCL. Group

The Company is a manufacturer and distributor of transformers under the "EKARAT" trademark. Later, the Company expanded business from seeing the importance of renewable energy. Especially solar energy, which was not widespread in Thailand. Therefore established a subsidiary to operate solar cell production and distribution business, the details are as follows;

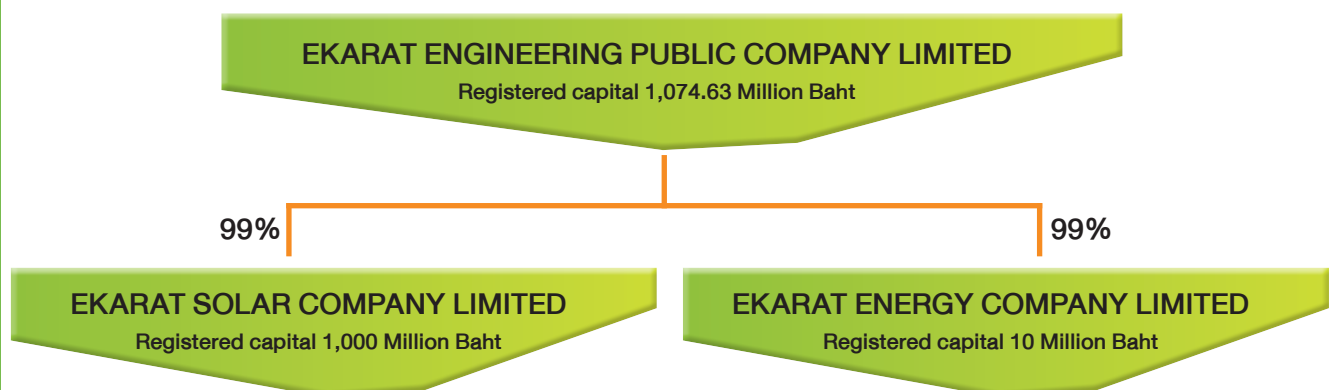


1. Ekarat Solar Co.,Ltd. has a registered capital 1,000 million baht. The Company holds 99.99% of shares. It was established on April 9, 2004 to operate solar cell and solar cell business. By the solar cell factory located at Amata City Industrial Estate, Rayong Province and the solar cell production plant is located at Bangpakong, Chachoengsao Province. The Board of Directors of the Company has 4 members, namely Mr. Wiwat Sangtian, Mr.Danucha Noichaiboon, Mr.Anan Santichewasatian and Mr.Daroonwat Noichaiboon, to manage the business to be in line with the established business plan.

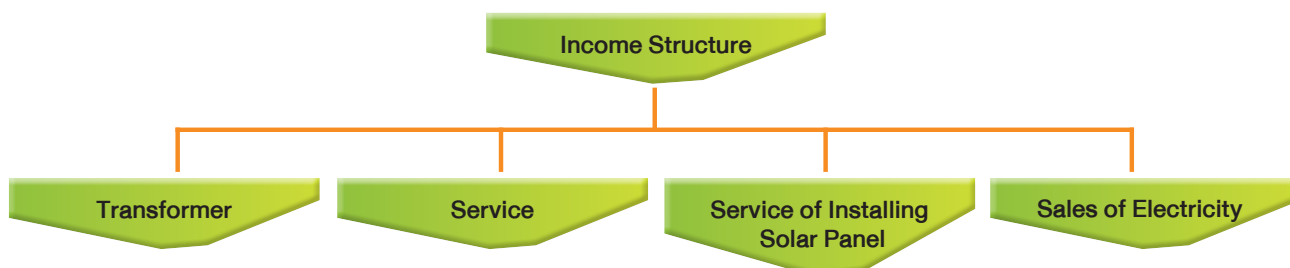
At the present, asset of Ekarat Solar Co.,Ltd. have been sold to the Company in order to continue using solar energy business.

2. Ekarat Energy Co.,Ltd. has a registered capital 10 million baht.The Company holds 99.99% of shares.It was established on 22 April 2015 to operate solar energy business. By having 3 executive directors together with the company, namely, Mr.Danucha Noichaiboon, Mrs.Daranee Kantamara and Mr.Anan Santichewasatian.

As of December 31, 2018, the Company has a diagram of the shareholding structure of the Group as follows:



In 2018, the Company mainly generates income from transformer and services. Its income structure for fiscal years ended December 31, 2016, 2017 and 2018 was as follows:



(Unit : Million Baht)

	2016		2017		2018	
	Revenue	%	Revenue	%	Revenue	%
Revenue from sales of goods	1,342.85	81.07	1,400.17	80.83	1,114.08	74.65
Revenue from services and maintenance	212.28	12.82	193.61	11.18	197.84	13.26
Revenue from service of installing a solar panel	46.36	2.96	43.25	2.50	107.07	7.17
Revenue from sales of electricity current	21.71	1.31	47.42	2.74	45.31	3.03
Other incomes *	33.29	2.00	47.82	2.76	27.91	1.87
Total Revenues	1,656.50	100.00	1,732.27	100.00	1,492.30	100.00

* Other incomes means other incomes except revenue from sales of goods and services such as Income from sales of scrap, interest, Gain from selling debt, Profit from sales of investments, etc.

Description of Products and Services

From the structure of the group of companies which consists of Ekarat Engineering Public Company Limited, Ekarat Solar Company Limited and Ekarat Energy Company Limited. The product and service of the Company and subsidiaries can be divided into 3 types of Distribution Transformer, Service and Solar Energy with the detail as follows:



1. Distribution Transformer

The quality product that be proud of the Company which has been popular, trustworthy on the top of customer under the trademark “Ekarat” which is a high quality transformer that can be compared to various global standards Including international standards (IEC), German standards (VDE & DIN), American standards (ANSI) and Japanese standards (JIS) There is also a distinctive feature is the low loss can withstand lightning voltage (Impulse Voltage) and short-circuit current in maximum when compared to general transformer. Therefore has the least damage rate.

The Company is the first and only manufacturer that dares to protect the damage that will occur. We guarantee the quality of our transformer for 3 years and for all customers that are installed our transformer in Thailand.

The Company can design and manufacture all types of transformers according to international standards or according to customer’s need IEC 60076, ANSI C57, VDE 0532 & DIN 4290, JIS, TIS 384-2543 (2000). The Company’s transformer has the electric power between 1 kVA to 30,000 kVA, both 1-phase and 3-phase with a maximum voltage not over 36 kV, maximum production capacity of 8,000 units or 4,000 MVA per year.

Our product is **Distribution Transformer** which is used to convert the voltage from the high voltage supply line of the Metropolitan Electricity Authority (MEA) or the Provincial Electricity Authority (PEA) at the pressure level 33 kV 22 kV or 11 kV to the voltage supply line low at a voltage of 230 V or 400 V to be sent to small power users such as houses. You can see it on electric pole on both sides of the road. Some business agencies have to obtain high voltage from MEA or PEA directly and install the distribution transformer by themselves to reduce voltage suitable for use. These business units include medium-sized industrial plants, hotels, hospitals, shopping centers, etc. Distribution transformers can be divided into 2 types as follows:

- **Oil Type Distribution Transformer**, using oil to circulate inside for cooling and acting as insulation. Most of oil distribution transformers will be installed outdoors and can be divided into 2 types of oil distribution transformers as follows:

- Open Type with Conservator, is an old type distribution transformer which has been used for a long time. It cooled by oil and have pipes to allow air to pass through. In addition, there is also a silica gel, a clear blue color to help absorb moisture and measure of the insulation value of transformer oil. It must always check the transformer oil every 6-12 months.

- Hermetically Sealed Transformers, this type of oil distribution transformer is a sealed transformer to prevent air entry. Therefore, it has the ability to prevent moisture very well without containing silica gel helps to filter moisture and can maintain the insulation condition of the transformer oil for a long time.



- **Dry Type Cast Resin**, generally, dry type resin distribution transformer is priced 2-3 times higher than oil distribution transformers. The power sizes ranging from 1-2,500 kVA. It cooling by air and use the resin and polyester as a coil coating to provide a good insulating property to prevent heat.

2. Service

The service work can be divided into 2 groups, namely the maintenance and repair of the distribution transformer system and the design, installation and maintenance of electrical systems. With details of each work group as follows;

- **The maintenance and repair of the distribution transformer**

Transformer is an important electrical device. Any problems caused by the failure of the transformer cannot supply electricity then will immediately affect the user especially in various industries. The production process must be stopped. Until it may cause a loss in the business system is a high value. Therefore, planning for maintenance of the transformer according to the time period and receiving services from those with direct expertise in addition to prolonging the service life. It also prevents severe damage that may occur. In addition, the Company also provides services covering repairs when problems occur. By focusing on providing services that cover all areas and fast, 24 hours a day. Will provide maintenance and repair services for all types of transformers and all voltage systems by testing and analyzing the quality of oil transformers (DGA), filters and oil transformers check and fix leaks change spare parts, check service, repair and overhaul, as well as fix transformer on site by a team of engineers and technicians with experience in maintenance and repair services for transformers for more than 30 years with equipment and modern testing machines including being able to give advice and improve electrical systems. In addition, during the maintenance and repair of transformers. The Company has provided an alternate distribution transformer from small to large, more than 100 units to support customers. The customers can borrow, use the distribution transformer until the distribution transformer that the customer ordered, finished production, or completed the repair, which will have a period of production or repair not more than 3 months by the time of production or repair of the transformer. The distribution depends on the size of the distribution transformer. In addition, customers can rent transformers for the Company's distribution system if customers do not want to buy distribution transformers with a year-to-year lease agreement.



- **Design, Installation and Maintenance of electrical systems.**

Design, Installation and Maintenance of electrical systems. There are products and services as follows.

(1) **Maintenance for On Load Tap Changer (parts of the transformer):** The Company's personnel have been trained by the On Load Tap Changer's manufacturer. Therefore, they can give advices on the conditional based maintenance, preventive maintenance, change parts, which can provide distribution transformers for all brands and all electrical systems.

(2) **Maintenance services and industrial electrical motor repair:** The Company provides maintenance and repair services for industrial electrical motors in accordance with ISO 9001: 2000. Customers can request free charges in the first operating the service team will check the solution at the factory including installation, test run and overhaul. In addition, the alternating current (AC) industrial electrical motor which have voltage ranges during 380 volts to 6,600 volts are also provided to repair DC motors (Direct Current: DC) voltage range from 110 volts to 1,200 volts including changing the rotor bar, spraying the shaft, changing the shaft, connecting the lid or hitting the Laser Alignment Renew Commutator and slip-ring with 1 year warranty.

(3) **Electrical system maintenance:** The Company provides electrical system maintenance services to enhance the efficiency of the power supply system with the continuous and consistent importance of the preventive maintenance for the control cabinet due to the dirty electrical equipment such as dust, powder, soot, smoke and other including the cause of the electrical equipment in the power distribution cabinet, also the release of heat until the heat increases at the electrical connection point or the connection point between electrical equipment which caused by the heat accumulated when using. In case of, the metal expands and shrink regularly, damage the electrical equipment, result in the stop supplying electricity for emergency repairs. Therefore, equipment should be maintained with cleaning and check the fastening on electrical equipment firmly at least once a year, which can be maintained in the cycle of annual maintenance or maintenance when encountering hot spots by checking the thermo vision.

(4) **Generator maintenance and repair services:** The Company sells spare parts, alternator engines, generators and standard installation of generator. The Company also has provided a service to update the generator set and ATS to be an automatic system, parallel generator (Synchronize Generator), control cabinet and various equipment Including repair, maintenance (Preventive Maintenance), service charge list or annual service contract. In addition, the Company is able to provide the repair or overhaul services for generator's customer by skilled technicians and modern equipment.



(5) **Design and installation of industrial electrical systems, both medium and low voltage systems:** For power users who need a comprehensive service from the initial construction to the power supply by designing skills and supervising with professional engineer.

(6) **Design and construction of substation (Substation):** The Company is the design recipient, installation and construction of 69-115 kV power substation for large power users to reduce the cost of electricity about 15-20 percent and will also make the power system efficiency.

(7) **Management system consulting:** The Company provides consulting services, ISO 9000 quality management system, ISO 14000 environmental management system, occupational health and safety management system OHSAS / TIS 18000 System for quality standards, testing laboratories and calibration of ISO / IEC 17025 and activity systems, suggestions, 5S activities, QCC HACCP etc. professional consultants who work together to create systems that are in line with the business requirements and comply with standards.

(8) **Calibration laboratory services:** The Company provides calibration services for electrical measuring instruments and dimensional calibration with a calibration laboratory that has been certified by the ISO / IEC 17025 standard laboratory testing and calibration system from the Office of Industrial Standards, Ministry of Industry. In addition, the Company gets ready for service to respond the customers with the Mobile Service Test which can test the transformer without the electricity. It can be display the test results at the onsite and send information through the internet immediately.

The Company has established service and sales centers in every region which is already have the equipment, transformers distribution reserve and skilled engineers who have experience in controlling each center provide all the time. There are 10 sales and service centers, as follows:



Service Center	Service Area
1. Bangkok Center	3 Provinces : Bangkok Samutprakarn Nontaburi
2. Chachoengsao Center	7 Provinces : Chonburi Chachoengsao Rayong Chanthaburi Prachinburi Sakaeo Trat
3. Ayutthaya Center	12 Provinces : Ayutthaya Pathumthani Angthong Nakhonnayok Saraburi Lopburi Singburi Chainat Uthaithani Nakhonsawan Phetchabol Phichit
4. Nakhonpathom Center	8 Provinces : Nakhonpathom Kanchanaburi Phetchaburi Prachuapkhirikhan Samutsakhon Samutsongkhram Ratchaburi Suphanburi
5. Konkaen Center	9 Provinces : Konkaen Udonthani Kalasin Loei Nakhonpanom Mukdahan Nongkhai Nongbualamphu Sakonnakhon
6. Nakhonratchasima Center	10 Provinces : Nakhonratchasima Chaiyaphum Buriram Roiet Surin Ubonratchatani Srisakat Amnatcharoen Mahasarakham Yasothon
7. Chiangmai Center	13 Provinces : Chiangmai Chiangrai Maehongson Payao Lamphun Lampang Nan Phrae Uttaradit Tak Sukhothai Kamphaengphet Phitsanulok
8. Songkhla Center	7 Provinces : Songkhla Trang Pattani Narathiwat Yala Satun Phattalung
9. Suratthani Center	4 Provinces : Suratthani Chumphon Ranong Nakhonsithummarat
10. Phuket Center	3 Provinces : Phuket Krabi Phangnga

3. Solar Farm

In 2010, the Company has established Solar Farm for generating electricity at Srimahapho District, Prachinburi Province, which has power capacity 0.627 Megawatt per year and selling to Provincial Electricity Authority (PEA) and received the adder supporting from PEA at rate 8 Baht per year in 10 years.

Then, in 2013 the Company has expanded the solar power plant project phase 2 at Prachinburi which located at the same location as phase 1 with capacity 0.627 megawatts per year. Total production capacity 1.26 megawatts per year.



In 2016, the Company got a job in the solar power generation project on the ground for government agencies and agricultural cooperatives. The Company agrees with the requirements of Bangbuathong agricultural cooperatives and the Company was all project developers from investment, design, procurement and construction of projects or was called EPC with the objective of producing, sending and selling electrical energy to the Metropolitan Electricity Authority. The purchase rate of electricity is not more than 5.66 baht per unit, fixed throughout the contract period of 25 years, located at Laharn Sub-district, Bang Bua Thong District, Nonthaburi Province with a capacity 3.35 megawatts per year.





4. Solar Energy Business

The Company is a manufacturer and distributor of Solar PV Module. We are a provider of design and installation of solar power systems and other renewable and consulting on energy conservation. The Company's solar panels certified by TIS 1843-2553 or equivalent to the international standard IEC 61215 and TIS 2580 or equivalent to the international standard IEC 61730. Solar cells, which generated the power from 5 watts to 340 watts, are from the Thai Industrial Standards Institute since September 28, 2017.

Solar Energy work can be divided according to the detail of products and services as follows:

- **Solar Cell**

The Company has a full capacity at 24 megawatts per year. In 2018, the Company produced only a small amount of solar cells at the solar cell factory at Amata City Industrial Estate, Rayong Province. That causes accounting expenses of machinery and equipment or impairment of assets. The Company will consider appropriate solutions by taking into account the impact on the Company and stakeholders are important.

- **Solar PV Module**

The Company manufactures and sells crystalline silicon solar modules from the customer orders (Made to Order). The Company can produce solar panels from 5 watts to 340 watts depending on the demand of customer. The Company's solar cell can be effective in converting solar energy into electrical energy which is approximately 18 percent of all solar energy received. Solar cell has 20-25 years lifetime.

Marketing and Competition

Marketing Policy of Product and Service

Competition Strategy

1. Distribution Transformer

The Company focuses on selling high quality distribution transformer. The factors supporting the production of quality transformers are below;

- Selection of quality materials such as silicon steel, coil, transformer oil, insulating paper etc. The materials purchased from domestic such as copper wire, transformer oil, etc. and foreign countries such as silicon steel Coil, cast resin etc.



- Using the modern machinery such as the folding fin, which is used to fold the long steel sheet into the fins to make the heat sink fins of the transformer wall must have the least connection. In order to prevent leakage of the tank and foil winding, which is a modern technology for producing low voltage coils to provide a balanced and efficient distribution of electricity resistance to the short circuit and maximum power surge which does not damage the coil.

- The Company has received technology from leading companies around the world such as Starkstrom-Geratebau GmbH, Germany, Westing House Co., Ltd., USA and Elco Co., Ltd., Israel, for example, to receive the technology of transformer distribution system such as sealed oil type and dry resin type from Starkstrom-Geratebau GmbH, Germany in the production and process. The Company realized the strengths and weaknesses of each technology in order to be able to use in the country appropriately.

- Executives and personnel have experienced in the distribution transformer system for a long time. They have been trained from leading companies around the world of transformer manufacturing technologies such as Westing House Co.,Ltd., USA, Elco Co.,Ltd., Israel Starkstrom-Geratebau GmbH, Germany, etc.

The production process of the distribution transformer system using modern machines and quality personnel. The Company's products have received a certificate of electrical quality testing in the resistance to short circuits from the KEMA Institute in Netherlands and CESI in Italy. In addition to the Company was the first manufacturers' transformer in the Thailand which has received ISO 9001 and ISO 14001 environmental management system. Being reliable in quality and being accepted from the public and private sectors both inside and outside the country.

2. Service

Transformer maintenance, repair services and electrical system maintenance of the Company are very important task because it prevents the severe damage from the accidents. The Company will focus on using 10 service centers nationwide. In providing customer service for inspection, maintenance, repair services and other electrical systems throughout 24 hours. So that, the Company able to take care customers almost every provinces and creating confidence for the customers that will receive professional services by checking, maintenance and repair completely and quickly.



3. Solar Energy

The Company focuses on the policy to produce quality solar panels with modern technology. The solar panels will be tested each panel prior to distribution to the customer to ensure the quality standards solar panels such as TIS 1843-2010 or equivalent to IEC 61215 and TIS 2580 or equivalent to IEC 61730 from the Thai Industrial Standards Institute.

Target group

1. Distribution transformer

The Oil Type Distribution Transformer will focus on enterprises customers and customers in various industries. The state enterprise customers such as Metropolitan Electricity Authority and Provincial Electricity Authority. The Company will always participate in tenders with both state enterprises which the Company can win the tender regularly. For customers in various industries, the focus will be on high-growth industries, which are important markets that use a large number of distribution transformers, including the automotive industry, petrochemical industry, construction material industry, communication industry, real estate industry, food industry agro-industry, textile industry hotel and tourism industry, etc. The sales to private customers will focus on sales through the following groups of customers:

- Major contractors: The Company makes a good relationship with related persons from engineers, procurement department to the highest level of management continuously to support the technical information and create activities between the management of both sides to closely monitor the work. There are weekly project meetings to summarize the progress until closing the sales.
- Medium to small contractors: The Company makes a good relationship with the top management to support information and to help other. Also the area for sales staff is clearly divided.
- The project owner: The Company provides the information about the project for accessing to the project owner. The Company will present to the project owner about the importance of selecting to use the transformer distribution with high-quality. The importance of long-assurance and realize to the transformer damages when using the transformer distribution with low-quality. The project owner will realize the quality and contractor to select the high quality product.



The target and marketing plan of dry type cast resin transformer distribution, focuses on the target groups as follows:

- High-rise building: The Company collects the entire system data from various departments to present the product into the sales channel and closely follow the results until the sale processes ended.

- The contractor group has to participate in the bidding for the electrical system in modification of the Metropolitan Electricity Authority: Metropolitan Electricity Authority has a policy to change the electrical building systems which it will change the oil distribution transformer into the dry type cast resin transformer distribution. Therefore, the Company follows the news of the tender for electrical system modification of the Metropolitan Electricity Authority and offering prices for the dry-type distribution transformers to contractors who participate in the bidding by coordinating with contractors who participated in the bidding, both in the design process, bidding, testing and inspection of working.

- The group have problems with the explosion of distribution transformers and replacement purchases: The Company prepares a plan to support the explosion of the distribution system transformer with competitors which will be continued every month consist of responsible accounting for buildings throughout the country and present to the customer that If the distribution transformer explodes. How to contact to alleviate the damage quickly which will lead to the sale of new distribution transformer systems.

- New building group: The Company focuses on providing technical information to designers for set technical data from the beginning of the project and closely follow until the project owner can procure the contractor including follow up throughout the sale processes ended.

The major distribution transformer customers in the country, most of them are government agencies such as Provincial Electricity Authority, Metropolitan Electricity Authority. For private clients that are famous companies. The Company's customers in 2018 are private customers in the country, Government and foreign customers equal to 810.80, 82.82 and 141.82 million baht or 78.30%, 8.00% and 13.70% respectively.



2. Service

Target group of service work are follows:

- The private customers who are already using distribution transformers: The Company has guaranteed the using of distribution transformer for 10 years. When the insurance period expires, most customers still use the service continued. For the maintenance of other brands transformers, the Company uses the advantage from service and sales center which has nationwide service area, to offer the service for maintenance and repair transformers to customers. The Company is able to offer electrical system services together with the sale of distribution transformers, maintenance and repair services for distribution transformers such as MDB (Main Distribution Board), high-pressure electrical contractor work etc.

- Industrial factories that require safety certifications in electrical systems within the factory: Due to government regulations, the factory must have a certificate of safety in the electrical system within the factory. Therefore, it is an opportunity to expand the sales electrical inspection services, energy conservation consulting work for both the control building and the control factory.

- Large industrial factory: The Company has focused on sales, service, maintenance and repair of electrical systems used in large industrial plants.

- The government sector, will participate in the bidding for sub-station construction with government agencies every year. Examples of projects for the construction of substation that the Company has got are Wihandaeng Power Station, Nongyai Power Station and Saiyok Power Station. The Company expects to participate in the bidding for substation construction in the following years.

3. Solar energy

The Company have both domestic and international customers which were group of customers who operate solar panel business, solar panel installation services and government agencies that are supported by government policies. Including private agencies, who interested investment into the solar rooftop installation for reducing the electricity costs. Also receive benefits from the BOI promotion, which can deduct 3 years corporate income tax at 50% the investment together with the exemption of import duty on machinery.



Price policy

1. Distribution transformer

In determining for the price of the distribution transformer products, the Company determines the price at a level similar to the competitors by relying on product quality, product design and after-sales service as a selling point. Pricing uses the raw material cost basis plus production cost, sales and management cost and the desired profit margin. The desired profit margin depends on many factors such as customer relations, order quantity, the production capacity, etc.

2. Service work

In determining for the service price, the Company determines the price at the appropriate level, which will have a price close to the price of the competitor. The Company focuses on quality and speed of service to maintain good relationships with long-term customers which will make the Company can offer sales services and other products.

3. Solar energy

In determining for the solar panels price, the Company determines the price at the price level that is close to the competitors also using the costing criteria production costs plus other costs and the desired profit margin. However, the solar panel prices will vary according to the price of raw materials is solar cell because it is very important and high value for solar panel's production.

Distribution channels

1. Distribution transformer

Distribution channels for transformers can be divided into 2 markets, namely domestic and international markets.

Domestic markets can be classified into 2 distribution channels are follows.

- Direct sales, which will have local sales and service centers all 10 centers as an important sales channel. It can be classified customers in 2 groups is government sector customers: Metropolitan Electricity Authority, Provincial Electricity Authority and other government agencies which will be sold through direct bidding. Private clients sector customers: industrial factories, hotels, hospitals, office buildings or large residences, etc. to sell for customers who are expanding business or owning projects with the demand of electricity in the operation.



- Sales through intermediaries, this group of customers are various contractors which is the bidder of the project both from the government and the private sector, then orders from the company again. At present, the proportion of distribution transformers in the domestic distribution system in 2018 is about 90.79% of private customers and 9.27% of the government sector customers. In 2016-2018, the proportion of distribution transformers by customer type can be shown according to the following table.

(Unit: Million baht)

Customer Type/Year	2016		2017		2018	
	Revenue	%	Revenue	%	Revenue	%
The private sector	902.69	88.85	850.88	69.68	810.80	90.73
The government & state enterprise	113.31	11.15	370.25	30.32	82.82	9.27
Total	1,016.00	100.00	1,221.13	100.00	893.62	100.00

International market, the Company has both sales through dealers and direct sales. The international market is considered as a target for future market expansion. Especially, customers in the Southeast Asian and the Middle East which has low consumption per capita statistics along with the consumption of the distribution transformer system still requires import from abroad. In addition, there are many foreign investors who are interesting in expanding the investment base increasingly, so the trends that are demanded the electricity and the distributed transformers are definitely increased.

However, the venue from selling the electrical distributed transformers in domestic market is 86.30% of the venue from total selling the distributed transformers. The venue from selling the distributed transformers in international markets is 13.70% of the total venues, yet we speculate the venue from the international markets will be increased by focusing on the international markets more than ever because the customers recognize in our distributed transformers. The venue from selling the distributed transformers from 2016-2018 can be divided as table below:



Market	2016		2017		2018	
	Revenue	%	Revenue	%	Revenue	%
Domestic	1,016.00	85.21	1,221.13	90.13	893.62	86.30
International	176.33	14.79	133.65	9.87	141.82	13.70
Total	1,192.33	100.00	1,354.78	100.00	1,035.44	100.00

Table of the value that customers in each country order the company's transformers in 2018

Country	Value (Million Baht)	% of Selling*
Laos	76.36	7.37
Malaysia	31.59	3.05
Brunei	33.63	3.25
Hongkong	0.25	0.02

2. Service

In 2018, the proportion of the Company's services revenue, most of them are private customers. The Company offers sales services and sell distribution transformers at the same time. In addition, the Company has 10 service and sales centers which be the important force in the sale of services because there are many opportunities to meet with customers, includes customers who are technicians provide maintenance for transformers and will also offer sales services simultaneously or in cases when customers have problems with the distribution transformer, they will contact the service center first and will get convenient and faster in providing services. The Company has provided maintenance and repair services for all brands of transformers.

3. Solar energy

Currently, the proportion of the installation of the solar power generation system of the Company in 2018 was all private customers. Distribution channels, the Company had a marketing team to meet customers to regularly sell products and to update news for participate in various projects about the solar power of government agencies and private. That has been supported by government policies such as solar power generation projects or the project of installing solar roof for the benefit of electricity production with their own business.



Industry Conditions and Competition

1. Transformer

Electricity is a fundamental factor for economic development and the expansion of the demand for electricity will be consistent with the expansion of gross domestic product. It showed that the transformer industry in domestic are likely to continue growth in line with the country's economic conditions.

The international market, the customers of the Company are ASEAN countries such as Laos, Malaysia, Brunei, etc. and South Asian countries such as India, Nepal etc. and countries in Australia continent. It showed that each country has a growth rate of gross domestic product (GDP) is higher, which is consistent with the growth rate of electrical energy demand. When the economy expands and need for more electricity, it is necessary to install more transformers in order to have adequate uses.

2. Service

Transformer maintenance and repair service industry, which is still a steady growth trend as sales of transformers which are increasing that make the service industry tend to grow continuously. As well as the service industry can grow from electrical system services such as safety certification in the electrical system of the factory, maintenance services and electrical systems used in large industrial plants.

3. Solar energy

The shortage of fossil energy that will occur in the future. Environmental and disaster problems from global warming with the solar cell technology that has been developed to be efficient which caused the price to drop. It is a driving force for investors to become more interested in this type of energy production business. Expected that the demand for energy from solar PV for the next 5 years of leading countries such as China, Japan and America will account for 80 % of the global demand which will drive the expansion of production. Therefore, solar cells are a business that is likely with a growing trend and new industry with very high value.

The electricity generation from solar energy in Thailand that is high growing too. From the statistics of the Department of Alternative Energy Development and Efficiency, it showed that the performance of solar energy has increased continuously every year.



Competition

1. Transformer

At present, there are many transformer manufacturers in the market which caused resulting in higher competition than the past, but the Company still has the highest number of distribution transformer sales average from 2016-2018 and it has an average market share of transformer distribution system about 20% which shows that the company is a leader of the distribution transformer industry in Thailand.

For the competition in the international market, the Company has established partnerships with foreign operators in order to expand the production base, expand customer base and exchange various technologies.

2. Service

The Company is a leader in the maintenance and repair service's the transformer after sales because the Company have the advantages from being a major producer and there are 10 service centers in the country, spread throughout the region by receive notification 24 hours. That makes the competition in the service business still not severe.

3. Solar energy

At present, the solar energy industry in the country is quite high competitive because entrepreneurs are increasingly interested in this industry. However, the Company saw the opportunity to sell solar panels into the foreign markets with relatively high growth rates. Especially, neighbor countries such as Myanmar, Laos and Vietnam etc.

For the solar power plant business of the Company is the distribution of electricity to government agencies such as the Metropolitan Electricity Authority and the Provincial Electricity Authority. Therefore, it is without business competition.

Procurement of products and services

1. Transformer

The Company produces distribution transformers that have power at 1-30,000 kV amperes (kVA) and have a maximum voltage of no more than 36 kV under the trademark "Ekarat". There are steel core assemblies, coils and internal distribution transformer equipment, located at 190 Moo 6, Tha Sa-An Subdistrict, Bang Pakong District, Chachoengsao Province. The metal body factory is located at 260 Moo 6, Bangpakong-Chachoengsao Road, Tha Sa-an Subdistrict, Bang Pakong District, Chachoengsao Province.



The Company has the production capacity and capacity load during 2016-2018 as shown below.

Production capacity	2016	2017	2018
Production capacity (kVA.)*	2,850,000	2,850,000	2,850,000
Volume (kVA.)	2,198,515	2,608,514	2,054,277
Capacity load (%)	77.14	91.53	72.08

* Production capacity is calculated from 1 full time work (8 hours) and additional 1-2 hours of overtime work per day.

The raw materials used in the production of distribution transformers are Copper wire, Silicon steel, Transformer oil, Steel of tank body, Copper tail plate, Coil Cast Resin and other equipment, there are both purchasing from domestic and overseas with a similar proportion. The raw materials ordered from domestic are Transformer oil, Steel of tank body, Copper wire, Enameled copper wire, etc. The raw materials imported from foreign countries are Silicon, Copper coil, Coil Cast Resin which can show the details of the order value of raw materials that can be classified according to the source of purchase as shown in the table below.

(Unit : Million Baht)

Source of raw materials	2016		2017		2018	
	Value	%	Value	%	Value	%
Domestic	178.34	34.2	256.51	48.9	204.00	38.58
Foreign	343.12	65.8	267.86	51.1	324.77	61.42
Total	521.46	100.00	524.37	100.00	528.76	100.00

2. Service

In terms of service, the Company has prepared more than 100 distribution transformers for customers to borrow or rent and had spare parts for maintenance and repair of distribution transformers to serve customers in the case of their transformers accident or maintenance schedules. The Company had 10 service centers and sales throughout the country to prepare for services to customers. Including, there are the calibration of electrical measurement and dimension calibration services by testing and calibration laboratories that have received ISO / IEC 17025 standards from the Office of Industrial Standards Ministry of Industry which is ready to serve customers. Our personnel have highly knowledgeable and experienced, they have to pass the training course on all service standards before the actual operation.



3. Solar energy

- **Solar Cell**

The important raw material for the production of solar cell is wafer which don't produced in Thailand. Therefore, the Company have to import wafers from foreign manufacturers to be used to produce solar panels. After that, it was sent to sell in a foreign country. Another part is used to produce solar panels for distribution in domestic.

- **Solar PV Module**

The Company manufactures and sells crystalline silicon solar modules from the customer orders (Made to Order). The Company has selected quality raw materials both in domestic and abroad which has reasonable price for quality solar panel production and had competitive price in the market.

From the production of both solar cells and solar panels, the company had a CO certificates for export to countries in Europe and America.

- **Solar Farm**

Solar power plants of the Company totally were 2 locations and located at Si MahaPho District, Prachinburi Province and Bang Bua Thong District, Nonthaburi Province. The Company was all project developers from investment, design, procurement and construction. The objective was to produce, send and sell electricity to the Provincial Electricity Authority and the Metropolitan Electricity Authority.

The Company was the manufacturer of some parts project, including solar panels and transformers as well as purchasing the other equipment for the development of the entire project. Therefore, the product warranty form is the direct guarantee from the supplier of each type of equipment directly to the Company. In the event that the solar panel or transformer is damaged, the Company can replace the solar panel or the problem with the transformer immediately because the company is the manufacturer of those devices.



Environmental impact

The Company operates the business of manufacturing transformers distribution systems and solar panels. In the production process, some steps are required painting, piecework cleaning that occurs with an impact on the environment if the waste disposal system are not good. The Company is aware of the potential impact, Therefore, the Company has created an efficient system to eliminate the color spray that occurs from the production process that do not be harmful to workers and neighboring communities. The Company has changed to use raw materials that do not contain toxic chemicals on the environment such as below:

- Using of watercolors to reduce environmental impacts by using water as an ingredient instead of oil paint that requires thinner as a solvent.
- Using of environmentally friendly oil stain remover and using hand washing powder to wash oil stains in maintenance work.
- Using of raw materials that do not contain heavy metals which can be left behind and destroy the environment.

The Company provides training and recommend preventive methods about the operations that may cause accidents including an emergency action plan which have a practicing at least 2 times per year. In addition, the Company has also set up the Committee of Occupational Safety Health and Working Environment which is responsible to prevent various impacts. The Company has been certified with ISO 14001 environmental management system standard which shows the Company had a good environmental management system and international standards.

In addition, the Company has also used various systems to control work and the production quality such as ISO 9001: 2000 system, the health management system and TIS 18001 for safety and reduce the risk of accidents during operations. The Company had operated since 1981 and had no history of disputes or lawsuits from communities nearby the factory or being fined by government agencies related with the environment.

Outstanding Works

Company had the distribution transformers that has been ordered and preparing to deliver for customers but not yet delivered on December 31, 2018 in totally 376 units, the amount was 216.71 Million Baht.

For Solar energy, there was no undelivered jobs as of December 31, 2018.



The Company is aware of the important of risk management of the organization by forming the Risk Management Committee to evaluate the potential risk and assign the strategies to conform to the objectives and goals of the Company. However, the Company had the Risk Committee to prevent the risk, but in 2018 the Company and its subsidiary still had the risk factors as shown below:

1. Distribution Transformer Business Risk

1.1 Risk related to relying on specific Distribution Transformer's customer

Most of the Company's revenue came from the sale of Distribution Transformer. In 2016, 2017, and 2018, the Company had the sale revenue from sales of Distribution Transformer to the Metropolitan Electric Authority and the Provincial Electric Authority in the amounted 113.31 Million Baht, 370.24 Million Baht, and 82.82 Million Baht or 7.80%, 23.77%, and 6.64%, respectively, of the transformer revenue and Services revenue. However, considering in the total revenue of every customer sector in 2018 is 1,464.21 Million Baht decreased by 217.05 Million Baht compared to year 2017 or decreased 12.91 % of the transformer revenue and Services revenue. The proportion of the revenue in government sector in 2017 is 370.24 Million Baht and in 2018 was 82.82 Million Baht decreased by 287.42 Million Baht or decreased by 77.63%.

Moreover, the revenue from government sector in 2018 decreased from the participation in the auction have to require a very low price combined with the price of main raw material was increased. The approach to reduce the risk of dependence on specific distribution transformer's customer by continue to seek new clients for increasing revenue.

1.2 Risk related to the unstable of Distribution Transformer's raw materials price

In 2018, the Company had the major revenue from the sale of Distribution Transformer. In the production of Distribution Transformer used the local raw material and imported material likes Silicon steel, Copper wire, Transformer oil, etc. Therefore, the Company may affect from the unstable of the material price in the global market. For example, the average price of Silicon steel procured in 2018 compared to 2017 decreased by 0.84 %, the average price of Copper wire procured in 2018 compared to 2017 increased by 13.10 %, and the average price of Transformer oil procured in 2018 compared to 2017 increased by 10.73% from the factor aforesaid was affected to the total cost of production of transformers. The Company has improved the development so that the costs are continuously reduced. However, the Company planed and stocked the materials for the production for 3 months.



1.3 Risk related to the quality of the Distribution Transformer's raw material

Distribution Transformer is a very important part in the electricity system. If the transformer malfunctions the effect will cause the damage of the industry and resident. Therefore, we need to select the raw material likes Silicon steel, Copper wire, Copper plate, Insulator paper, transformer oil, and transformer tank, in the production of high quality distribution transformer. To avoid the risk from low quality of raw material, the Company has the procedure follow ISO 9001 standard which comprise with design, assign the characteristic of raw materials, monitoring and testing. Determine the properties of raw materials used in the production of transformers with examination, testing, selection of suppliers, raw material inspection to ensure that the raw materials was ordered by the Company, according to the specified properties with standard quality

1.4 Risk related to relying on skilled staffs to produce the Distribution Transformer

In 2018, 84.14% of the revenue from sale of Distribution Transformer and Services came from the sale of Distribution Transformer which was rely on the experience staffs to produce and develop the quality of Distribution Transformer to be accepted. Therefore, relying on the skilled staffs in specific field of work is important to producing Distribution Transformer and operation of the Company. Anyway, with the good operation system awarded ISO 9001, ISO standard has the operating manual, training, and operation process. In case of the Company recruit a new staff, the standard will help the new comer to understand the process of work which will make a new staff can operate soon. In additional, the Company has the training program to develop the staff continuously. The Company also awarded the benefit or has the policy to stimulate the staffs. For example, Provident Fund, Bonuses, Loyalty awards, this will reduce the turn over rate of the staffs.

2. Solar Energy Business Risk

Risk related to the government power purchasing policy.

In 2018, the government has a policy and promotion of the production electricity with many solar projects from the previous year, both Solar Roof and Solar Farm as follows:



2.1 Risk related Anti-Dumping Law.

Risk related Anti-Dumping Law's the Europe Union and the United States about Solar Cell from China. Chinese entrepreneurs have set up factories to produce cells and solar cells in Thailand more than past, in order to avoid that law and to get the Certificate of Origin. That make higher competition in Solar Cell. The Company had to find ways to reduce the operating cost to be competitive.

2.2 Risk from the government's energy purchase.

2.2.1 In January 2015, the Office of Investment Promotion (BOI) announced the benefits for general entrepreneurs who have installed the Solar Rooftop system for internal use. Therefore, which was another channel that the Company can join to work.

2.3 Power Development Plan (PDP)

From the plan from 2018-2037, there will be an increase in the use of renewable energy from solar energy, about 10,000 mw (500 mw per year), divided by the government sector ratio of about 400 mw / year. The public sector is about 100 mw / year. That is a great opportunity for the Company to expand the customer base.

3. Financial Risk

3.1 Risk from interest rate fluctuations

The Company has the risk due to the uncertainty of the interest rate in the market due to the Company has the bank deposit and credit line in a commercial bank. The bank code the interest rate according to the nature and purpose of the amount used as follows:

1. Facilities limit, which the rate of MLR per year.
2. L/C and/or T/R and/or short term loan or L/G, if the loan is Baht currency the rate is MOR per year; and if the loan is foreign currency the rate might be SIBOR or LIBOR from the highest rate which the bank offer or determine by the bank in each time in the day before the beginning of interest terms on each term 2 working days.

Therefore, the Company might have the uncertainty of the interest rate that might change from the situation of the market. The interest rate in 2017 and 2018 for MLR is 6.25% and 6.25% per annum; MOR is 7.12% and 7.12% per annum, respectively, nothing to change in there. Therefore the Company didn't use the financial derivative to protect the said risk.



3.2 Foreign exchange rate risk

The Company order the material to produce the Distribution Transformer from overseas likes Silicon steel, Coil Cast Resin. The bid and payment of raw materials will be mainly used in US dollars. However, the exchange rate has been closely monitored while considering other factors associated to reduce the risk of exchange rate fluctuations and increase efficiency in financial management.

4. Economy and Political Risk

From the slightly economic growth caused from the change in political situation and continuously effect through 2018, the economic forecast from economic agencies forecast that, Thailand's GDP has grown up 3.8-4.0 % mainly from the government investment in infrastructure and energy. In industrial and export, there is no significant signal of growth in short term from the lack of confident, if the government can accelerate the investment project within the first half of year, the expansion of economic can be achieve the target.

However, Overview of the domestic economic were continuously slow down but there is still a group of renewable energy markets both in the country and neighboring countries that have a lot of demand for transformers and solar panels, especially in 2018 continue to 2019, in which this market is mainly quality competition. It is an important business opportunity to push up sales to compensate for the recession and other industries.

However, in the case of a trade dispute between the United States and China may affect the operation. That causing the amount of products in the country more than the demand and high competition.

5.ASEAN Economic Community Risk

From the joining into AEC, Thailand has joined as an ASEAN Economic Community too. The risk that will arise from products of ASEAN countries entering the Thailand market without tax burden according to Thai entrepreneurs and entrepreneurs in the ASEAN region to be more competitive. Consumers could choose quality products and get more benefits. However, from the past, Thailand's Transformer industry was stronger than the others in ASEAN that be the opportunity to expand the business to overseas. Therefore, Ekarat Engineering Public Company Limited, the leader in transformer business of Thailand might receive the benefit from joining AEC too.



Company Information

Company Name

EKARAT ENGINEERING PUBLIC COMPANY LIMITED

Nature of business

- Production and distribution of distribution transformers (Distribution Transformer) with power from 1 kVA to 30,000 kVA, maximum voltage not exceeding 36 kV
- Electrical maintenance and repair services, design, installation and maintenance of electrical systems and construction of substation
- Manufacture and sell solar cells and solar panels which can produce solar panels from 30 watts to 340 watts, including the design, construction, installation, maintenance of electricity systems from solar cells

Address

9/291, UM Tower, 28th Floor, Ramkhamhaeng Road,
Suan Luang Subdistrict, Suan Luang District, Bangkok 10250

Registration no.

0107537002711

Website

<http://www.ekarat.co.th>

Telephone No.

02-719-8777 (Automatic 30 lines)

Fax No.

02-719-8760-2

Paid-up Capital

1,343,289,404 shares

Service Center

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Phra Khanong District, Bangkok 10260
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2. Chachoengsao Center
260/6 Moo 6, Tha Sa-An Subdistrict, Bang Pakong District,
Chachoengsao 24130
Tel. (038)-530-213 Fax (038)-530-214
3. Ayutthaya Center
26/7 Moo 2, Asia Road (Bang Pa-in - Nakhon Sawan),
Thanu Sub-district Uthai District, Ayutthaya 13000
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6. Nakhon Ratchasima Center 2175/2 Moo 6, Suebsiri Road, Nai Mueang Subdistrict, Mueang District Nakhon Ratchasima 30000
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10. Phuket Center 101/220 Moo 6, Ratsada Subdistrict, Mueang District, Phuket 83000
Tel. (076) -307-570 Fax (076) -307-571



Information of the juristic person that the company 99.99% shareholding

Company name	EKARAT SOLAR COMPANY LIMITED
Nature of business	Production and assembly of solar cells and solar panels Including tools and equipment in all solar power generation systems Including the design, construction, installation, maintenance of electricity systems from solar cells and other renewable energy and consulting on energy conservation
Address	9/291, UM Tower, 28th Floor, Ramkhamhaeng Road Suan Luang Subdistrict, Suan Luang District, Bangkok 10250
Phone No.	02-719-8777
Fax No.	02-719-8760
Website	http://www.ekarat.co.th

Company name	EKARAT ENERGY COMPANY LIMITED
Nature of business	Operate in all energy business Including investment advisory, engineering and management services, a distributor investing in the energy business industry both inside and outside the country, producing and selling electricity from solar cells
Address	9/291, UM Tower, 28th Floor, Ramkhamhaeng Road, Suan Luang Subdistrict, Suan Luang District, Bangkok 10250
Phone No.	02-719-8777
Fax No.	02-719-8760
Website	http://www.ekarat.co.th

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Securities Registrar

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Fax No.	02-009-9991



Auditor

Auditor's name

- | | |
|------------------------------|----------------|
| 1. Miss Yupin Chumjai, | C.P.A No. 8622 |
| 2. Ms. Susan Eiamvanicha, | C.P.A No. 4306 |
| 3. Mr. Suchat Panichcharoen, | C.P.A No. 4475 |
| 4. Ms. Chuen Tachommen, | C.P.A No. 7570 |
| 5. Miss Wandee Eiamvanicha, | C.P.A No. 8210 |
| 6. Mr. Kiattisak Vanichanon | C.P.A No. 9922 |

Company Name

SP AUDIT COMPANY LIMITED

Address

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Legal counsel

Lawyer Name

Mr.Pinya Champawong

Company name

THEPNITI LAW OFFICE COMPANY LIMITED

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Company Secretary

Name-Surname

Miss Nuanchan Sirikun

Address to contact

EKARAT ENGINEERING PUBLIC COMPANY LIMITED
9/291, UM Tower, 28th Floor, Ramkhamhaeng Road,
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Shareholders Structure

List of top 10 Shareholders as at December 31, 2018

Shareholders' Name	Shares	(%)
1. KV assets Co., Ltd.*	170,000,000	12.656
2. Miss Teeraya Kanokpruk	128,550,000	9.570
3. Mr. Kongkrai Kanokpruk	126,242,800	9.398
4. Mr. Poompat Numpaisarn	56,300,000	4.191
5. Mr. Wanchai Poolsap	36,777,300	2.738
6. Miss Uravee Kanokpruk	31,000,000	2.308
7. Mrs. Paradee Chiamchanya	23,000,000	1.712
8. Mr. Jeerapong Itsarangkul Na Ayuttaya	20,000,000	1.489
9. Mr. Pornchai Tongvanij	15,685,487	1.168
10. Mrs.Srinuan krataiwongprachan	10,800,000	0.804
Total	618,355,587	46.033

*Data from Thailand Securities Depository Co., Ltd. for the depositor



Remarks : * List of KV Asset Co., Ltd. Shareholders

Shareholders' Name	Shares	(%)
1. Miss Rompissri Noichai boon	99,275	18.05
2. Mr. Vornpahol Sangtian	41,250	7.50
3. Miss Pimolwan Sangtian	41,250	7.50
4. Miss Wanravee Topongkasame	17,188	3.13
5. Mrs. Daranee Kantamara	27,500	5.00
6. Mr. Danucha Noichai boon	48,125	8.75
7. Mr. Daroonwat Noichai boon	27,500	5.00
8. Miss Chompicha Noichai boon	99,275	18.05
9. Mr. Ruengrat Noichai boon	17,188	3.13
10. Mr. Visitsak Noichai boon	17,187	3.12
11. Miss Peerayachan Noichai boon	97,075	17.65
12. Miss Khanittha Topongkasame	17,187	3.12
Total	550,000	100.00



Number of Company's Stock holding by the Directors as of December 31, 2018

Name	Position(s)	Shares			
		December 30, 2017		December 30, 2018	
		Amount	(%)	Amount	(%)
Mr. Vichit Yamboonruang	Independent Director / Chairman of the Board	1,407,310	0.105	1,407,310	0.105
Mr. Vinai Vittawasarnvej	Independent Director / Chairman of Audit Committee	-	-	-	-
Mr. Pitak Chaicharoen	Independent Director / Audit Committee / Chairman of Nomination and Remuneration Committee	340,544	0.025	340,544	0.025
Mr. Wara Tongprasin	Independent Director / Audit Committee	108,039	0.008	39	0.000
Mr. Chatri Siripanichkorn	Independent Director / Nomination and Remuneration Committee	-	-	-	-
Mr. Wiwat Sangtian	Director	170,000	0.013	170,000	0.013
Miss Urawee Kanokpruk	Director / Nomination and Remuneration Committee	26,000,000	1.936	31,000,000	2.308
Mr. Danucha Noichaiboon	Managing Director / Nomination and Remuneration Committee / Chairman of Risk Management Committee	1,271,111	0.095	-	-
Mr. Anan Santichewasatian	Director / Risk Management Committee	-	-	-	-
Mrs. Daranee Kantamara	Director	1,895,453	0.141	1,895,453	0.141
Total		31,192,457	2.322	34,813,346	2.592



Dividend Payment Policy

The company and the subsidiary have the dividend policy to pay the dividend to the shareholders about 50% of Net profit after corporate income tax and legal reserve each year. Therefore, the company's Board of Directors is able to acts inappropriate with this policy time by time under the condition to use the profit in the best interest for shareholders likes pay back the loan, use for investment or other subject related to the company operation. However, the dividend payment must approve by the Annual General Meeting and approved by the Board of Directors.

The Annual General Meeting of Shareholders year 2018 held on April 30, 2018 has approved the appropriation of profits from operations and pay dividend for year 2017 because the company had revenue from the consolidated financial statements of 1,732.27 Million Baht with net profit of 44.30 Million Baht and income from the separate financial statements 1,736.37 Million Baht with net profit of 50.87 Million Baht as detailed below.

- Allocated as legal reserve in the amount of 2,543,746.30 Baht
- Payment of cash dividend at the rate of Baht 0.03 per share for 1,343,289,404 shares, with the total amount of 40,298,682.12 Baht.

The Company's management structure is composed of the Board of Directors and the management. The Board of Directors has altogether 10 members, i.e. three executive directors and 7 non-executive directors. Of all the members, five are independent directors, representing a half of the total Board members.

The Board has appointed four Board committees, namely Audit Committee, Nomination and Remuneration Committee, Risk Management Committee and Board of Management which composed of qualified persons by section 68 of the Public Limited Company Act BE 2535.

The Board of Directors

The Board of Directors has the ultimate responsibility for the administration of the Company's affairs under the Company's Articles of Association which requires that the Board consists at least 5 directors, and that no less than half of the Directors must reside in Thailand. At the Company's Annual General Meeting of Shareholders, one-third of the Directors are required to resign from their position, and new Directors are to be elected and the Directors who have resigned may be re-elected.

There were 10 Directors in the Board of Directors as at December 31, 2018 as follow:

Name	Position	Appoint Date
1. Mr.Vichit Yamboonruang	Independent Director / Chairman of the Board	February 28, 2011
2. Mr.Vinai Vittawasgarnvej	Independent Director / Chairman of Audit Committee	June 11, 2012
3. Mr.Pitak Chaicharoen	Independent Director / Chairman of Nomination and Remuneration Committee / Audit Committee	February 21, 2007
4. Mr.Wara Tongprasin	Independent Director / Audit Committee	June 17, 2009
5. Mr.Chatri Siripanichkorn	Independent Director / Nomination and Remuneration Committee	July 12, 2016
6. Mr.Wiwat Sangtian	Director	June 25, 2014
7. Miss Urawee Kanokpruk	Director / Nomination and Remuneration Committee	February 28, 2011
8. Mr.Danucha Noichai boon	Director /Chairman of Risk Management Committee / Nomination and Remuneration Committee / Managing Director	January 15, 2011
9. Mr.Anan Santichewasatian	Director / Risk Management Committee	January 31, 2007
10. Mrs.Daranee Kantamara	Director	January 15, 2011



Directors authorized to sign in binding the Company

Authorized directors: Either Mr.Danucha Noichaiboon or Mr.Anan Santichewasatian or Mrs.Daranee Kantamara, making up two signatories to bind the Company, with the Company seal affixed.

Scope of power and duties of the Board of Directors

The directors shall sincerely and faithfully perform their duties and carefully act in the best interest of the Company to be in accordance with the objectives, rules and regulations of the Company and the resolution of the shareholders' meeting and the matter legally required the approval of the shareholders' meeting. The conclusion of scope of power and duties of the Board of Directors are as follow:

1. Prescribe the Corporate Governance of the company and acting in the best interest of shareholders by performing its duties with responsibility, faithfulness and honesty under laws, the Company's Articles of Association and the resolution of Shareholders' Meeting.
2. Reviewing the operating plan, budgets, business goals and business policies including examine and monitor the company performance for the stability and benefits of the balance of all parties.
3. Defining and reviewing the Organization Management Structure, the Board of Directors Diversity for the Board's performance appropriate for achieving the objectives and goals of business operations.
4. Consider, and determine the company rules, codes and regulations including appropriate remuneration structure along with business goals.
5. Specifying risk management policies and overseeing to ensure effective risk management systems with reviewing and assessing the systems periodically.
6. Issue the Balance sheet and Income statement as of the end of company account period which audit by the company auditor and submit to the shareholders' meeting for the approval.
7. Appoint the annual general meeting of shareholder at least once a year and the director's meeting at least once a quarter. Each directors should attend the meetings not less than 75% of total Board of Directors Meetings.
8. Overseeing and monitoring to ensure the selection and nomination process of Deputy Managing Director or above positions is carried out transparently.



9. Appoint and authorize one or many directors or the third party to perform an action for the Board of Directors under the control of the Board of Directors; or gland the power to a person to perform as the Board of Directors in the period of time including the demotion and modification of the power.

10. Reviewing top executives development plans and the succession plan and overseeing to ensure the effective performance assessment of top executives on an annual basis.

11. Assessing the performances of the Board of Directors annually by performing two types of assessments, namely that of the Board and its Sub-committees as a whole and that of each individual director as a self-assessment with monitoring the assessment results of the Board.

12. Recognizing the roles, duties and responsibilities of the Board of directors, respecting the rights of shareholders ensuring the equitable and transparent treatment of shareholders and other stakeholders and receive accurate information.

13. Developing their knowledge and competency related to their duties consistently through courses or curricula related to directorial duties of seminars that enhance their knowledge.

By the power and authorities mentioned above, the power and authorities is not including the related transaction, alien of enterprise, acquisition and disposition of assets by rules and regulations of The Stock Exchange of Thailand and the company must respect the rules and regulation of The Stock Exchange of Thailand in the matter of transactions. Furthermore, the power and authorities above are not including to others transaction that conduct by the company's rule and regulations which need the approval of shareholders' meeting.

Scope of power and duties of Chairman of the Board

Chairman of the Board has power, duties and responsibility as follow:

1. The Chairman has the role of overseeing policy advocacy and strategic performing manner of the company's management including giving recommendation and support the operating of the company's management but this entitle shall not participate in the daily operation.

2. Preside as chairman of the Board of Directors Meeting and shareholders meeting.

3. Encourage all directors to participate in the meeting as well as monitoring the Board of Directors Meeting and shareholders meeting effectively and successfully.

4. Strengthen the relationship between the Executive and non-Executive Directors and between the Board and Management.



Qualifications of Directors

Directors must be qualified and not disqualified under the Companies Act, for example;

- Not more than 5 directors in listed companies in the Stock Exchange of Thailand.
- Never been sentenced by final judgment to imprisonment. Except for an offense committed through negligence or a petty offense.
- Must not be a political official, unless being a director in accordance with the law.
- Not holding any position in the political parties or officials of political parties.
- Never be fired or dismissed because of malpractice.

The Board of Director's Meeting

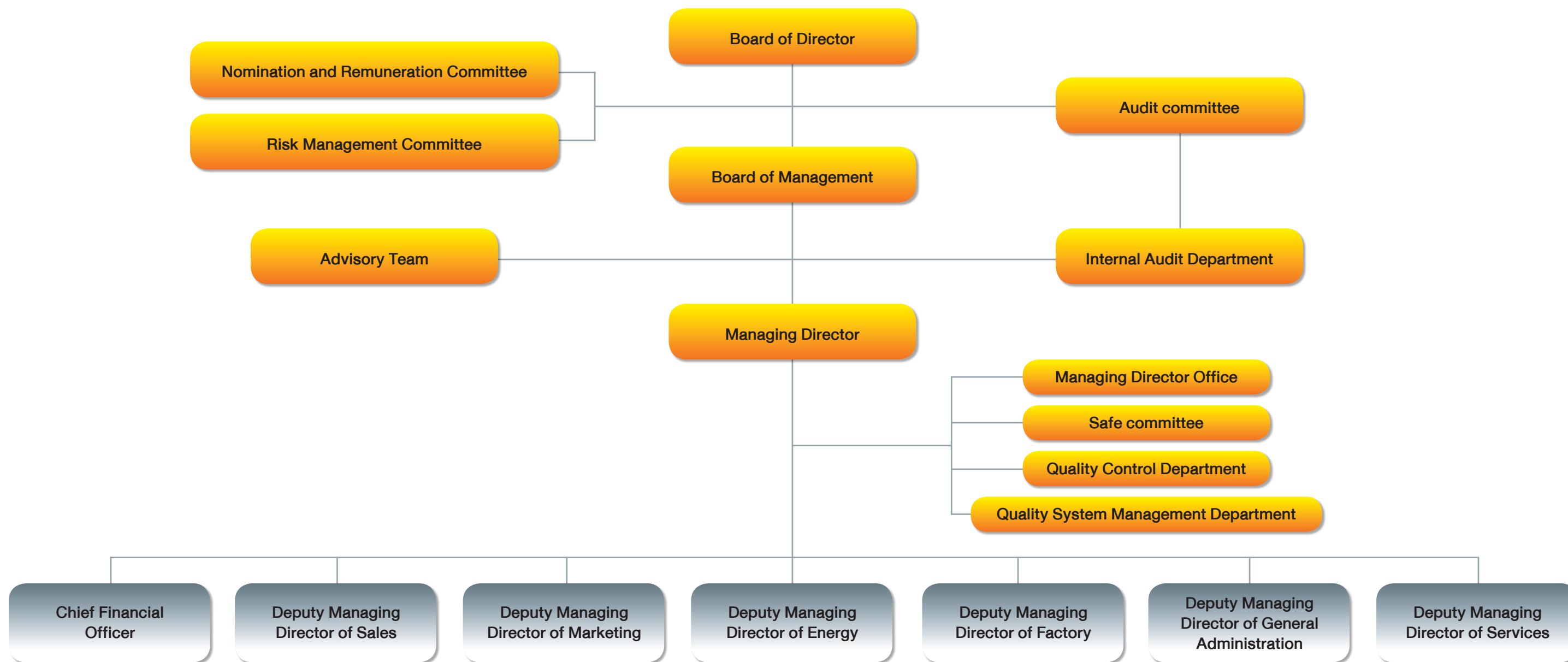
1. The meeting of the Board of Directors shall be scheduled in advance and at least once every three months at the head office or branches or nearby provinces.
2. The director shall attend at least 75% of all the board meetings held during the year.
3. The quorum of not less than two-thirds of all Board members is eligible to vote at the meeting to pass a resolution.
4. Invitation, details of the meeting and supporting documents shall be sent to each director at least 7 days in advance of the meeting date.
5. The Company Secretary is responsible for preparing the minutes of meeting to be submitted to the Board of Directors for approval in the first agenda of the next meeting and shall certificated by Chairman of the Board.



In 2018, the Company held a total of eight Board of Directors' meetings. Details of meeting attendance by the individual directors are as tabulated below:

Name	Position	The Board of Director's Meeting	
		Number of Meeting	Number of Attendance
Mr.Vichit Yamboonruang	Chairman of the Board Independent Director	8	8
Mr.Vinai Vittawasarnvej	Independent Director	8	7
Mr.Pitak Chaicharoen	Independent Director	8	8
Mr.Wara Tongprasin	Independent Director	8	7
Mr.Chattri Siripanichkorn	Independent Director	8	8
Mr. Wiwat Sangtian	Director	8	7
Miss Urawee Kanokpruk	Director	8	8
Mr.Danucha Noichaiboon	Director	8	8
Mr.Anan Santichewasatian	Director	8	8
Mrs.Daranee Kantamara	Director	8	8

Organization Chart as at December 31, 2018





The Company's management compose of 7 persons as below:

- | | | | |
|----|---------------|------------------|--|
| 1. | Mr. Danucha | Noichaiboon | Managing Director |
| 2. | Mr. Anan | Santichewasatian | Chief Finance Officer |
| 3. | Mrs. Daranee | Kantamara | Deputy Managing Director of General Administration |
| 4. | Mr. Vithep | Vachirabhahu | Senior Deputy Managing Director |
| 5. | Mr. Daroonwat | Noichaiboon | Deputy Managing Director of Marketing |
| 6. | Mrs. Somjit | Phokbut | Accounting Manager |
| 7. | Mrs. Supaporn | Chansuroj | Financial Manager |

Note : Management is "Executive" as defined by the Securities and Exchange Commission (SEC).

Scope of power and duties of Managing Director

According to the company's regulations, The Managing Director has the authority and responsibility regarding the administration as approved by the Board of Directors as follows.

1. Bring forward the policies from the Board of Directors and Responsible for all of the management received.
2. Assign the strategies to meet the goal for operation and policies.
3. Approve the important investment that code in the annual budget which approved from the Board of Directors.
4. Approve the operation plan and the policies in each division, also monitor the operation of the company to conform to the plan and policies.
5. Issue orders, rules, notices, memo for the benefit of the company and the organization tidiness.
6. Approve to appoint, hire, transfer, and dismiss of the employee whose position below the Deputy Managing Director.
7. Assign the third party, by approval of Managing Director, to manage and operate for the Managing Director in the necessary matter and not above authorized financial amount
8. Determine and bring forward the expenditure budget for the approval of the Board of Directors.



9. Conduct the employees to work with ethics, morals, laws, and cultural to the shareholders, customers and employees and related person.

10. Operated in the normal manner of the company, and in case of the important subject, Managing Director must present to the Board of Directors or the Management Board for the approval.

11. Support and develop the organization and employees in term of skill and the cultural of organization.

12. Support and encourage the education and develop new technology to increase the production and develop the business by using the resources in full capability.

13. Act with honest and care for the best of company.

In order that, the authorities give to Managing Director will act under the regulations, law and rules and regulation of the company; In case of any actions which develop the conflict of interest to Chief Executive Officer or any related person (Notification from SEC).

The Company Secretary

The Board of Directors has approved the appointment Miss Nuanchan Sirikul as a Company Secretary since June 26, 2008 until now to comply with the Securities and Exchange Act (No.4) B.E.2551.

The duties and responsibility of the Company Secretary

1. Preparing and keeping the following documents:
 - 1.1 A register of directors
 - 1.2 A notice calling directors' meeting, the minutes of the Board of Directors and an annual report of the Company
 - 1.3 A notice calling shareholders meeting and the minutes of the shareholders' meeting;
2. Keeping a report on conflict of interests, reported by a director or an executive.
3. Arrange the Board of Directors Meeting and Annual General Meeting of Shareholders.
4. Orientation and advising the new director.
5. Liaise with the regulatory agencies such as the Stock Exchange of Thailand.
6. Disclosure and information reporting to the regulatory agencies and public which comply with the law properly.
7. Operating any act that is abided by the Capital Market Supervisory Board and assigned by the Board of Directors.



Details about the company secretary

Name	: Miss Nuanchan Sirikul
Age	: 65 years
Education	: Bachelor of Business Administration Bangkok University
Training history in the Company Secretary	: Company Secretary Program (CSP 27/2008) : Effective Minute Taking (EMT 11/2008)

Work Experience

2008-Present	: Company Secretary, Ekarat Engineering PCL.
2004-2008	: Manager of Managing Director department, Ekarat Engineering PCL.
1992-2004	: General Manager, E.R.Metal Work Co.,Ltd.
1973-1991	: Assistant Secretary of Governor, National Housing Authority

Shareholding proportion	: 4,617 Shares or 0.0003%
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Relevant directorship positions	: - None -
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Relationship between Executives	: - None -
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Remuneration of the Board of Directors and the Management Team

The company had set a policy for remuneration for directors and executives fairly and reasonably. The Nomination and Remuneration Committee will consider and scrutinize as appropriate for each position. In accordance with the financial status of the company and compared with other companies in the same business group. The remuneration was allowance and bonus which has already approved by the shareholder's meeting every year. The details are as follow:

Remuneration of the Board of Directors and the Committees

1. Allowance

1.1 Monthly Allowance

• Chairman of the Board	Baht	44,000	per month
• Directors	Baht	22,000	per month
• Chairman of the Audit Committee	Baht	20,000	per month
• Audit Committees	Baht	10,000	per month

1.2 Allowance for each meeting

• Chairman of Nomination and Remuneration Committee	Baht	15,000	per meeting
• Nomination and Remuneration Committees	Baht	10,000	per meeting
• Chairman of the Risk Management Committee	Baht	15,000	per meeting
• Risk Management Committees (Director)	Baht	10,000	per meeting
• Risk Management Committees (Non Director)	Baht	5,000	per meeting

1.3 Bonus

The Company determine the remuneration of the Board of Director as bonus in reasonable rate on the performance of each year at amount not exceeding Baht 6,000,000, at the same rate as the last year.



The details of the directors' remunerations are as follows:

Unit : Thousand Baht

Name	Position	Remuneration	
		2017	2018
Mr.Vichit Yamboonruang	Independent Director / Chairman of the Board	778	818
Mr.Vinai Vittawasarnvej	Independent Director / Chairman of Audit Committee	654	694
Mr.Pitak Chaicharoen	Independent Director / Chairman of Nomination and Remuneration Committee / Audit Committee	534	574
Mr.Wara Tongprasin	Independent Director / Audit Committee	564	589
Mr.Chatrri Siripanichkorn	Independent Director / Nomination and Remuneration Committee	434	464
Mr.Wiwat Sangtian	Director	414	454
Miss Urawee Kanokpruk	Director / Nomination and Remuneration Committee	434	464
Mr.Danucha Noichaiboon	Director /Chairman of Risk Management Committee / Nomination and Remuneration Committee / Managing Director	434	479
Mr.Anan Santichewasatian	Director / Risk Management Committee	414	464
Mrs.Daranee Kantamara	Director	414	454
Total		5,074	5,454



Remuneration of the Management

Executive compensation policy is based on the Board of Directors and in accordance with the operating results of the Company. The Nomination and Remuneration Committee is responsible for determining the remuneration to reflect the performance along the practices and standards of the same business group. Then proposed the principles and the appropriate amount of remuneration to the Board of Director to consider and approve it.

The company's management compose of 7 persons comprising Managing Director, Chief Financial Officer, Senior Deputy Managing Director, Deputy Managing Director of General Administration, Deputy Managing Director of Marketing, Financial Manager and Accounting Manager by received remuneration as detailed below:

	2017	2018
Total Salary	13,518,000	16,134,000
Bonus	1,321,500	-
Provident Fund	194,400	272,880
Total	15,033,900	16,406,880

Other Remuneration

For the Board of Directors have only compensation from meeting fees and bonus without any additional compensation.

For the Management team, in addition to salary compensation, bonuses and provident funds, there are other compensation such as car, fuel expense, and mobile expense.

Manpower

As of 31 December 2018, the Company has 737 employees detailed as follows:

Unit : person			
Department	2016	2017	2018
1. Managing Director Office	7	7	6
2. General Management Department	30	36	38
3. Financial and Accounting Department	31	32	31
4. Marketing Department	8	9	9
5. Sale Department	25	28	31
6. Service Department	106	122	124
7. Production Department	574	553	495
8. Internal Audit Department	3	3	3
Total	808	781	737

Other Remuneration

The Company has provided other welfare to employees in addition to salary, overtime and bonus such as giving the uniform to employees annually for orderliness and good image and to alleviate the burden on the cost of apparel, staff shuttle bus, donating money to help charitable for staff and members of their family.

The Company recognizes about the health of employees, therefore provided annual health check-up by creating a clear operating procedure according to the standards of the Ministry of Labor and registered the provident fund in accordance with the Fund Act at the rate of 3% of the wages. However, the employees have the right to contribute 50% of the company in the case of termination of membership after working with the company for not less than 3 years and 100% in the case of working with the company for at least 5 years.

In addition, as an incentive to employees who are willing to work, sacrifice, dedication and responsibility as well, the Company will grant a special award based on the annual performance evaluation.



Labor protection

The Company recognizes the importance of safety, occupational health and work environment of employees due to different job characteristics in each department. Therefore have provided the safety, health and environment committee by select from the management and employees in various departments' the Company In order to jointly consider the correct implementation as required by law. Including supply of equipment and monitoring tools for convenient and maximum security to reduce accidents and hazards that may occur to the employees.

Employee Development Policy

It is the Company's policy to increase the standard of quality and capabilities of its work force through its development and training programs and also to prepare for more competitive environment in the future. The company has established an organization responsible particularly for employee development and training. Budget is appropriately and sufficiently allocated for development and training in accordance with objectives of each department. Budget is appropriately and sufficiently allocated for development. Thus, development and training schemes are determined as follows;

1. Internal Training: The Internal training will be carried out by inviting instructors with expertise from external domestic or overseas organizations and institutes, to consecutively provide knowledge to employee in each level every year. Training to improve the skills of the employees by the experts within the company continuously every year.
2. External Training: The Company will let employees participate in training arranged by external organizations and institutes, regarding technical issues, administration, management, language and occupational safety health and environment to improve the skills of the employees.
3. Oversea Training: To enhance readiness and to provide employees with opportunities to learn new know-how and techniques, the Company will send staffs to attend meetings, seminars or training of international course.



In the year 2018, the Company provided both internal and external training in total training hours of the year 9,897 hours, average staffs of 770 staffs, the average training hours is 12.85 hours per staff.

The Company has established rank and position determination regulation in order to clarify career path and Criteria for performance appraisal increase employee morale in every level. The Company will motivate, encourage and support employee to obtain career competencies and opportunities to grow and progress through career path in correlation with their knowledge, competencies and experiences.

Dispute in year 2018

- None -



Good Corporate Governance Policies

The Company recognized the importance of the operation principles. The Company has policies on business ethics and business ethics of the Board of Directors, the Board of Management and staffs according to the good corporate governance system as practice guidelines standard in the Company's Articles of Association. The Company have policy to behave under the best practices for the Director which conducted from Code of Best Practices for Directors of Listed Company that governed by The Stock Exchange of Thailand. The assigned principles must able to do practically. In addition, the Company has adopted the Good Corporate Governance to develop the policies which will increase the ability to the competition, management, and operation for the value added and efficiency of the company which will give the security and confidential to the stakeholders.

In addition, the Company reviewed the policy and CG Code to comply with legal, economic and social change and inform directors, executives and employees to acknowledge and abide as part of the work.

In fiscal 2017, the Company complied with the five categories of corporate governance principles as follows:

1. Rights of Shareholders

The Company recognizes the importance of shareholders and their rights. the Company has implemented policies to protect the basic rights of its shareholders which include the right to purchase, sell or transfer Company shares or receive a share in the Company's profits, receive sufficient and timely Company information, participate in the Annual General Shareholders' Meeting (AGM), give proxy to vote on shareholder's behalf, make inquiries during the AGM, have rights to submit the issues for meeting agenda and be able to nominate the appropriate individuals for consideration to be appointed to the Company's Board of Directors. Shareholders shall also have the right to participate in important decisions such as electing directors of the Company, approving transactions that bear effect on the direction of the business, and making amendments to the Memorandum of Association and the Articles of Association.



Annual General Shareholders' Meeting

The Company held the AGM according to the Public Limited Companies Act B.E. 2535 (1992), in accordance with the guidelines of the SET and the Thai Institute of Directors (IOD) and monitored that the AGM was fully complied with the requirements stated in the Annual General Meeting Checklist (AGM Checklist) based on the assessment of AGM of listed companies by the Thai Investors Association, the Thai Listed Companies Association and the SEC to raise the quality of the Company's AGM as follows:

- **Date, Time and Venue to hold the AGM**

The Company convened one annual general meeting of shareholders within 4 months from the end of fiscal year. In the urgent event that need to propose special agenda which its subject to impact or related to the interests of shareholders or relating to conditions or rules, applicable laws that must be approved by shareholders. The Company will call an Extraordinary General Meeting of Shareholders to be the case.

At the Board of Directors' meeting 2/2018 held on February 27, 2018, a resolution was reached by the Company's Board of Directors to hold the 2018 AGM on April 30, 2018 at Bu-nga Room, Golden Tulip Sovereign Hotel, Rama 9 Road, Huay Kwang, Bangkok and without calling an Extraordinary General Meeting of Shareholders.

- **Meeting invitations in advance**

The Company disclosed the Board of Director's resolutions, AGM dates and agenda by made available through the Stock Exchange of Thailand to shareholders in advance on the date of the Board of Director's meeting. The Thailand Securities Depository Co., Ltd. (TSD) is the company's securities registrar, will deliver the invitation letter with details of the meeting agenda, importance information, opinion of the Board of Director, Minutes of the previous meeting, Annual Report and documents required for proxy which clearly specify the method used by the Company. The invitation will be send to shareholder in advance more than 14 days before AGM date.

In 2018, the Invitation Letter sent out on April 12, 2018 and published in newspapers continuously for 3 days during on April 17-19, 2018 to inform the shareholders of the meeting in advance and revealed on the Company's website in advance 30 days (since March 29, 2018)



- Day of the AGM

Information relevant to the AGM was also included in the information packet sent to shareholders along with the letter of invitation to attend the AGM to enable shareholders to have sufficient information to make sound decisions on the various issues proposed for consideration. Prior to commencing the 2018 AGM, the Chairman provided attendees with a summary of the Quorum and then Managing Director explained how to use the voting ballot, the voting procedure, the vote collection process and the vote counting process. After each vote count, the Chairman announced the results of voting for each agenda to the shareholders ensuring transparency of each vote counted. On each agenda for consideration, the Board of Directors and management were on hand to provide comprehensive response to queries and/or comments that shareholders might have. In regard to the voting and vote counting process.

In regard to the voting and vote counting process, the Company strictly adhered to the Company's AOA allowing one vote per share held. The resolutions of shareholders' meeting were passed by a simple majority vote of the shareholders attending the meeting and having voting rights. In the event of a tie vote, the Chairman of the meeting shall have a casting vote. In counting votes for the general agenda, only disapprove and abstain from votes were counted and the rest was regarded as approve votes. For the agenda on election of Directors will allow shareholders to vote individually. The meeting was carried out as in the order set in the agenda without addition of any items.

If any director has a stake in or involved in any agenda, will not to attend the meeting and abstain from voting on that agenda.

The 2018 AGM was scheduled at 14.00 hrs. by registering at 12.00 hrs. A total of 81 shareholders and proxies attended the meeting representing a total of 545,553,874 shares which is 40.61% of the Company's paid-up capital and more than one-third of the total number of shares sold constituting a quorum.



- **Disclosure of Resolutions**

Resolutions reached at the AGM were disclosed to the general public via the SET's information channel within the period of the time at the end of the day after the meeting. Details regarding the approved/disapproved resolution and the vote counts (approve/disapprove/abstain/Voided Ballot) had been clearly indicated for each agenda item that was submitted for consideration. The detailed minutes to the AGM containing names of Board members and management attending the meeting along with the resulting resolutions and the vote count on agenda items posed for shareholders' consideration along with major issues posed by shareholders and the response made by the Company were submitted to the SET within 14 days and the minutes of the AGM had also been posted on Company's website in Thai and English to allow foreign shareholders to access information thoroughly, including video and picture of the meeting.

2. Equitable Treatment of Shareholders

The Company's policy is treat all shareholders equally, fairly and in accordance with legal requirements, including measures to prevent the directors, executives and employees from using inside information to benefit himself or his allies in unlawful manners. For example, take advantage of inside information (insider trading), disclose internal information to the person involved with directors or executives. In order to build confidence in investing with the Company.

The Company arranged for the shareholders to propose agenda items for the said meeting and/or nominate qualified persons for director election in advance during December 01 – 30, 2018 and so notified the shareholders through the SET. Moreover, the Company posted information on its website, giving details about the procedure and method of consideration in a clear and transparent manner. For the 2018 Annual General Meeting of Shareholders, none of the shareholders proposed agenda items for such meeting and/or nominated qualified candidates for director election which the Company Secretary has reported to the Board of Directors for acknowledgment.



The Company has facilitated all shareholders by set to be held at an easily accessible venue, primarily for shareholders' convenience. There are registration officers and registration service points for shareholders and proxies attending the meeting appropriately and adequately. Applying technology to AGM, barcode was used in the registration and vote counting processes for time saving. The participating shareholders were treated for lunch, snacks and refreshments. The Company sent invitation letters and meeting documents in English to the foreign shareholders, allowance given to shareholders to appoint a proxy or one of Independent Director who have been specified in the proxy form to attend the meeting and vote on behalf of the shareholders without conditions. In addition, the Company has disclosed the invitation letter and the proxy form along with details and procedures on the Company's website 30 days in advance. Shareholders can ask for more information by phone or other channels such as website, e-mail etc.

3. Role of Stakeholders

The Company realizes the importance of all stakeholders. Therefore has set practice guidelines to treat all stakeholders with equity based on the sustainable mutual benefits in enhancing the competitiveness of competitive capability and generating profits to the Company. The Company has conducted its business guided by the conscience of corporate social responsibility (CSR) reflecting international environmental standards minimizing pollution and waste resulting from undertaking business activities. Therefore, the Company's Good Corporate Governance and Ethics Code were drafted and distributed to Company's directors, executives and employees reflecting the following guidelines:

3.1 Society and the General Public

The Company realized the important of community and environment by assign the practical of working and awarded ISO 9001:2000, ISO 14001, ISO 50001:2011, and others certificates both development and negative impacts on the environment as prove of social responsibility such as participated in the Green Industry Project by committed to develop according to the objectives of the project according to the definition "Environmental friendly transformers". The Company is supportive of activities that are beneficial to the society or communities and cultivate employees to have a sense of responsibility to society, communities and the environment.



3.2 Shareholders

The Company shall operate its business to generate satisfactory return for shareholders and ensure equitable treatment of all shareholders. The company has the policy to acts with honestly and equally to the shareholders accordance with good corporate governance principles. Report the status of the organization regularly and completely according to reality and inform all shareholders equally. Including the opportunity for shareholders to suggestions and complaints through various channels of the Company.

3.3 Employees

Employees are provided with fair and reasonable compensation and welfare. A safe workplace has been maintained to ensure security of employees' life and properties. Importance is given to employees' equal opportunity of knowledge, capability and skill development and practices that are not involved in human rights violations according to Thai labor standards.

3.4 Customers

The Company has the policy to acts with honestly, equally, and responsible to the customers. Customers' confidential information is strictly treated and is not unethically used for personal benefit or for the benefit of any related party. Customers are provided with correct, adequate and up-to-date information about products and services, including monitor the satisfaction of customers for the improvement of products and services. Therefore, the customers can trust and confident to do business with the company and for a long-term relationship.

3.5 Trade Competitors

The Company abides by the fair competition rules, not seeking confidential information of competitors in a dishonest or inappropriate way and not damaging reputation of competitors by way of false allegation. The Company will not infringe the intellectual property rights or any other rights in relation to intellectual property of others.



3.6 Business Partners and/or Creditors

The Company strives to build confidence for Business Partners and Creditors that they will be equally and fairly treated based upon business relationship and fair returns to both parties. The Company will also avoid any situation which may cause a conflict of interest. For creditors, the Company has complied with the agreements or conditions agreed by both parties strictly; has been responsible and has not concealed information which will cause damages to the creditors. The Company reports statement of financial position to creditors regularly with accuracy and punctuality. In case of failure to fulfill its obligations in the agreement, the Company will notify the creditors immediately to find solutions including managing finances to build the appropriate structure to the Company's business operations, maintaining the confidence of creditors. Including not accepting or paying any benefits which dishonest with partners or creditors. Along with monitoring and evaluating partners to develop sustainable business operations.

Intellectual Property practice

The Company recognizes the importance of protecting intellectual property; therefore, policies were set that both the procurement and deployment must not commit to infringement of intellectual property. Moreover, education and caution are implemented on employees to create awareness on such matters, including verification by both internal and external agencies.

4. Information Disclosure and Transparency

The Company gives priority to the principles of information disclosure and transparency according to the requirements set by the SET, and the SEC. Specific departments are set to oversee the disclosure of the financial and other information related to the Company's operations sufficiently, accurately, completely, timely and transparently in order to communicate with shareholders, investors, analysts and stakeholders from all sectors to ensure even distribution of information through various channels. The Company has set the following guidelines:



Disclosure of information through the involved agencies

The Company disclosed the Company's information both financial and other important aspects to regulators, such as financial reporting and news that are essential to the investment of shareholders and investors to the SET, report of the Company's information through Annual Registration Statement (Form 56-1) and Annual Report (Form 56-2) to the SEC, report on financial information, directors and employees information including other information through Set Portal Straight Through.

The Company set up the Investor Relations Department to serving as a center for disclosing important information to investors and financial reporting process such as presentation of operating results, financial statements, information that is reported to the SET, Management Discussion and Analysis(MD&A) which show the status of the operating results and future prospects of the Company. In addition, investor relations are also responsible for promote a good relationship, communicate accurate and reliable information. Including implementing plans to ensure that all stakeholders are treated equally, have access to information and have a channel to communicate with the company through various activities such as meeting, conference calls with executives, answering questions and providing information via phone and/or email and company visits

The Company has established that its directors, executives and persons related thereto are duty-bound to prepare and present to the Company report on changes in their holdings of the securities of the Company within three business days from the date of change. The Company Secretary is tasked to compile report on their changes in securities holdings and put in the agenda for information at the Board Meeting.

Disclosure of information through website

The shareholders, investors or interested people to know the Company's information without delay through the website, www.ekarat.co.th including the Company's background, Board of Directors, product and services, news, operating results, financial statements, shareholder information, shareholders' meetings, minutes of shareholders' meetings, a list of major shareholders, operational statistics, good corporate governance, procurement reports, the Company's AOA, and information reported to SET, etc.



Complaints and other notifications

The stakeholder can contact, get information, report news or clues both inside and outside organization through the website / telephone / Notification / via e-mail to the Company Secretary and Internal Auditor Department and Investor Relations

Telephone : 02-719-8777 # 384, 369

Website : <http://www.ekarat.co.th>

Email : Company Secretary : nuancsir@ekarat.co.th

Internal Audit Department : suwannee@ekarat.co.th

Investor Relations : wanngam@ekarat.co.th

The criticism or suggestions will be forwarded to the relevant authorities to carry out improvements. Once completed, the results will be informed to the contact. The PR staff will follow up by calling to inquiry about the customer's satisfaction.

The Management will follow all information on monthly basis for analyze trends of changing and use it as guideline to improve the production process and service and to meet the needs of all stakeholders.

For complaints, the Company provides an opportunity for the general public to complain when found inappropriate behavior of directors, executives and employees or against the business ethics of the company to Internal Audit, Company Secretary and Human Resource Department. The Company will receive all complaints equally attentive transparency and fairness to all parties and will keep confidential and protect the complainant.

In 2018, no significant ethical complaints were found.

5. Responsibility of the Board of Directors

The Board of Directors consists of individuals who have the knowledge and experience beneficial to the business operations. The Board of Directors has a duty and responsibility to set the strategic direction of the business operations in accordance with the principles of good corporate governance through the definition of the policy, strategy, goals, vision and mission, and plays a crucial role in supervising and monitoring the implementation of the Management to ensure compliance with the policy and defined strategies. The Board of Directors must act with competence, knowledge, integrity, transparency for the optimum benefits of the Company.



The Board of Directors carries out a review of the policy, vision and strategies of the Company on a yearly basis to accommodate changes in current situations. The Board of Directors has regulated the ethical standards, encouraged the Board of Directors, Management and employees to strictly comply by communicating and disclosing the practice guidelines in the Company's Good Corporate Governance and Ethics Code through the Company's website.

Board Structure

The board structure is in accordance with the Company's AOA, regulations of the Public Limited Companies Act B.E. 2535 (1992), the Securities and Exchange Act B.E. 2535 (1992) and B.E. 2551 (2008), and related rules and regulations. The Board of Directors appointed subcommittees to study and screen specific matters as detailed in Subcommittees in section 9.2

Board Composition

Directors are appointed as per the resolution of the AGM as proposed by the Nomination and Remuneration Committee and the Board of Directors, respectively, according to the Company's AOA, the Board of Directors must consist of at least 5 directors who have knowledge and experience about the business of the Company.

As of December 31, 2017, five out of the total 10 board members of the Company are independent directors, which is in compliance with the corporate governance practices requiring that at least one-third of total number of directors should be independent directors. This helps to ensure that the shareholders' rights and benefits will be taken care of and the Company's benefits fully protected. It also leads to checks and balances in the board structure since 7 of them are non-executive directors and 3 are executive directors. Under such board composition, the nonexecutive directors are able to render opinion fully and independently in the consideration on all issues at the board meeting.

Authority and Responsibilities of Directors

The Board of Directors has authority and responsibility to oversee the Company's operations to be strictly in line with the objectives and resolutions of the AGM without violations of the laws, rules, regulations, good corporate governance principles and best practices for directors of companies listed in the SET. The Board of Directors has authority and responsibilities to approve in detail at section 8.1.2.



Combination and Segregation of Positions

The Chairman of the Board of Directors does not hold a management position but is an Independent Director and is not the same person holding the position of Managing Director. The Chairman of the Board has no relationship with other members of the Management. There is a clear written differentiation between the roles and responsibilities of the Company's Board of Directors and that of the Management.

Directorship in other companies

The Directors be appointed as directors in other listed companies up to a maximum of 5 and must notify the Board of Directors acknowledged. The Company Secretary will disclose the information in the Form 56-1 and annual report (Form 56-2). The Company prohibits the Director to holding the position of Managing Director, Manager or other position that has similar characteristics in the same business or being a competitor to the Company and subsidiaries. Exceptions would be joined as directors in government and the private organizations which established for public interest.

Board of Directors Meetings

Board meetings are scheduled ahead of the fiscal year at least 3 months per meeting and special meetings called as necessary with a clear agenda item and a follow up round to evaluate performance on a regular basis. Seven days prior to the Board meeting, the Company Secretary will send an invitation letter along with agenda items and supporting documents to each director, thus giving him/her adequate time to study on the information before attending the meeting and must have at least half of the total number of directors, therefore will be a quorum.

In 2018, the Board of Directors convened 8 times in total, The Company Secretary made the written records and minutes of all meetings to be presented to the Board of Directors for review and approval in the next meeting and made the approved minutes available for further inspection by the Company's Board of Directors and other related agencies.



Details of meeting attendance of Subcommittees in 2018

Director	Number of Attend / Number of Meeting			
	BOD	AC	NRC	RMC
Mr. Vichit Yamboonruang	8/8			
Mr. Vinai Vittawasarnvej	7/8	5/5		
Mr. Pitak Chaicharoen	8/8	5/5	1/1	
Mr. Wara Tongprasin	7/8	4/5		
Mr. Chatri Siripanichkorn	8/8		1/1	
Mr. Wiwat Sangtian	7/8			
Miss Urawee Kanokpruk	8/8		1/1	
Mr. Danucha Noichai boon	8/8		1/1	1/1
Mr. Anan Santichewasatian	8/8			1/1
Mrs. Daranee Kantamara	8/8			

Note : BOD = The Board of Director, AC = Audit Committee, NRC = Nomination and Remuneration Committee, RMC = Risk Management Committee

The Board of Management has a meeting in every week for operating by smoothly and efficiently.

Performance Evaluation of the Board of Directors

The Company has determined that the performance of the Board should be evaluated at least once a year, divided into 2 different assessments are as follows:

1. Board Evaluation
2. Self Assessment

The Board of Director jointly evaluate their performance and seek rectification and improvement measures. The Company has properly reviewed its Board self-assessment guidelines and criteria to be consistent with those of the Stock Exchange of Thailand comprised three sections:

1. Board structure and qualifications
2. Board meeting
3. Roles, duties and responsibilities of the Board



The Company Secretary sent the Board members the self-assessment form to evaluate their performance. The evaluation result is reported to the Company's Board of Directors in the next time. The Board's self-assessment result for 2018, Overall, all criteria points have good average score, reflecting the Board's performance of duties according to the good corporate governance principles at a well to excellent level.

However, the Chairman's evaluation result remained confidential and could not be made public.

The Company assigned the Nomination and Remuneration Committee to evaluate the performance of Managing Director. The evaluation result was then presented to the Board of Directors for consideration. However, Managing Director's evaluation result remained confidential and could not be made public.

Directors' Orientation

The Company holds an orientation for new Directors by presenting the Company's information, aviation business, shareholding structure, related rules and regulations including privileges of the Directors, to allow the Directors to receive related information beneficial for managing the Company. In addition, the Directors are encouraged to attend training courses organized by the Thai Institute of Directors (IOD) to develop, support and promote the performance of the Board of Directors.

Knowledge and Skill Development for Directors and Executives

The Board of Directors and Executives are encouraged to attend training courses, seminars and activities organized by the IOD, the SET, and the SEC in order to continuously enhance their knowledge and exchange experience in various fields related to the roles of Directors and Subcommittees.

The majority of the Directors have been trained in courses organized by the IOD as follows:

- Mr.Wara Tongprasin, Position : Independent Director / Audit Committee
Risk Management Program for Corporate Leaders (RCL) 14/2018
- Mr.Anan Santichewasatian, Position : Director / Risk Management Committee
Risk Management Program for Corporate Leaders (RCL) 11/2018



Subcommittees

The Board of Director appointed four sets of Committees to study and scrutinize specific matters as follows:

1. The Management Board

As of December 31, 2018, there were 5 members in the Management Board as follow:

- | | | |
|------------------|------------------|--|
| 1. Mr. Danucha | Noichaiboon | Managing Director |
| 2. Mr. Anan | Santichewasatian | Chief Financial Officer |
| 3. Mrs. Daranee | Kantamara | Deputy Managing Director of General Administration |
| 4. Mr. Vithep | Vachirabrah | Senior Deputy Managing Director |
| 5. Mr. Daroonwat | Noichaiboon | Deputy Managing Director of Marketing |

Scope of power and duties of the Management Board

The Management Board has the authority and responsibility for the management of the company in regard to normal operations. By co-determining business policies, goals, operational plans, business strategy, budget, management structure to propose to the Board of Directors' meeting and/or the shareholders' meeting for approval before proceeding. Including checking and monitoring the Company's performance according to the policy. The current board of management has the authority as follows:

1. Report and present the business policies, Goals, operation plan, business strategies, and annual budgeting of the company for the Board of Directors approval.
2. Control and monitor the Company's operation to go along with rules, regulations, business policies, business plan, and business strategies by the resolution of the Board of Directors and/or the resolution of the shareholders' meeting
3. Determine and assign the Human Resource Management policies, IT Technology, expand the businesses, Personal Relations, and regulated the operation to meet the Company's goal.
4. Determine and approve to bid in the project or be a contractor for the agencies or the person.



5. Approve the appoint, hire, dismiss, assign fees, compensation, bonus, and workfare for the employee and Management team, except for appoint, hire, transfer, and dismiss Internal Audit Department Manager and officer which need the approval of the Audit Committee. For the appointment, hire, transfer, and dismiss of Deputy Managing Director and higher positions and the advisors, the Remuneration Committee will be determine and pass the subject to the Board of Directors to approve. The Management Board is authorized to perform the financial transactions:

5.1 If conducted in the business plan or budget which is already approved, the Management Board can use in the line that already approved.

5.2 If not in concern with 5.1 above, the Management Board can approve the financial amount not over Baht 20 million and the amount mentioned is include with the financial transactions, capital expenditure and can approve for the financial obligations (Loan) in any kind of financial tools which not over Baht 20 million and the affiliate, when the transaction is finish, the Management Board need to report the conclusion to the Board of Director.

6. The Management Board has the power to authorize one or more than one person to perform an action for the Management Board which the action is under the control of the Management Board within the period of time and the Management Board can cancel of modify the authority or power.

7. Perform the tasks received from the Board of Directors.

In addition, the approval of the aforementioned items must not cause the Management Board or the authorized person from the Management Board able to approve items that he or someone may have conflicts, or may have other conflicts of interest (according to the Company's Articles of Association and The Securities and Exchange Commission Act) done with the Company or its subsidiaries. Except for approval of transactions that are normal course of business with clear details.

In the case of any actions that have or may have an interest or stake in the management committee or persons who may have conflicts. The Management Committee shall propose that to the Audit Committee and the Board of Directors for approval. The directors and persons who may have conflict of interest shall not be entitled to vote at the meeting of the Board on such matters.



The Company requires the Management Board to have a meeting every week. In order to be able to manage and monitor the performance closely and to troubleshoot issues that may affect the Company in time.

In 2018, the Management Board held a total of 39 meetings.

2. Audit Committee

As of December 31, 2018, the member of Audit Committee is as follow:

- | | | |
|--------------|-----------------|---------------------------------|
| 1. Mr. Vinai | Vittavasgarnvej | Chairman of the Audit Committee |
| 2. Mr. Pitak | Chaicharoen | Audit Committee |
| 3. Mr. Wara | Tongprasin | Audit Committee |

Secretary of the Audit Committee is the manager of Internal Audit Department, Mrs. Suwannee Sujaritvanitchpong.

Two members of the Audit Committee are knowledgeable and experienced in reviewing reliability of Financial Statements, Mr.Vinai Vittavasgarnvej and Mr.Wara Tongprasin who graduated with a Bachelor's Degree in Accounting as well as work experience related to accounting.

Scope of power and duties of the Audit Committee

1. To review the Company's financial statements to ensure they are accurate, complete, and reliable.

2. To review the efficiency and effectiveness of the Company's Internal Controls and Internal Audit procedures by included the bellowing topics.

2.1 Give the consent to appointed, rotated, layoff, and determine to reward the head of Internal Audit.

2.2 Determine the independent of Internal Audit Division, in term of operation, reporting and structure.

3. To review the efficiency and effectiveness of the Company's risk management systems.

4. To review practices to ensure compliance with rules and regulations of the Stock Exchange of Thailand, and other related authorities.

5. Determine and selected to nominate and remunerate the Company auditor and considering the independent of company auditor which might give the Company other services.



6. Meeting with the Company auditor without the management for receive the comment from auditor at least once a year.

7. To review and submit an opinion on Internal Audit plans, practices of the Internal Audit group and coordinate with external auditors and report the performance of Audit Committee to the Board of Directors at least 4 times a year.

8. To consider disclosure of corporate information so it is reliable and adequate especially in the case of any related transactions or potential conflict of interest.

9. To prepare a report on corporate governance reviewed by the audit committee and signed by the Chairman of the Audit Committee for disclosure in the Company's annual report. The information including with:

- The accuracy, completion, and reliable of Company financial report.
- The adequacy of internal control system.
- To review practices to ensure compliance with rules and regulations of the Stock Exchange of Thailand, and other related authorities.
- The suitability of the external auditor.
- Conflict of interest transactions.
- Opinions or comments received by applying follow the AC's charter.

10. To perform other tasks assigned by the Board of Directors and Audit committee approved.

The responsibility of the Audit Committee

The Audit Committee has the responsible to the Board of Directors in terms of the duties received from the Board of Directors but the responsibility in the activities, which the company get involve, with other party is the Board of Directors obligation.

In 2018, the Audit Committee held a total of 5 meetings.



3. Nomination and Remuneration Committee

As of December 31, 2018, there were 4 members of the Nomination and Remuneration Committee as follow:

- | | | |
|----------------|----------------|---|
| 1. Mr. Pitak | Chaicharoen | Chairman of the Nomination and Remuneration Committee |
| 2. Miss Urawee | Kanokpruk | Nomination and Remuneration Committee |
| 3. Mr. Danucha | Noichaiboon | Nomination and Remuneration Committee |
| 4. Mr. Chatri | Siripanichkorn | Nomination and Remuneration Committee |

Secretary of the Nomination and Remuneration Committee is Mr. Danucha Noichaiboon

Scope of power and duties of the Nomination and Remuneration Committee

1. Assign the policies, qualification, and procedure for the nomination of the director and management level.
 2. Determine the nomination policies for the benefit of the company.
 3. Nominate and select the qualify person follow the related rules and regulations and present to the Board of Directors for the appointment of Director or management level.
 4. Control and monitor the suitable size and structure of the Board of Directors and adjust the size and structure to conform to the changing environment.
 5. Present to the Board of Directors for the nomination of the directors replacing the resigned directors from the articles of association.
 6. Give the proposal and evaluation of the management level.
 7. To perform other tasks assigned by the Board of Directors.
 8. Broach with the rules of Board of Directors compensation, Executive Board compensation, Others Committee, and the advisor of the company to approve by the Board of Directors.
- For the Managing Director, Deputy Managing Director or above positions, and Internal Audit Department Manager compensation is determined by the Chief Executive Officer and pass through the Remuneration Committee to accept and pass through the Board of Directors to approve.
9. Broach with the rules of Board of Directors annual compensation to approve by the Board of Directors before the shareholders' meeting approval.
 10. Determine the employee's bonus to approve by the Board of Directors.



11. Determine the employee's annual adjusted salary to approve by the Board of Directors.

12. Determine the rules and regulations of the company that concern to the benefit of the employee by the order of the Board of Directors.

In 2018, the Nomination and Remuneration Committee held a total of 1 meeting.

4. Risk Management Committee

As of December 31, 2018, there were 7 members in the Risk Management Committee as follow:

- | | | |
|------------------|------------------|---|
| 1. Mr. Danucha | Noichaiboon | Chairman of the Risk Management Committee |
| 2. Mr. Anan | Santichewasatian | Risk Management Committee |
| 3. Mr. Vithep | Vachirabhahu | Risk Management Committee |
| 4. Mr. Daroonwat | Noichaiboon | Risk Management Committee |
| 5. Mr. Paithoon | Indaravisute | Risk Management Committee |
| 6. Mrs. Supaporn | Chansuroj | Risk Management Committee |
| 7. Mr. Somphong | Rob-loak | Risk Management Committee and Secretary |

Scope of power and duties of the Risk Management Committee

1. Evaluate, analyze, and develop the framework of risk management and the method of risk evaluation in the future.

2. Assign the policies of overall risk management of the Company which include any important type of risk likes business risk, competitive, production, procurement, credit risk, liquidity risk, and exchange rate risk.

3. Assign the conform strategies with the Company risk management policies which can be evaluate, monitor, and control the risk

4. Assign the sufficient policies and risk management including with the efficiency of the system and follow the policies.

5. Report the result of approach to the Board of Directors to modify direct to the policies and regulations of risk management and notice to the Audit Committee for the proper audit.

In 2018, the Risk Management Committee held a total of 1 meeting.



Nomination and Appointment of Directors and Top Management

1. Nomination of Directors

According to the Company's Articles of Association, the Board of Directors shall consist of not less than 5 directors as decided and not less than half of all directors shall have residence in the Kingdom. The Company's director shall have the qualifications and not be under the prohibition prescribed by the law. At every AGM, one-third of the Directors shall retire from office. If the number is not a multiple of three, then the number nearest to one-third shall retire from office or the Director's positions are vacant from the other causes.

In the appointment of directors, the Nomination and Remuneration Committee has duty and responsibility for selecting and screening qualified persons as prescribed in the Company's Articles of Association and nominating the qualified persons based on the structure, size and composition of the Board of Directors for independent directors' qualifications shall be set forth in notification of the Capital Market Supervisory Board. By considering the list of suitable persons from:

- (1) The person who is the former director who has expired to propose to the next position.
- (2) The shareholders' nomination (if any);
- (3) The nomination by the Chairman of the Board, Directors, etc;
- (4) The recruitment of the knowledgeable, skillful and experienced persons ideal for the Company.

The Company provides an opportunity for shareholders to participate in the nomination of qualified under the terms and conditions set out in the December 1 - 31, 2018.

The qualifications of the Company's Directors being recruited as follow:

- (1) The qualified according to the company's regulations, have knowledge and understanding of the Company's business, assigns the strategies and policies, and supervises for the effective practice of the strategies,
- (2) The recruited persons would be able to perform the director's duties with prudence, integrity, morals and responsibilities, and make decisions based on fact and logic,
- (3) No restrictions as defined by the other related laws, rules and regulations,
- (4) The independence of each Independent Director,



(5) The director's ability to make time dedication: considering from the number of companies in which the director is holding a position, for example, so that they have enough time to join the Board Meeting regularly and are able to control and monitor the Company's operations.

The Nomination and Remuneration Committee considers and presents the list of candidates to the Board of Directors in order to propose to the shareholders' meeting for consideration and appointment.

The directors are appointed by the majority vote of the AGM based on the following criteria and methods:

1. One shareholder shall have one vote for each share;
2. Each shareholder shall exercise all the votes he or she has to elect one or several person(s) to be directors but cannot divide the votes for any person to any extent;
3. Persons receiving the most votes, in descending order, are those who are elected directors, to the number of directors who are to be elected. If there is a tie in the last to be elected and this would exceed the said number of directors, lots shall be drawn to meet the required number.

At every AGM, at least one-third or the closest number to one-third of the Directors must retire. The Directors to retire for the year and second year following the company registration shall be selected by means of the lucky draw. For the later years, the Directors being at term for the longest period shall retire while the duly-retired directors can be re-elected into the position.

In the case that the director's positions are vacant from the other causes apart from the duly retirement when the term ends, the Board of Directors can elect any qualified persons having no restrictions according to the law to be the replacement Directors in the next Board, except that the Director's term remains less than 2 months, then the new replacement Director shall be in the position for as long as the remaining period of that retired one in such term.

The AGM might resolve for any Director to retire before the term ends with the majority vote of at least three-fourths of all shareholders attending the meeting and holding the rights to vote and the combined share amount of not less than half of the share amount held by the shareholders attending the meeting and holding the rights to vote in such meeting.



Nomination of independent directors

The Company has criteria for selecting independent directors by considering the minimum qualifications in accordance with the regulations of the Securities and Exchange Commission. Also consider candidates with experience and ability to be able to provide opinions and suggestions that are beneficial to the operations of the company. Including be famous personalities who will enrich the image of the Company must not be beneficiary whether directly or indirectly with the Company, Related Companies, Subsidiaries and major shareholders. Including the freedom to express opinions freely, not under the control of the executive, major shareholders, related persons or close relatives of such persons.

The qualifications of Independent Directors as announced by the Capital Market Supervisory Board are as follows:

1. Must hold no more than 1 percent of the total outstanding voting shares of the Company, parent company, subsidiaries, associated companies, major shareholder or controlling person of the Company. Shareholding of the Independent Director includes shares held by persons related to that particular Director.
2. Is not or has never been a part of the management, staff, employee, consultant earning salary or controlling person of the Company, parent company, subsidiaries, associated companies or subsidiaries of the same level, major shareholder or controlling person of the Company unless the position has been terminated for over 2 years.
3. Is not related by blood or through legal bonding which includes father, mother, spouses, siblings, children, spouses of children, to other directors, management, major shareholder, controlling person of the Company or any person being nominated to the director, management or controlling position of the Company or its subsidiary.
4. Does not or never have business relationships with the Company, parent company, subsidiaries, associated companies, major shareholder or controlling person of the Company which may distract one's independent judgment. This also includes not having been a shareholder of significance or a controlling person of the entity having business relationship with the Company, parent company, subsidiaries, associated companies, major shareholder or controlling person of the Company unless the person's term has been terminated for at least 2 years.



5. Is not or has never been the auditor of the Company, parent company, subsidiaries, associated companies, major shareholder or controlling person of the Company, and is not a shareholder of significance, a controlling person or a partner of an audit firm where the auditor of the Company, parent company, subsidiaries, associated companies, major shareholder or controlling person of the Company is subject to, unless the position has been terminated for at least 2 years.

6. Is not or has never been a professional service provider that includes being a legal advisor or financial advisor receiving remuneration for over THB 2 million per annum from the Company, parent company, subsidiaries, associated companies, major shareholder or controlling person of the Company, and is not a shareholder of significance, a controlling person or a partner of a professional service provider of that type unless that position has been terminated for at least 2 years.

7. Is not an appointed director acting as the proxy of the Company's Board of Directors, major shareholder or shareholder as a related person to the major shareholder.

8. Must not operate or own a similar type of business that is a direct competitor to the Company or subsidiaries; is not a major partner in a limited partnership, a Director with management authority, staff, employee, a consultant earning salary or holding more than 1 percent of total voting shares of other companies operating similar type of business and regarded as direct competitor to the Company or subsidiaries.

9. Have no other characteristics that would prevent the provision of independent point of view concerning the Company's operations.

Appointment of Top Management

The appointment of Managing Director, which is the Company's top management position, is made by the Nomination and Remuneration Committee who has authority to define criteria and methods for recruiting the qualified persons with ideal knowledge, abilities and experiences and without the restrictions as defined by the Standard Qualifications for Directors and Officials of State Enterprises Act B.E. 2518 (1975) and the amendment and other related laws to take the position of President. The names of the nominee will be proposed to the Board of Directors for further consideration.

The Board of Directors has set a policy limiting the number of directorships in other companies where Managing Director can hold office as follows:

Managing Director is able to hold no more than 5 positions in other listed companies by inform the Board of Director. The Company Secretary will disclose the information in the Annual Information Form (Form 56-1) and Annual Report (Form 56-2).

The Company prohibits Managing Director to holding the position of Managing Director, Manager or other position that has similar characteristics in the same business or being a competitor to the Company and subsidiaries. Exceptions would be joined as directors in government and the private organizations which established for public interest.



Monitoring of Associated Companies

To supervise the operations of Subsidiaries, the Company as a shareholder has sent representatives to supervise the interests as well as coordinated cooperation between Subsidiaries. The Company's representatives are those who have been approved by the Management and the Executive Board or the Board of Directors to take positions as Directors in two Subsidiaries. The representatives are either members of the Company's Board of Directors or executive management total 4 persons who have knowledge and understanding of the business and can determine policies that are crucial to business operation, provide management guidelines that will benefit to the Company.

In a major policy, the representatives of the Company obtain the policy of the Company before offering an opinion at the meeting of Subsidiaries, such as allocation of profit, dividend or submission of state revenue, the election of replaced Directors who expired from term of office, the increase - decrease capital, termination - merger. The Company's representative must report information within the given time to the Company's Management and the Board of Directors.

In addition, the Company has arranged analysis, monitoring, and report on the performance of Subsidiaries, on a quarterly or yearly basis to allow the Management and the Board of Directors to use the information in making decisions and determining direction and guidance to regulate investment Subsidiaries.

Policies on Insider Information

The Company has the policies on insider information, prescribing that no Director, Executive and employee who knows or possesses inside information shall trade securities by resorting to inside information, which is material non-public information, in such a manner that it is likely to have an effect on the price or value of securities, and has known or possessed while holding a position or the line of work responsible for or capable of accessing inside information. Any actions, either for the benefit of oneself or other persons or to pass on such information to others, are prohibited. No Director, Executive and employee, and who has known or possessed inside information, shall trade securities during the period of 1 month prior to and 24 hours post the disclosure of the Company's financial statements.

Including having policies and adhering to ethics and integrity in business operations to customers, business partners and shareholders. There are clear requirements and codes of conduct in case that employees or executives disclose company information or used for their own acts or transactions that may have conflict of interest. It is a serious offense and may be subject to disciplinary action.

The Company has informed the directors and executives regarding the duty of shareholding report in shareholding of AKR shares by the Directors, Executive as well as their spouses and minor children. Any change in such securities holding shall be reported to the SEC in accordance with Section 59 of the Securities and Exchange Act and send a copy of the report to the Company on the same day or slowly on the next working day.



The company has imposed penalties for not complying with insider information, sent by mail to the staff and management were informed accordingly.

Auditor's Fee

- **Audit fee**

The Company and its Subsidiaries paid audit fees to SP Audit Co., Ltd. for undertaking financial audit work for the past fiscal year in the amount of THB 1,850,000.

- **Non-audit fee**

- None -

Compliance with Good Corporate Governance in other areas

The Company has continuously improved and uplifted its operation to be in line with the principles of good corporate governance. However, in 2017, there were issues in CGR which could not be covered. Details are as follows:

- Does the company require a minimum quorum of at least 2/3 for board decisions?

Article 24 of the Company's regulation only prescribes that at the meeting of the Board of Directors, there must be not less than half of the total number of directors present to constitute a quorum but does not specify the minimum quorum to pass resolutions.

- Does the company use cumulative voting in the election of board members?

The Company cannot use Cumulative Voting as the procedure of voting for the Company's Directors. As Article 21 of the Company's regulation stipulates that one shareholder shall have one vote for each share. Each shareholder shall exercise all the votes he or she has, to select one or several person(s) to be directors but cannot divide the votes for any person to any extent.

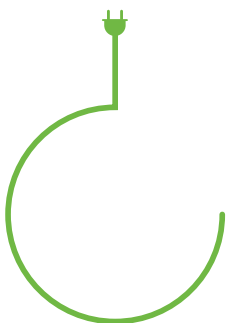
- Does the Board have a policy to limit the number of year in the position of independent director for not more than 9 years?

The Board of Directors have considered the said policy and found that the independent director of the company is qualified in accordance with the regulations of the Securities and Exchange Commission. He or She able to provide comments and suggestions that benefit to the operations of the company and has understanding of the company's business experience as well as the independent director of the company without benefits or interests whether directly or indirectly to the company, its subsidiaries or shareholders.

The Board of Directors has deemed it appropriate not to limit the number of years the tenure of independent directors of the Company not exceeding 9 years, according to the reason mentioned above.



Corporate Social Responsibility





Overview Policy

The Company is committed to conducting business with social responsibility, environment and good governance. Under the operating philosophy “Adhering to quality and integrity for customers” important both product quality and quality in corporate management. By striving to develop the potential of personnel in the organization improve the development of quality products, create better quality for society, and create a sustainable return for shareholders. So that the organization can live happily with the community and society. As well as elevating the progress of all stakeholders together, therefore, the Company has established the following corporate policies.

Corporate policy

1. Produce products and services that meet the standards in order to satisfy customers.
2. To maintain the quality of safety, occupational health, environmental and prevention of pollution caused by raw materials in the production process, various activities as well as the products and services of the organization.
3. The organization is committed to promote the anti-corruption both from inside and outside the organization.
4. Comply with the laws and regulations which related to the business operation of the organization strictly.
5. The employees are also responsible for using the energy and resources efficiently.
6. Provide the support in allocating the resources which are needed to improve and solve problems of quality, safety, occupational health, environment and society to be adequate and appropriate.
7. Corporate policy has been disseminated to employees and stakeholders.
8. Review and improve the policies to be consistent with the current situation by taking into account the impact of employees and stakeholders.

The Company has adopted the corporate Social Responsibility (CSR) to be a part of the operation continuously.

• “Green Label Project” The Company received the certificate of using the green label certification mark from the business organization for sustainable development (TBCSD) which shows that the Company’s products have been evaluated and verified that the environmental standards are in line with the requirements of the green label policy and project management committee and other environmental labels announced using clean technology to produce products that have little environmental impact.





CSR in Process

Guidelines for “Social Responsibility” in accordance with the Stock Exchange of Thailand, divided into 8 topics:

1. Fair business operation

The Company is committed to conducting business fairly and transparently. Recognizing the overall social responsibility encourage the Board of Directors, executives and all employees of the Company perform duties. Under the ethical principles of the Company’s business which has been announced for employees to acknowledge and as a rule of practice which has been updated to be consistent throughout the present. The details are as follows;

1.1 Fair competition

According to the Company policy is fair competition but full of determination. At the same time, the Company will not use illegal or immoral methods to collect information that is used for the benefit of the competition. Although it is consenting to exchange information, stealing trade information, trade secrets of competitors either in product, price, production, sale or auction which is not allowed by competitors whether written or verbal.

The Company has set out procedures and measures to prevent involvement in behaviors that hinder competition. While encouraging employees to recognize the importance of compliance with laws.

1.2 Promoting social responsibility in the value chain

The Company has established a clear and systematic policy on procurement of social responsibility such as procurement control. The selection of procurement sources as well as monitoring and evaluating suppliers to develop sustainable business operations by adhering to the principle of performing duties with integrity, fairness and maintaining good relationships with partners, coordinate and support each other, safety technology, increasing productivity, reduce environmental problems to step into business stability together.

1.3 Respect for property rights

The Company will not violate intellectual property or any other rights related to intellectual property of others. Whether it is copyright, patent, trade secret and any terms of the license agreement or commercial contract. By requiring executives and employees to use products or services that are properly licensed.



1.4 Responsible politics

The Company recognizes the importance of transparent business operations. Especially about the activities related to politics in all sectors. Whether it is helping or the benefits that give rise to the power of political control that is not correct. By the Company has informed the employees to acknowledge and strictly observe.

2. Anti-corruption

The Company has established a policy on anti-corruption. Under the business operation, using fair business strategy, transparency, adherence, good quality of the product is important and strictly abide by relevant laws. The Company is committed to anti-corruption by prohibiting the Board of Directors, executives and employees of the Company relating to any corruption. Giving and receiving all forms of direct and indirect such as a bribes reception, donation and political assistance calling or receiving any benefits or assets. That will lead to practice or refrain from performing their own responsibilities. Because the Company to lose benefits unless it is the case of laws, regulations, notifications, regulations, local customs or trade tradition can be done.

The Company has communicated policies and guidelines to employees at all levels. Including all related parties of the company. In the year 2018, the Company conducted the following activities;

- Publication and guidelines via the Company's website and the internet system within the Company which is easily accessible and throughout the organization along with closing the announcement to publicize to employees.
- New staff training to study and understand the content of ethics in business operations, Work regulations, policies and guidelines for anti-corruption. Both executive level and all staff.
- The Company conducted a survey and assessed the risks of corruption that may occur in the organization. In order to acknowledge the potential for corruption in the organization Internal, control assessment including proposing preventive measures. By the Company to bring the survey results to review guidelines, internal control system and work processes that may have gaps in control. Then used to improve the preventive measures and announcements for the implementation of the entire organization, such as rules of compliance trade competition connected transactions, etc.



- The Company has established a policy and guideline for whistle-blowing policy. In order to support and pay attention to all stakeholders, whether they are internal or external personnel. Third parties can report clues in cases of corruption or misconduct in business ethics or related regulations in order to help improve, correct or operate to be more accurate, appropriate, transparent and effective in business operations

The Company gives importance to all stakeholders by listening to comments, suggestions for mutual benefits and provide opportunities for stakeholders to complain in the event that the stakeholders. Do not receive fairness or can report clues if witnessing behavior that indicates fraud corruption of individuals in the Company. The stakeholders can contact through various channels as follows;

1. By E-mail address: suwannee@ekarat.co.th or secretary@ekarat.co.th
2. Letter to the Chairman of Audit Committee / the Board of Directors / Company Secretary by sending to Ekarat Engineering PCL., 9/291 UM Tower, 28th Floor, Ramkhamhaeng Road, Suan Luang Subdistrict, Suan Luang District, Bangkok 10250

The Company will accept your complaints and suggestions to check and contact you shortly. With the company giving priority to confidential information to protect the whistleblower and will consider the complaints fairly. In the past year, the company did not receive any information or clues.

3. Respect for human rights

The Company operates on the basis of respect for human rights. No discrimination for reasons of nationality, race, religion, language, age, gender, social status. No human rights abuses. Do not hire child labor. Do not commit or encourage forced labor in all forms. By giving fairness and security to all levels of employees with the opportunity for disabled workers to work with the Company according to the individual's ability.



The Company has complied with the Thai labor law in the care of various benefits which employees should receive. Whether it is a social security fund Provident Fund by creating a manual on the management of Thai labor standards TLS 8001-2003 on labor protection, labor relations welfare safety, occupational health and working environment. Which the company has implemented and continuously improved with the opportunity for employees to make complaints and improve about matters that are perceived to be violating their rights. In accordance with the process steps set out in the operation regulations, the company has a booth to receive comments, complaints or suggestions. Then, summarize, collect and send to Human Resources Department to check and improve. In the event that there are comments or complaints that cannot be concluded. They will present to the executive meeting to consider.

4. Fair treatment for labor

- Wage and welfare benefits

The Company has improved the salary structure to be consistent with the competitive conditions of the labor market and in accordance with the law. With the survey of salary rates of other operators in the same area to ensure fairness for employees. The evaluation of the performance of employees at all levels twice a year to use the assessment results to adjust the level and adjust the annual salary.

- Safety and occupational health

The Company has established the Safety, Occupational Health and Working Environment Policy. The executives and employees at all levels collaborate to implement the policy continuously and efficiently. Also appointed the Safety, Occupational Health and Working Environment Committee which consists of executives and representatives of employees at all levels. In order to ensure the compliance with the ISO 14001 environmental management system standards. The employees participate in the decision on the safety and occupational health, safety policies and plans as follows;

- Provide a safe working environment to prevent danger and reduce risks that may arise from work processes or work environments.
- Requires training for all employees to understand safety regulations to cultivate work consciousness and realize the potential dangers.
- Provide a hygienic bathroom, clean drinking water, Factors for proper and adequate first aid.



- The Company will arrange for pregnant women to work safely. Not harmful to pregnancy without dismissal reduce positions or cut benefits because of pregnancy.

In addition, the Company has a welfare and health promotion activities, such as organizing sports and recreational facilities which will be beneficial to mental health and physical health of employees, random sampling of alcohol and also taking into account the prevention and solution of drug problems in the workplace. By managing according to the standard criteria for prevention and resolution of narcotics problems in the workplace of Chachoengsao Province and received a certificate from Chachoengsao Province on 17 August 2016, effective until 16 August 2019.

In 2018, there were 22 employees with accidents and injuries from work, representing 2.99 percent of all employees. Which is only a minor injury. However, the company still strives to cultivate safety awareness for employees regularly.

5. Responsibility to consumers

The company adheres to the corporate ethics. “Honest and trustworthy” with the goal of success is to receive the highest trust and satisfaction from our customers. Therefore, directors, executives and employees of the Company must adhere to honesty (duty of loyalty), justice and accuracy in order to obtain the trust for the customers.

- Safety from products and services

The Company continuously researches and develops to produce products that are safe and quality to consumers. Under the management system in accordance with the quality, safety and environmental standards such as the selection of environmentally raw materials, no harmful chemicals or heavy metal components and safe for consumers. Also guarantee products and services according to the specified conditions.

Product warranty

The Company has a policy to guarantee the transformer for 10 years. The customer will receive a warranty card with details which inform the customer about the usage instructions, warranty period, warranty scope and telephone number to contact the service department. In the case of a problem with the transformer which during the first 3 years from the date of purchase. The Company will be responsible for correcting, repairing or replacing the new device for the customer without charge. Depending on the severity of the problem which must be considered in the case according to



the conditions of the Company. After the 4th year onwards, the Company will provide maintenance services for the transformer to customers by making an annual service contract. To track and check the operation of the transformer for safety in use and prevention of unexpected events that may occur, such as transformers, explosions, etc. which will cause damage to the business of the customer from power outages or fire. Having a backup power transformer for customers to use while waiting to repair the transformer.

- Marketing communication with customers

- The Company has prepared a warranty certificate sent to the customer along with the product. The detailed information on the characteristics of the product is made in the catalog format. Distributed to customers through sales staff service centers nationwide and distributors both domestically and internationally.

- The Company will conduct a survey of customer's satisfaction after servicing the transformer from maintenance service technicians of our service centers on quarterly. In the past year, it was found that customers were very satisfied with the work of service technicians.

- The Company has a process to review customer complaints on the quality and safety of products. Including following up after correcting and finding protection methods.

- Have a policy to maintain the confidentiality of customers by not disclosing their information or using it illegally for the benefit of oneself or related persons.

6. Environmental care

The Company is aware of the important of environment. Therefore has a clear policy and goal regarding energy conservation along with reviewing for continuous development every year.

Energy conservation policy is the implementation of the energy management system in every business process with the goal and objective to promote the use of energy for efficiency and maximum benefits. Including compliance with other laws and regulations associated. This is considered the responsibility of executives and staff at all levels to cooperate in complying with the prescribed measures. The Company have communicated and publicized such policies to both internal and external stakeholders in general. The Company has implemented the following energy and environmental conservation policies are as follows;



- Energy conservation by designing energy-saving products develop appropriate and continuous energy management systems. Improve energy efficiency in the production process and the technology used.

- The design of the transformer that has a lower loss than normal, according to the draft of the Green Label, which will reduce losses in the power supply system that occurs during use. Allowing users to reduce electricity costs from losses in transformers that are less.

- Saving resources by reusing and wasting from the production process, such as bringing wood chips, unused pallets or steel structures to be used as a cabinet or table for placing and providing a recreational corner for employees to sit and read. Using recycled paper to reduce the use of paper for internal work, etc. The Board of Directors had a policy to promote efficient use of resources. By setting off the lights and air conditioning during the lunch break for 1 hour and providing training on environmental knowledge to the employees according to ISO 14001 standard.

- Pollution prevention by controlling and choosing appropriate chemicals, reduce pollution to the environment and harm the production process, control wastewater quality before being released to the public. Including preventing interference with the surrounding communities, both noise and vibration from the following manufacturing processes.

- The use of transformer oil without substance Polychlorinated Biphenyls (PCBs) which are difficult to decompose chemicals and can accumulate in both living organisms and the environment. Causing various symptoms such as chronic bronchial liver cancer Impaired nervous system, etc.

- The use of silica gel that is plated from natural organic substances instead of Crystal Violet plated from Cobalt Chloride, which is a banned substance in the product.

- The use of plastics that do not contain heavy metals.

- The use of water colors to reduce the impact on the environment by using water as an ingredient instead of oil paint that must be used thinner as solvent.

- The use of varnish without heavy metal.

- Using hand washing powder to wash oil stains in maintenance work.



- Use an environmentally friendly oil stain remover.
- Carbon Footprint Project is a life cycle assessment of products from raw materials, production process, transportation, product using and product scrap management after use. By specifying the amount of energy and raw materials used including waste that is released into the environment, process of collecting and evaluating the value of emissions that cause global warming to find ways to improve the environmental impact to a minimum which covers all products transformers and solar panels.
- Change the lighting bulb in the factory to be an energy-saving LED bulb, saving 3,312 kW-h of electricity per month, or reducing electricity costs by approximately 162,950 baht per year and the amount of greenhouse gas that is reduced by 10.30%.
- Installed a 27.44 kW solar power generation system (Grid connected System) on the factory roof, allowing the company to save electricity by 181,093 baht per year and resulting in a 25,332 kgCO₂ reduction per year.
- Reduce the amount of oil used in the forklift by 5% per year. There were cost of forklift oil costs reduced by 5,039.26 baht per month and resulting in lower house gas kgCO₂ per year.

7. Community or social development

The Company gives importance to working with communities by arranging for representatives to consult with the community and dialogue Step by step. To collect information from the community appropriately before implementing various projects in the development of society, organizations, educational institutions and nearby communities. As well as maintaining the traditional desserts, local traditions and instill conscience for employees at all levels to be responsible and participate in various activities for society. In 2018, the company has implemented the following activities;

- Educational support project by the Company provides opportunities for students from various institutions visited the factory to study and learn the production process of the Company that are transformer and solar panel such as Suranaree University of Technology Nakhon Ratchasima, Lampang Rajabhat University, Lampang Province, etc., including internships in order to increase knowledge and experience from actual work. In addition, the Company also has a project to accept students who want to find work experience. At a rate of not more than 70 people per year by paying help amount 150 baht / day / person.





8. Innovation and innovation which is derived from operations that are responsible for society, the environment and stakeholders

The Company places great importance on product quality. “EKARAT” transformer is outstanding and has a reputation for high quality and durability. Causing customers to trust and have the highest number of sales throughout. Therefore, the Company must continuously improve and develop products to invent new innovations and technologies which be beneficial to the company, customers and stakeholders in every part, especially reducing production costs but maintain the same high quality. In order to be able to compete on price with more competitors. Including the review of the production process to be more efficient as well. In 2018, the Company has developed innovations and production processes as follows;

- Installing a new Coil Winding Machine replacing the old one that has been used for a long time. Making it able to reduce production time by an average of about 35% per device.

Operations and report preparation

The Company has prepared a report according to the framework of the Global Reporting Initiative (GRI), taking into account the stakeholders that are important to the sustainability factor, consisting of employees, customers, partners, shareholders, communities and related government agencies. Linking relationships with social responsibility in both economic, social and environmental aspects including disclosed the report as part of the Annual Report.

Activities for social and environmental benefits (CSR after process)

The Company has continuously provided projects to reward society and the environment. Including cultivating consciousness for personnel at all levels to be responsible and participate in various activities. In 2018, the Company had activities for society and the environment as follows;

- The Company and employees jointly made merit with Phrabat Nampu Temple, Lopburi Province by donating money, some consumer goods for Luang Por Alongkot Abbot, Phrabat Nampu Temple to help orphans and HIV-infected patients.



- The Company participated in the training program for working in accordance with the plan to drive the work of the masses with the Internal Security Administration Division, Chachoengsao Province.
- Give money to support charity golf clubs. To earn income to promote public benefit activities with the industry of Chachoengsao Province.
- The project “Support sharing for society” by participating in scholarship activities, sports equipment



- The project “Support sharing for society” by the Company has participated in scholarship activities on the National Children’s Day at Prakoprattumburung School, Tha Sa-an Sub-district, Bang Pakong District, Chachoengsao Province, amount of Baht 2,000.



- The Company donated scholarships to support the National Children’s Day event in 2018 at Wat Tha Sa-An School. “Burana Sin Memorial”, Tha Sa-an Sub-district, Bang Pakong District, Chachoengsao Province.



- The Company gave a cup of coffee to Wat Sukharam School, Tha Sa-an Sub-district, Bang Pakong District, Chachoengsao Province as a gift to support the National Children’s Day event.



- “Ekarat Pan Rak To Nong Project” is a part of the project that has continued since the Company received the CSR-DIW Award 2015. In 2018, the Company received a certificate from Prakoprattumburung School, Chachoengsao Province by repaired the player in the playground and the amphitheater of the school.



- The employee's company donated their clothes to Thanyaburi homeless shelters.



- The Company participated in the “1 Glass 1 Sapling Project” by campaigning to collect unused plastic water glasses at the Sirinat Queen Mangrove Forest Ecosystem Study Center, Pranburi District, Prachuap Khiri Khan.



- The employees at our factory, Bang Pakong District, donated blood to The Red Cross, Chachoengsao Province.



- Give money to support boxing sports in annual event for Tha Sa-an Temple amount 3,000 Baht



- Employees donated money to help orphans and underprivileged for children at Ban Nokkamin Foundation, Bangkok.



- The Company has delivered coffee drinks to support the staff of Chachoengsao highway which served to facilitate on New Year Festival 2019 on December 27, 2018 to January 2, 2019.



- The Company donated some money to the Federation of Industry, Chachoengsao Province for support the show tickets “Concert for charity” as a scholarship to students who are lacking funds in Chachoengsao Province.

In addition, the Director had a policy to survey the opinions of residents in the communities around the factory about the Company’s environmental management system to acknowledge the impact from our operations to communities around the factory which will be used to improve and create satisfaction.



For the news and the activities related to CSR of the company can be followed at <https://www.ekarat.co.th/actnews/>



Opinion of the Board of Directors on the Company's Internal Control

The Company places importance on continuous internal control and risk management. The Board of Directors has set up and assigned the Audit Committee to be responsible for reviewing adequacy and appropriateness of internal control and risk management. By discharge of duty in compliance with the applicable laws, notifications, and regulations.

At the Board of Directors' meeting No.1/2019 on 17 January 2019, all the audit committees attended that namely Mr.Vinai Vittawasgarnvej, Mr.Pitak Chaicharoen and Mr.Wara Tongprasin. The Board of Directors evaluated the internal control system by asking information from the management department to inspect the documents prepared by the management and answering the evaluation form of the internal control system of the company by themselves in 5 elements, organization and environment, Risk management, the operational control of the management, information and communication system, tracking system. The Board of Directors concluded that the company has adequate internal controls to business operations and no significant deficiencies to the company. The Company's internal control in the previous year can sum up as follows:

1. Control within organization

- The Company is well aware of its corporate responsibility for the society as a whole, by ensuring its directors, executives and employees conduct ethical business without seeking personal benefits for themselves or others, avoiding conflict of interest, and refraining from the happening of corruption in their responsible works A proper disciplinary procedure is posed in case of breaching the Company's regulations, disseminated to all executives and employees.

- The Company has defined the roles of the Board of Directors and the Management in Business Etc. The Board of Directors has assigned the Board of Management to undertake business administration on its behalf, to determine policies, the organization structure and targets on business administration.

- The Company has established a selection and nomination process to recruit personnel with required knowledge, skills, expertise and experience, for staff and executive levels. It has a process in place for performance evaluation and salary increment. The other remuneration and benefits are made available as appropriate to employees at all levels without discrimination, Promote the development of employee potential and has also worked out a succession plan.



- The Company has an independent work unit handling internal audit and following up on other work units' operations in terms of internal control, risk management and compliance with applicable laws. Such internal audit unit shall implement in line with the annual audit plan, and shall report the audit result to both the Board of Management and the Audit Committee for acknowledgement, as well as comments and recommendation for the management's improvement and remedial action accordingly.

- The Audit Committee shall perform duties with independence in the scope of power and duties prescribed in the Audit Committee Charter. It has reviewed financial reports, risk management, internal control and audit systems, proposed appointment of external auditor and auditor remuneration and connected transactions or transactions that may have conflict of interest. Results of such review by the Audit Committee are also proposed to the meeting of the Board of Directors for acknowledgement and consideration on a quarterly basis and published in the Audit Committee's annual report.

2. Risk assessment

- The Company had analysis various risk factors in external factors, for example, the competition of transformer market, economic and politics, disaster etc. and internal factor are raw material, production, information technology, the management of inventory etc. Risk Management Committee reviewed risk identification and risk level assessment, and examined risk management to ensure efficiency and suitability with the organization, closely followed up on risk management performance, and reported risk management activities of all departments as the significant agenda items to the meetings of the Audit Committee and the Board of Directors for acknowledgment and consideration.

3. Control activities

- The Company has put in place written about policies, corporate rules and operation manual to control operations in financial transactions, procurement, production, quality control, sales of goods and general administration with scope of power, duties, responsibilities and approval amount limit for each level and request for budget spending. The management will communicate them to staff members for further translation into practice. The operation monitoring system is in place with reporting at meetings held at all levels on a weekly, monthly and quarterly. If found an error, will correct immediately. In addition, the Company ensures the establishment, review and improvement of policy and regulatory manuals to suit the situation.



- The Company has appointed representatives as directors in associated companies to follow up operations of such companies
- Company Secretary has been assigned to keep and regularly update information on the significant shareholder, directors, executives, and connected persons, to facilitate monitoring and review of related transactions or transactions prone to conflict of interest.

4. Information and communication

- The Company has established adequate information and communication system. It has prepared accurate, complete and reliable information within an appropriate period, An IT system is in place to support the data storing/searching and the operations and has been updated to meet the changes in the IT world Such as prevention, access to the IT systems of the company wrongfully. In addition, the Public Information Center is set up to control and manage the Company's information to strictly comply with the Official Information Act B.E. 2540 (1997).
- The Company has an adequate and effective IT system. There are communication channels in and between the departments, allowing timely and quick access of news and information through such means as meetings, emails, intranet, internal broadcast and social media such as Line Group of operating lines, etc., thus ensuring the efficient up-to-date communication within the company and reaching to all employees which is the vital factor in maintaining the unity.
- For external parties, the Company has disclosed and communicated its information comprehensively and equitably to the stakeholders through its communication channel, i.e., www.ekarat.co.th and in case of disclosure according to the criteria of the Stock Exchange of Thailand (SET), such as financial report, annual report of operating results, and minutes of the annual general meeting of shareholders, via the SET's information system and the company's website. Moreover, the company has made available a channel for its stakeholders to report any incident or any act prone to a violation of the laws and rules as well as the code of business ethics, which may cause damage to the company by post or e-mail to the company secretary or Managing Director. The Company also conducts customer satisfaction surveys to listen to the problems and complaints including the suggestions to improve services for more efficiency.



5. Monitoring activities

- The Company has a process to monitor business operations at director, executive, and managerial levels through various meetings, namely Board of Management (weekly), Board of Directors meeting (quarterly), Board Committee meetings to consider to consider and improve to achieve the goals regularly.
- The Company monitors and evaluates its internal controls at all levels and preparing the internal control reports annually Including reviewing and evaluating the effectiveness of the internal audit from the Company's internal audit department according to the set plans.
- The internal auditors will prepare the audit report and suggestion for improvement and presented to Executives for acknowledgement and approval. The Office of the Internal Audit monitors the progress of those implementations through to completion and provides a summary of progress for presentation to Managing Director and Audit Committee to ensure the effective practice as per the recommendations. Also, in the case of suspected transactions or actions that could potentially cause damage to the company's operating results such as conflicts of interest, fraud, major irregularity or deficiency in the internal control system or a breach of rules, the head of Office of the Internal Audit will report to the Managing Director and the Audit Committee immediately.

Head of Internal Audit Control

The Board of Management, with the consent of the Audit Committee, has appointed Mrs.Suwannee Sujaritvanitchpong as Manager, Internal Audit Control Office and taking effect on April 18, 2005. She had internal audit work experience and obtained training relating to internal audit work, i.e. a course for Certificate of Internal Auditor of the Institute of Internal Auditors of Thailand and risk management course and has knowledge and understanding of the company's business activities and operations. She is thus considered qualified and appropriate to perform duties in this position.

Appointment, removal or rotation of Manager of Internal Audit Control Department shall be subject to approval or consent from the Audit Committee.



The Audit Committee of Ekarat Engineering Public Company Limited was appointed by the resolution of the Board of Director on February 18, 2005. The members of the Audit Committee are Mr. Vinai Vittavasgarnvej as the Chairman of the Audit Committee, Mr. Wara Tongprasin and Mr. Pitak Chaicharoen as the Audit Committee members, and Mrs. Suwannee Sujaritvanichpong – Internal audit Manager, as the secretary of the Audit Committee. Each of the Audit Committee members is not the executive or staff or related person with the Company.

Since January 1 – December 31, 2018, the Audit Committee held 5 meetings. The Audit Committee has invited the management and/or the company's auditors to attend the meeting for discuss or inform the board as the agenda required. The Audit Committee's meeting considered the subjects as stipulated duties as follows:

1. Reviewed, commented, and provided suggestion, the Company's quarterly and annually financial statements before submitting to the Board of Directors for approval.
2. Consider the related transactions between the Company, the subsidiaries and the person who might have the conflict of interests. The Audit Committee did not find any transactions that might indicate the conflict of interests.
3. Presented the Internal audit reports and corrective suggestions to the Board of Directors.
4. Evaluated the Company's and subsidiaries' internal controls, which comprise the organization and environment, risk management, management operation control, information system and communication, and monitoring system. The Audit Committee will present to the board for consideration in the said matters
5. Recommended Office of ANS Audit Company Limited to be the company's auditors for year 2019 including company's auditor remuneration.
6. The Audit Committee considered the Corporate Governance and Risk Management system and agreed that the Corporate Governance and Risk Management system of the Company is efficient.
7. The Audit Committee evaluated the operation of Audit Committee time by time and adjusted the Audit Committee charter to conform to related rules and regulations.

On behalf of the Audit Committee,



(Mr. Vinai Vittavasgarnvej)

Chairman of the Audit Committee





Related Transaction

The Company has specified rule including guidelines clearly on the related transaction with the associated persons, subject to strictly comply with the notification and regulation of the Stock Exchange of Thailand and the Securities and Exchange Commission is principal, summarized as followings.

- Proposing a connected transaction under such the rules to the Board of Directors and/or the shareholders' meeting for the approval. Through the consideration of the Audit Committee for fairness, the pricing is reasonable and take into the best interests of the Company and the interest directors no right to cast vote at the meeting.
- Disclosure of connected transactions with related companies adequately and comply with the regulations of the Securities and Exchange Commission. As well as the accounting standards on information disclosure about related parties or businesses.

The Group incurred business transactions with related entities which have the same group of shareholders. The significant remaining balances and inter-company transactions between the Group with related entities and persons in year ended 2018 are as follows:-



1. **Inter-assets and liabilities** are as follows:-

(Unit : Baht)

Type of items	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
- Trade receivable				
Ekarat Solar Co., Ltd.	-	-	-	6,272,621
- Other receivable				
Ekarat Solar Co., Ltd.	-	-	-	14,014
Ekarat Energy Co., Ltd.	-	-	12,000	8,000
Total	-	-	12,000	22,014
- Trade payables				
Ekarat Solar Co., Ltd.	-	-	227,625	903,329
- Other payables				
Ekarat Solar Co., Ltd.	-	-	-	64,000
- Service receivable deposit				
Ekarat Solar Co., Ltd.	-	-	-	348,000
- Short-term loan due from and accrued interest income				
Ekarat Solar Co., Ltd.				
- Short-term loan due from				
Beginning balance	-	-	10,496,986	189,378,250
Forgiveness the debt	-	-	-	(178,881,264)
Ending balance	-	-	10,496,986	10,496,986
Less Allowance for doubtful debts	-	-	(10,496,986)	(10,496,986)
Net	-	-	-	-
- Accrued interest income				
Accrued interest income	-	-	703,585	152,494
Less Allowance for doubtful debts	-	-	(703,585)	(152,494)
Net	-	-	-	-
Total	-	-	-	-

For the year ended December 31, 2018 and 2017, there was movement in the allowance for accrued interest income as follows: -

(Unit : Baht)

	Separate financial statements	
	2018	2017
As at January 1,	152,494	38,207,174
Plus Increase during in year	551,091	7,343,679
Less Forgiveness the debt	-	(45,398,359)
As at December 31,	703,585	152,494

On 21 September 2017, The Board of Directors of the Company resolved that to forgiveness the debt from restructuring, on December 2013 total amounted to Baht 218.00 million, consisting of principal of Baht 178.88 million and accrued interest receivable of Baht 39.12 million to Ekarat Solar Co., Ltd. (subsidiary company, 99.99% shares held by the Company). The management believes that the subsidiary company has no ability to repay the debt to the Company. There was no impact on the profit for the three-month and nine-month periods ended 30 September 2017 because of the Company had recorded allowance for doubtful accounts of loans and accrued interest receivables in total amount already.



2. Inter-revenues and expenses are as follows: -

(Unit : Baht)

Type of items	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,		For the year ended December 31,	
	2018	2017	2018	2017
- Revenue from sales of goods				
Ekarat Solar Co., Ltd.	-	-	1,160,000	131,510
- Revenue from service of installing a solar panel				
Ekarat Solar Co., Ltd.	-	-	-	13,413,564
- Interest income				
Ekarat Solar Co., Ltd.	-	-	551,092	7,343,679
- Other income				
Ekarat Solar Co., Ltd.	-	-	13,744	14,014
- Purchase of goods				
Ekarat Solar Co., Ltd.	-	-	315,684	8,243,107
- Doubtful debt				
Ekarat Solar Co., Ltd.	-	-	551,091	7,343,679
- Rental expenses				
Ekarat Energy Co., Ltd.	-	-	24,000	24,000
- Consultant fee				
SKP Consulting and Engineering Co.,Ltd.	8,971,963	8,971,963	8,971,963	8,971,963
- Guarantee fee				
KV Asset Company Limited	-	1,517,780	-	1,517,780
Khun Theeraya Kanokpruk	-	1,517,780	-	1,517,780
Total	-	3,035,560	-	3,035,560



(Unit : Baht)

Type of items	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,		For the year ended December 31,	
	2018	2017	2018	2017
- Directors and key management compensation				
Short-term benefits	16,134,000	18,414,500	16,134,000	18,414,500
Post-employment benefits	230,638	220,973	230,638	220,973
Directors' remuneration	5,479,000	5,129,000	5,479,000	5,129,000
Total	21,843,638	23,764,473	21,843,638	23,764,473

Policy of setting prices

Policy

Price of sale-purchase goods	Mutually agreed price based on market
Rental and services income	Mutually agreed price based on contract
Interest income	Based on the agreed price according to the interest rates of domestic commercial banks.
Consultant fee	Mutually agreed price based on contract
Guarantee fee	2% per annum (Period 2 year) of credit facilities from financial institution

As at December 31, 2018 and 2017, the company entered into business development consultant contract in the project with a related company by the contract dated 1 January 2017, the contract is for 2 years from January 1, 2017 ending December 31, 2018 Service fee is Baht 0.80 million per month (included VAT).

3. Relationship of related companies, consisted of: -

Name of companies	Nationality	Nature of relationship	Related by
Ekarat Solar Co., Ltd.	Thai	Subsidiary	Direct shares holding of 99.99%
Ekarat Energy Co., Ltd.	Thai	Subsidiary	Direct shares holding of 99.99%
KV Asset Company Limited	Thai	Related company	Mutually director and shareholder
Chula Engineering Company Limited	Thai	Related company	Joint shares holding
SKP Consulting and Engineering Co.,Ltd.	Thai	Related company	Is the company that is close person of the directors being the shareholder and director
Khun Theeraya Kanokpruk	Thai	Major shareholder	Direct shares holding more than 5%

Necessity and reasonableness of related party transaction

For the above of related party transactions, the company has the propose to bring the highest benefits as per the company's regular business procedure and agreeable prices from the related companies, thus yield benefit of both with no propose transfer benefits to each other or no transactions in particular.

Policy on Future Connected Transaction

The Audit Committee will oversee the future related party transaction to ensure that transactions are make property with a fair rate of return and approved in accordance with appropriate processes and procedures. Items and values of related party transaction are to be disclosed in compliance to relevant regulatory requirements.

The consolidated financial statements of 2018 comprise of separate financial statements and its subsidiaries, Ekarat Solar Co., Ltd. and Ekarat Energy Co., Ltd.

Financial Highlights

		2018	2017
Statement of Income			
Total Revenues	(Million THB)	1,492.21	1,732.27
Total Costs	(Million THB)	1193.66	1,354.31
Selling Expenses	(Million THB)	119.41	125.94
Administration Expenses	(Million THB)	155.60	165.45
Gross Profit	(Million THB)	270.64	330.14
Net (Loss) Profit	(Million THB)	(279.65)	44.30
Statement of Financial Position			
Total Assets	(Million THB)	1,616.25	2,011.90
Total Liabilities	(Million THB)	735.24	810.95
Total Shareholders' Equity	(Million THB)	881.01	1,200.95
Share capital			
Ordinary Shares	(Shares)	1,343.29	1,343.29
Paid-up share Capital	(Million THB)	1,074.63	1,074.63
Par Value	(THB)	0.80	0.80
Earnings (loss) Per Share	(THB)	(0.208)	0.033
Financial Ratios			
Gross Profit Margin	(%)	19.31	20.01
Net Profit (Loss) Margin	(%)	(18.74)	2.56
Return on Total Assets	(%)	(17.95)	4.20
Return on Equity	(%)	(26.86)	3.70
Total Debt to Equity	(Times)	0.83	0.68



Summary of operating results for FY2018 in comparison with FY2017:

Unit : Million Baht	2018	2017	Variance	
			MTHB	%
Total revenue from operation	1,464.30	1,684.45	(220.15)	(13.07)
- Revenue from sales of goods	1,114.08	1,400.17	(286.09)	(20.43)
- Revenue from services and maintenance	197.84	193.61	4.23	2.18
- Revenue from installation of solar electric generating system	107.07	43.25	63.82	147.56
- Revenue from sales of electricity current	45.31	47.42	(2.11)	(4.45)
Total cost from operation	1,193.66	1,354.31	(160.65)	(11.86)
- Cost of goods sold	942.32	1,168.84	(226.52)	(19.38)
- Cost of services and maintenance	116.85	117.78	(0.93)	(0.79)
- Cost from installation of solar electric generating system	99.24	39.42	59.82	151.75
- Cost of electricity current sales	23.14	21.39	1.75	8.18
- Reversed loss on devaluation of goods	12.11	6.89	5.22	75.76
Gross profit	270.64	330.14	(59.50)	(18.02)
Other incomes	27.91	47.82	(19.91)	(41.64)
Loss on impairment of fixed assets	349.09	-	349.09	100.00
Selling expenses	119.41	125.94	(6.53)	(5.19)
Administrative expenses	155.60	165.45	(9.85)	(5.95)
Financial cost	22.17	36.55	(14.38)	(39.34)
Profit (loss) before income tax expenses	(347.68)	50.02	(397.70)	(795.08)
Income tax revenue (expenses)	68.03	(5.72)	73.75	1,289.34
Profit (loss) for the year	(279.65)	44.30	(323.95)	(731.26)
Earnings (loss) per share	(0.208)	0.033	(0.241)	(730.30)



Operation Analysis

Revenues

The Company had the revenues comprised in 4 activities was Sales of Distribution Transformers, Services and maintenances, Installation of solar electric generating system and Sales of electricity current.

1. The revenue from the sales of goods in year 2018 and 2017 was Baht 1,114.08 million and Baht 1,400.17 million, respectively or decreased 20.43%. Because the revenue from selling transformers to government agencies has decreased considerably.

2. The revenue from services and maintenances in year 2018 and 2017 was Baht 197.84 million and Baht 193.61 million, respectively or increased 2.18%

3. The revenue from installation of solar electric generating system in year 2018 and 2017 was Baht 107.07 million and Baht 43.25 million, respectively or increased 147.56%. Because it's the recognition of revenue from the installation of solar power generation system, the big project that the company got the job in 2017.

4. The revenue from sales of electricity current in year 2018 and 2017 was Baht 45.31 million and Baht 47.42 million, respectively or decreased 4.45%. Due to maintenance of equipment used to generate electricity, therefore need to temporarily stop electricity production.

Cost of sales

1. The Company has the cost of the sale of goods in year 2018 and 2017 of Baht 942.32 million and Baht 1,168.84 million, respectively. The proportion of cost of the sale of goods to the revenue from the sale of goods in year 2018 and 2017 was 84.58% and 83.48%, respectively, its increased when compare to year 2017 about 1.10%.

2. The Cost of the sale of services and maintenances in year 2018 and 2017 was Baht 116.85 million and Baht 117.78 million, respectively. The proportion of cost of the sale of services and maintenances to the revenue from the sale of services and maintenances in 2018 was 59.06% lower than year 2017 which was 60.83% or decreased 1.77%.

3. The Cost of the sale of installation of solar electric generating system in year 2018 and 2017 is Baht 99.24 million and Baht 39.42 million, respectively. The proportion of cost of the sale of installation of solar electric generating system to the revenue from the sale of installation of solar electric generating system in 2018 was 92.69% higher than year 2017 which was 91.13% or increased 1.55%.



4. The Cost of the sales of electricity current in year 2018 and 2017 was Baht 23.14 million and Baht 21.39 million, respectively. The proportion of cost of electricity current to the revenue from sales of electricity current in year 2018 and 2017 about 51.07% and 45.10%, respectively or increased 5.97%.

Loss on impairment of fixed assets

The Company has loss on impairment of fixed assets in year 2018 of Baht 349.09 million increase 100% from year 2017. The cause of the solar cell factory in Rayong province was produced in very small quantities which wasn't enough to breakeven. It also had a higher production cost than the market price, thus causing impairment of machinery and equipment almost full value.

Selling Expenses

The Company had the selling expenses in year 2018 and 2017 of Baht 119.41 million and Baht 125.94 million, respectively. The proportion of the selling expenses to total revenues in year 2018 and 2017 was 8.00% and 7.27%, respectively or increased 0.73%.

Administration Expenses

The Company has the administration expenses in year 2018 and 2017 of Baht 155.60 million and Baht 165.45 million, respectively. The proportion of the administration expenses to total revenues in year 2018 and 2017 is 10.43% and 9.55%, respectively or increased 0.88%.

Gross Profit

The Company has the gross profit margin from the sale of goods in year 2018 and 2017 was 15.42% and 16.52%, respectively. The gross profit margin from services and maintenances in year 2018 and 2017 is 40.94% and 39.17%, respectively. The gross profit margin from installation of solar electric generating system in year 2018 and 2017 was 7.31% and 8.85%, respectively. The gross profit margin from the sales of electricity current in year 2018 and 2017 was 48.93% and 54.89%, respectively.

The decrease in the gross profit margin of the sale of goods because the Company has reduced product sales while most production costs are fixed costs. The increase in the gross profit margin of services and maintenances from the Company has more revenue from services and maintenances and better cost control. The gross profit margin from installation of solar electric generating system decreased from the Company has managed the costs and expenses in the implementation of the installation of the solar electric generating system didn't good enough. While the gross profit margin from the sale of electricity current decreased from the cost of maintaining and changing equipment.

Net Profit

The Company has the Net Profit(loss) before the corporate income tax in year 2018 and 2017 of Baht (347.68) million and Baht 50.02 million, respectively or decreased (795.08)%.

The Company had the corporate income tax expense paid in year 2018 and 2017 of Baht 68.03 million and Baht (5.72) million. The Net Profit (loss) in year 2018 and 2017 was Baht (279.65) million and Baht 44.30 million decreased Baht (323.95) million or (731.23) % compare to year 2017.

Financial Analysis

Summary of financial position

Unit : Million Baht	2018	2017	Variance	
			MTHB	%
Asset				
- Cash and cash equivalents	51.93	51.95	(0.02)	(0.04)
- Trade and other receivables	277.26	250.33	26.93	10.76
- Inventories	423.81	516.29	(92.48)	(17.91)
Total current assets	754.94	822.00	(67.06)	(8.16)
- Property, plant and equipment	707.35	1,113.44	(406.09)	(36.47)
- Deferred tax assets	94.06	26.63	67.43	253.21
Total non-current assets	861.31	1,189.90	(328.59)	(27.61)
Total assets	1,616.25	2,011.90	(395.65)	(19.67)
- Trade and other payables	240.52	270.43	(29.91)	(11.06)
- Long-term loans from financial institutions	88.89	110.73	(21.84)	(19.72)
Total liabilities	735.24	810.95	(75.71)	(9.34)
Shareholders' equity	881.01	1,200.95	(319.94)	(26.64)
Total liabilities and shareholders' equity	1,616.25	2,011.90	(395.65)	(19.67)



Assets

As at December 31, 2018 and 2017, the Company had the total assets of Baht 1,616.25 million and 2,011.90 million, respectively or decreased Baht 395.65 million or 19.66 %. The decrease in assets of the Company caused from loss on impairment of fixed assets of the solar cell factory in Rayong province increased almost 100%.

Trade and Others receivable

As at December 31, 2018 and 2017, the Company had Trade and Others receivable after deducted allowance for doubtful debt of Baht 268.33 million and Baht 228.91 million, respectively.

The Company had the credit terms for the customer about 30-90 days. The average collection days in year 2018 and 2017 are 66 and 78 days, respectively. It found that the company could collect debt from customers faster from last year.

Inventories

The company has the Inventories (Net) after deducted the allowance for devaluation of inventories at December 31, 2018 and 2017 of Baht 423.81 million and Baht 516.29 million, respectively. In year 2018, the Inventories comprise of Finished goods deducted the allowance for devaluation of inventories Baht 105.74 million, Work in process Baht 83.01 million, Raw Material Baht 218.36 million, Supplies Baht 8.80 million, and Materials in transit Baht 7.91 million. The inventories turnover ratio in year 2018 and 2017 is 2.51 and 2.93 times.

Deferred tax assets

As at December 31, 2018 and 2017, the Company had deferred tax assets of Baht 94.06 million and Baht 26.63 million, increased Baht 67.43 million or 253.21% mainly due to the increase of allowance for impairment of fixed assets.

Liabilities

As at December 31, 2018 and 2017, the Company had the liabilities of Baht 735.24 million and Baht 810.95 million or decreased Baht 75.71 million or 9.34%. The cause of trade account payables were down from the previous year and the decreasing of the liabilities from the Company partially repaid the long-term loans from financial institutions.



Trade and Other Payable

As at December 31, 2018 and 2017, the Company recorded trade and other payables of Baht 240.52 million and Baht 270.43 million, respectively or decreased Baht 29.91 million.

The Company received the credit terms from the creditor about 30-60 days. The average repayment days of year 2018 and 2017 are 79 and 78 days, respectively.

Shareholders' Equity

As at December 31, 2018 and 2017, the Company shareholders' equity is Baht 881.01 million and Baht 1,200.95 million, respectively or decreased Baht 319.94 million because the company had loss profit from operation of Baht (279.65) million, resulting in reduced retained earnings Baht (218.81) million

Capital Structure Suitability

The company's Debt to Equity (D/E) ratio at December 31, 2018 and 2017 is 0.83 and 0.68 times, respectively. The D/E ratio increased because the Company has accumulated losses in 2018.



The Board of Directors of Ekarat Engineering Public Company Limited concerned to the duty and responsibility of the completeness and accuracy of the financial statements. The financial statements of Ekarat Engineering Public Company Limited were prepared in accordance with the rules and regulations of the company and generally accepted accounting standards in Thailand. Appropriate accounting policies were selected and applied consistently and were accompanied by careful judgment. All of the important data is disclosed in Notes to financial statements accurately which audited by Certified Public Accountant and reviewed by the Audit Committee.

The Board of Directors has appointed the Audit Committee, which comprised with the Independent Directors, to review and responsible for the quality of the financial statements and Internal audit. The observation of Audit Committee related to these matters is appeared in the Audit Committees' Report which is in this annual report.

The Board of Directors has ensured the accuracy and appropriated disclosure of the Company's financial statements disclosed in the annual report year 2018 and the financial statements were prepared in accordance with the generally accepted accounting standards. The Internal audit of the company was accurate and appropriated.



Mr. Danucha Noichaiboon

Managing Director



To the Shareholders of Ekarat Engineering Public Company Limited and its subsidiaries

Opinion

I have audited the accompanying consolidated and separate financial statements of Ekarat Engineering Public Company Limited and its subsidiaries (the Group) and of Ekarat Engineering Public Company Limited (the Company), which comprise the consolidated and separate statements of financial position as at December 31, 2018, and the related consolidated and separate statements of comprehensive income, consolidated and separate statements of changes in shareholders' equity and consolidated and separate statements of cash flows for the year then ended, and notes to the 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 and separate financial position of the Ekarat Engineering Public Company Limited and its subsidiaries and of Ekarat Engineering Public Company Limited as at December 31, 2018, and its consolidated and separate financial performance and its consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my report. I am independent of the Group in accordance with the Federation of Accounting Professions under the Royal Patronage of his Majesty the King's Code of Ethics for Professional Accountants together with the ethical requirements that are relevant to our audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements.

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



Allowance for doubtful accounts

Reference to Note to Financial Statement No.7

The adequacy of the allowance for doubtful accounts is important that the management must use highly judgement to determine whether a debtor has the opportunity to cannot collect money, and definition the recoverable amount which is a process that implicated uncertainties inevitable due to relies on assumptions and by many factors. Therefore, I have to focus on testing the reasonableness of management's judgement to determine the amount of the allowance for doubtful accounts that may have occurred. The value as above will be determined from the economic environment and political situation, payment history of debtors in the past and the current financial status of the debtor by considering the factors that mentioned above together with the outstanding balance of aging report. I determined that is key audit matter in my auditing.

How my audit addressed the key audit matter.

I have evaluated and tested the effectiveness of the internal control system which the management used to prepare the allowance for doubtful accounts report. The method is as follows:

- Test the effectiveness of the control system used to recognize the allowance for doubtful accounts of the Group. It starts with understanding the revenue recognition control system and trade receivables in the annual test, it is designed to recognize income and trade receivables are accurate and complete. This will result in the Group 's outstanding aging records being accurate and complete including testing of data access control systems of debtors from third parties.
- Test to calculate the number of outstanding days in the separated aging report (Report) which is included in the revenue cycle control testing. Completeness test of the transaction by reconciliation report to the general ledger. Test control system used by the management in the credit approval process to reduce the opportunity of bad debt in the future and test of validate the crediting period for each customer with evidence approved by the authority.
- Test the appropriateness of the allowance for doubtful accounts policy set by the management by test of appropriateness of the debt aging period and the expected rate of loss from the receivables received during the period and after the end of period.

Based on such tests, I found that the management's assumptions used in estimating the allowance for doubtful accounts are reasonable.



Allowance for diminution in value of inventories

Reference to Note to Financial Statement No.9

Indicates that the inventories are going to be out of date will be determined by the age of the inventories in the inventory report at the end of the period. The management will determine the product life cycle and the expected price of the inventories are indications that it is out of date in each age range. The management's judgement to evaluate the net realizable value of out of date inventories is a process that related to uncertainty which unavoidable. Due to the assumptions in this matter mainly require management experience. Therefore, I focus on importance to the appropriateness of the allowance for diminution in value of inventories and determined that is key audit matter in my auditing.

How my audit addressed the key audit matter.

I have evaluated and tested the effectiveness of inventory control in the annual test. The control system will affect the reliability of important information that will be used to calculate the allowance for diminution in value of inventories. The method is as follows:

- Test the appropriateness of data used by the Group to determine slow-moving or out-of-date inventories that data will come from the product aging report at the end of the period. I have tested the accuracy of the received date with the recorded document in to the inventory report and recalculate the data to test the accuracy of the report.
- Test the appropriateness of the percentage that the management expects the value of the inventories to decline if the product has a longer life by considering that the discount rate of the inventory in each age range is consistent with the expected selling price based on the product's condition. Analysis of the turnover rate of each type of inventories. The management inquiries about plan will be used to manage dead stock inventories and attend the stock checking at the end of the period to observe the store location, storage method and the overall physical condition of the inventories.

Based on such tests, I found that the management's assumptions are used to estimate the values of inventories allowance for diminution in value are reasonable.



Recoverable amount of asset

Reference to Note to Financial Statement No.13

According to the consolidated financial statements, Group recognized loss on impairment of property plant, and equipment in the consolidated and separate statement of comprehensive income for the year ended 31 December 2018, amounting to Baht 349.79 million, I therefore determine the recoverable amount of assets is key audit matter in my auditing because the data that the appraiser used to determine the fair value of the assets that the most of data is unobservable inputs. Therefore, the appraiser must use more judgement in selecting assets that are similar to the Company's assets as comparative information and use techniques to adjust the selling price to suit with the Company's assets and in case of the asset is unique the appraiser needs to determine factors that are caused by physical deterioration, obsolescence and economic deterioration or from external factors that may cause the assets to not be used normally. And changes in assumptions relating to such factors will significantly affect the fair value of assets. Therefore, I give priority to testing the reasonableness of the assumptions used by appraiser.

How my audit addressed the key audit matter.

I assessed the reasonableness of the assumptions and methods used by the appraiser to calculate the fair value of the assets as follows:

- Review the assessment report and consider the reasonableness of the judgements that the appraiser used to support the determination of the fair value of the asset.
- Test the suitability and adequacy of the evidence that the appraiser used to determine the fair value of an asset by testing the evidence that the appraiser received from the management and the actual financial information of the Company.
- Test of value calculation



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 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 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 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 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 charge with governance to correct the materially misstatement.

Responsibilities of Management and Those Charge with Governance for the Financial Statements

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

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

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



Auditor's Responsibilities for the Audit of the Financial Statements

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

As part of an audit in accordance with 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 financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If I conclude that a material uncertainty exists, I have required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.



- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

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

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

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

SP Audit Company Limited



(Miss Yuphin Chumjai)

Certified Public Accountant (Thailand) No.8622

Bangkok

February 26, 2019



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF FINANCIAL POSITION
As at December 31, 2018

(Unit : Baht)

Assets	Notes	Consolidated financial statements		Separate financial statements	
		December 31,	December 31,	December 31,	December 31,
		2018	2017	2018	2017
Current assets					
Cash and cash equivalents items	28.1	51,933,289	51,949,449	47,490,469	45,522,131
Short-term investments	6	34,542	69,085	34,542	69,085
Trade and other receivables	7	277,261,658	250,325,538	276,884,923	251,514,866
Short-term loan and interest receivable to related parties	5.1	-	-	-	-
Inventories	8	423,813,658	516,292,259	423,813,654	514,138,612
Other current assets		1,893,347	3,366,790	1,839,998	3,071,127
Total current assets		754,936,494	822,003,121	750,063,586	814,315,821
Non-current assets					
Investments in subsidiary companies	9	-	-	2,499,925	2,499,925
General investments	10	-	-	-	-
Investment properties	11	1,631,755	1,631,755	1,631,755	1,631,755
Assets for rent	12	3,919,459	7,464,646	3,919,459	7,464,646
Property, plant and equipment	13	707,353,390	1,113,444,696	702,545,066	1,108,448,838
Intangible assets	14	9,445,499	9,716,819	9,445,499	9,716,819
Restricted bank deposits	15	18,650,000	4,650,000	18,650,000	4,650,000
Prepaid rent under operating lease	16	4,676,938	4,880,307	4,676,938	4,880,307
Deferred tax assets	17	94,055,515	26,631,732	94,055,515	26,631,732
Withholding tax		21,372,092	17,857,216	21,355,316	17,840,582
Other non-current assets		205,574	3,619,927	205,574	3,619,927
Total non-current assets		861,310,222	1,189,897,098	858,985,047	1,187,384,531
Total assets		1,616,246,716	2,011,900,219	1,609,048,633	2,001,700,352

Note to financial statements are parts of these financial statements.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF FINANCIAL POSITION
As at December 31, 2018

(Unit : Baht)

Liabilities and shareholders' equity	Notes	Consolidated financial statements		Separate financial statements	
		December 31,	December 31,	December 31,	December 31,
		2018	2017	2018	2017
Current liabilities					
Short-term loans from financial institutions	18	215,271,490	209,941,739	215,271,490	209,941,739
Trade and other payables	19	240,524,901	270,426,007	240,752,526	271,010,705
Accrued expenses		34,946,775	56,383,259	30,429,630	51,494,914
Advance received for goods and services	20	28,139,133	33,612,987	28,139,133	33,960,987
Current portion of :					
Loans from financial institutions	21	21,655,163	21,729,479	21,655,163	21,729,479
Liabilities under financial lease contracts	22	10,211,032	12,267,098	10,211,032	12,267,098
Other current liabilities		8,245,968	9,676,989	8,189,766	9,461,139
Total current liabilities		558,994,462	614,037,558	554,648,740	609,866,061
Non-current liabilities					
Long-term loans from financial institutions	21	88,889,927	110,725,169	88,889,927	110,725,169
Liabilities under financial lease contracts	22	12,682,777	8,837,211	12,682,777	8,837,211
Employee benefit obligations	23	69,397,874	71,863,307	69,397,874	71,863,307
Other non-current liabilities		5,274,076	5,488,309	5,274,076	5,488,310
Total non-current liabilities		176,244,654	196,913,996	176,244,654	196,913,997
Total liabilities		735,239,116	810,951,554	730,893,394	806,780,058

Note to financial statements are parts of these financial statements.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF FINANCIAL POSITION
As at December 31, 2018

(Unit : Baht)

Shareholders' equity	Notes	Consolidated financial statements		Separate financial statements	
		December 31,	December 31,	December 31,	December 31,
		2018	2017	2018	2017
Share capital					
Authorized share capital					
1,343,289,404 Ordinary shares @ Baht 0.80 each		1,074,631,523	1,074,631,523	1,074,631,523	1,074,631,523
<hr/>					
Issued and paid-up share capital					
1,343,289,404 Ordinary shares @ Baht 0.80 each		1,074,631,523	1,074,631,523	1,074,631,523	1,074,631,523
Retained earnings					
Appropriated					
Legal reserve	24	25,182,581	25,182,581	25,182,581	25,182,581
Unappropriated		(218,806,504)	101,134,561	(221,658,865)	95,106,190
Total shareholders' equity		881,007,600	1,200,948,665	878,155,239	1,194,920,294
Total liabilities and shareholders' equity		1,616,246,716	2,011,900,219	1,609,048,633	2,001,700,352

Note to financial statements are parts of these financial statements.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF COMPREHENSIVE INCOME
For the year ended December 31, 2018

(Unit : Baht)

Notes	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Revenue from operation				
Revenue from sales of goods	1,114,077,459	1,400,167,061	1,113,968,709	1,398,976,909
Revenue from services and maintenance	197,843,274	193,609,686	197,867,274	193,633,686
Revenue from service of installing a solar panel	107,067,234	43,253,928	107,067,234	41,358,780
Revenue from sales of electricity current	45,307,874	47,424,226	45,307,874	47,424,226
Total revenue from operation	1,464,295,841	1,684,454,901	1,464,211,091	1,681,393,601
Cost from operation				
Cost of goods sold	(942,322,960)	(1,168,843,718)	(942,286,006)	(1,164,695,674)
Cost of services and maintenance	(116,846,829)	(117,779,979)	(116,846,829)	(117,779,979)
Cost from installation of service of installing a solar panel	(99,238,924)	(39,416,004)	(98,918,309)	(38,011,980)
Cost of electricity current sales	(23,142,970)	(21,386,724)	(22,877,911)	(21,229,974)
Loss on devaluation of goods	(12,106,045)	(6,886,386)	(10,849,901)	(10,591,352)
Total cost from operation	(1,193,657,728)	(1,354,312,811)	(1,191,778,956)	(1,352,308,959)
Gross profit	270,638,113	330,142,090	272,432,135	329,084,642
Other incomes	27,909,839	47,815,197	28,385,904	54,976,015
Loss on impairment of assets	(349,090,450)	-	(348,619,215)	-
Selling expenses	(119,406,223)	(125,940,612)	(119,406,223)	(125,538,412)
Administrative expenses	(155,604,297)	(165,447,614)	(155,169,609)	(165,384,793)
Financial cost	(22,126,944)	(36,545,618)	(22,126,944)	(36,540,828)
Profit (loss) before income tax expenses	(347,679,962)	50,023,443	(344,503,952)	56,596,624
Income tax revenue (expenses)	26	68,033,049	68,033,049	(5,721,698)
Profit (loss) for the year	(279,646,913)	44,301,745	(276,470,903)	50,874,926
Profit (loss) attributable to for the year				
Shareholders of the Parent Company	(279,646,913)	44,301,745	(276,470,903)	50,874,926
Non-controlling interests of the subsidiaries	-	-	-	-
Profit (loss) for the year	(279,646,913)	44,301,745	(276,470,903)	50,874,926

Note to financial statements are parts of these financial statements.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF COMPREHENSIVE INCOME
For the year ended December 31, 2018

(Unit : Baht)

	Notes	Consolidated financial statements		Separate financial statements	
		2018	2017	2018	2017
Comprehensive income (loss) attributable to for the year					
Shareholders of the Parent Company		(279,646,913)	44,301,745	(276,470,903)	50,874,926
Non-controlling interests of the subsidiaries		-	-	-	-
Total comprehensive income (loss) for the year		(279,646,913)	44,301,745	(276,470,903)	50,874,926
Earnings (loss) per share					
Basic earning (loss) per share	27	(0.208)	0.033	(0.206)	0.038

Note to financial statenemnts are parts of these financial statements.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

For the year ended December 31, 2018

Consolidated financial statements

(Unit : Baht)

	Notes	Issued and paid-up share capital	Retained earnings		
			Appropriated legal reserve	Unappropriated	Total
Balance as at January 1, 2017		1,074,631,523	22,638,835	92,955,026	1,190,225,384
Transaction with shareholder on directly recorded to equity					
Dividend paid	24	-	-	(33,578,464)	(33,578,464)
Appropriated legal reserve	24	-	2,543,746	(2,543,746)	-
Total transaction with shareholder on directly recorded to equity		-	2,543,746	(36,122,210)	(33,578,464)
Comprehensive income for the year					
Profit for the year		-	-	44,301,745	44,301,745
Total comprehensive income for the year		-	-	44,301,745	44,301,745
Balance as at December 31, 2017		1,074,631,523	25,182,581	101,134,561	1,200,948,665
Transaction with shareholder on directly recorded to equity					
Dividend paid	24	-	-	(40,294,152)	(40,294,152)
Appropriated legal reserve	24	-	-	-	-
Total transaction with shareholder on directly recorded to equity		-	-	(40,294,152)	(40,294,152)
Comprehensive loss for the year					
Loss for the year		-	-	(279,646,913)	(279,646,913)
Total comprehensive loss for the year		-	-	(279,646,913)	(279,646,913)
Balance as at December 31, 2018		1,074,631,523	25,182,581	(218,806,504)	881,007,600

Notes to financial statements are an integral part of these statement.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
For the year ended December 31, 2018
Separate financial statements

(Unit : Baht)

	Notes	Issued and paid-up share capital	Retained earnings		
			Appropriated legal reserve	Unappropriated	Total
Balance as at January 1, 2017		1,074,631,523	22,638,835	80,353,474	1,177,623,832
Transaction with shareholder on directly recorded to equity					
Dividend paid	24	-	-	(33,578,464)	(33,578,464)
Appropriated legal reserve	24	-	2,543,746	(2,543,746)	-
Total transaction with shareholder on directly recorded to equity		-	2,543,746	(36,122,210)	(33,578,464)
Total comprehensive income for the year					
Profit for the year		-	-	50,874,926	50,874,926
Total comprehensive income for the year		-	-	50,874,926	50,874,926
Balance as at December 31, 2017		1,074,631,523	25,182,581	95,106,190	1,194,920,294
Transaction with shareholder on directly recorded to equity					
Dividend paid	24	-	-	(40,294,152)	(40,294,152)
Appropriated legal reserve	24	-	-	-	-
Total transaction with shareholder on directly recorded to equity		-	-	(40,294,152)	(40,294,152)
Total comprehensive loss for the year					
Loss for the year		-	-	(276,470,903)	(276,470,903)
Total comprehensive loss for the year		-	-	(276,470,903)	(276,470,903)
Balance as at December 31, 2018		1,074,631,523	25,182,581	(221,658,865)	878,155,239

Notes to financial statements are an integral part of these statement.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF CASH FLOWS
For the year ended December 31, 2018

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Cash flows from operating activities				
Profit (loss) before income tax expenses	(347,679,962)	50,023,443	(344,503,952)	56,596,624
Doubtful debt (reverse)	(3,374,186)	(9,724,081)	(3,011,739)	(9,926,500)
Loss on devaluation of goods	12,106,040	5,954,620	10,849,901	10,591,352
Loss on impairment of property, plant and equipment	349,090,450	-	348,619,215	-
Depreciation	106,433,712	104,891,195	106,168,653	103,838,152
Amortization of intangible assets	734,392	1,060,314	734,392	1,060,314
Amortization of prepaid rent under operating lease	203,369	203,369	203,369	203,369
Current service and interest	6,116,317	6,035,964	6,116,317	6,035,964
(Gain) loss from revaluation of short-term investments	34,543	-	34,543	-
(Gain) loss from disposals and amortization assets for rent	(1,317,131)	(7,861,256)	(1,317,131)	(7,861,256)
(Gain) loss from disposals and amortization of property, plant and equipment	(397,331)	1,035	(397,331)	1,035
Unrealized (gain) loss on exchange rate	(712,130)	(1,676,872)	(982,157)	(1,502,146)
Loss from impairment for deferred tax assets	609,266	-	609,266	-
Interest expenses	21,186,382	28,355,024	21,186,382	28,355,024
Interest income	(417,135)	(280,769)	(949,516)	(7,602,299)
Write-off assets to be expenses	5,938,128	438,345	5,938,128	120,547
Transferred liabilities to be revenue	(8,228,001)	(981,297)	(8,522,500)	(981,297)
Profit from operations before changes in operating assets and liabilities	140,326,723	176,439,034	140,775,840	178,928,883
Operating assets (increase)decrease				
Trade and other receivable	(23,907,760)	212,488,163	(21,880,037)	214,008,147
Inventories	75,833,019	(134,295,962)	74,935,517	(138,938,729)
Other current assets	1,178,945	2,736,822	1,231,129	(1,716,779)
Other non-current assets	75,000	(3,590,852)	75,000	(3,273,055)

Notes to financial statements are an integral part of these financial statements.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF CASH FLOWS
For the year ended December 31, 2018

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Operating liabilities increase (decrease)				
Trade and other payables	(24,196,546)	(20,178,234)	(24,553,379)	(23,770,131)
Accrued expenses	(25,404,401)	(5,668,320)	(25,033,201)	(5,996,520)
Advance received for goods and services	(2,373,331)	(1,952,247)	(2,721,331)	(1,604,247)
Employee benefit obligations	(8,581,750)	(3,376,500)	(8,581,750)	(3,376,500)
Other current liabilities	(1,430,780)	1,390,763	(1,271,374)	1,230,913
Other non-current liabilities	(214,233)	5,488,310	(214,233)	5,488,310
Cash received (paid) from operating activities	131,304,886	229,480,977	132,762,181	220,980,292
Paid interest expenses	(21,044,328)	(29,458,669)	(21,044,328)	(29,458,671)
Paid income tax	(9,247,723)	(11,805,835)	(9,247,581)	(12,107,119)
Received income tax	5,719,284	-	5,719,284	-
Net cash received (used) from operating activities	106,732,119	188,216,473	108,189,556	179,414,502
Cash flows from investing activities				
Cash paid for acquired of intangible assets	(37,800)	(635,700)	(37,800)	(635,700)
Increase (decrease) in assets payable	(4,222,672)	(13,746,612)	(4,222,672)	(13,746,612)
Increase (decrease) of restricted bank deposit	(14,000,000)	(3,000,000)	(14,000,000)	(3,000,000)
Cash received from sale assets for rent	2,576,597	12,172,132	2,576,597	12,172,132
Cash received from sale of property, plant and equipment	398,271	2,336	398,271	2,336
Cash paid for acquired of assets for rent	(2,800,200)	(3,142,127)	(2,800,200)	(3,142,127)
Cash paid for acquired of property, plant and equipment	(25,377,020)	(69,821,699)	(24,828,260)	(69,821,699)
Received interest income	398,812	278,436	377,113	7,450,212
Net cash received (used) from investing activities	(43,064,012)	(77,893,234)	(42,536,951)	(70,721,458)

Notes to financial statements are an integral part of these financial statements.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
STATEMENTS OF CASH FLOWS
For the year ended December 31, 2018

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
Cash flows from financing activities				
Increase (decrease) short-term loans from financial institutions	5,898,720	(6,929,803)	5,898,720	(6,929,803)
Cash received from sale and lease back contracts	6,357,831	-	6,357,831	-
Repayment of liabilities under financial lease contracts	(13,674,666)	(17,982,989)	(13,674,666)	(17,982,989)
Proceeds from long-term loans from financial institutions	-	41,059,869	-	41,059,869
Repayment of Long-term loans from financial institutions	(21,972,000)	(106,070,000)	(21,972,000)	(106,070,000)
Dividend paid	(40,294,152)	(33,578,464)	(40,294,152)	(33,578,464)
Net cash received (used) from financing activities	(63,684,267)	(123,501,387)	(63,684,267)	(123,501,387)
Net cash and cash equivalents items (decrease) increase-net	(16,160)	(13,178,148)	1,968,338	(14,808,343)
Cash and cash equivalents items at the beginning of the year	51,949,449	65,127,597	45,522,131	60,330,474
Cash and cash equivalents items at the end of the year	51,933,289	51,949,449	47,490,469	45,522,131

Additional disclosure (Note 28.2)

Notes to financial statements are an integral part of these financial statements.



EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES
NOTES TO FINANCIAL STATEMENT
FOR THE YEAR ENDED DECEMBER 31, 2018

1. GENERAL INFORMATION

EKARAT ENGINEERING PUBLIC COMPANY LIMITED AND SUBSIDIARIES was registered as a public company under the registration number 0107537002711 on December 9, 1994 and was listed companies in The Stock Exchange of Thailand on August 7, 2006. Its head office is situated at 9/291 UM Tower, 28th Floor, Ramkhamhaeng Road, Suanluang, Suanluang, Bangkok. And there are four branches of the factory have the following locations:

Factory 1 : 190/1 Moo 6 Hoklee Canal, Bangpakong River, Tambon Thasa-An, Amphur Bangpakong, Chachoengsao Province.

Factory 2 : 7/242 Moo 6 Tambon Mabyangporn, Amphur Pluakdang, Rayong Province.

Solar thermal power plant :

Factory 1 : 365, 365/1 Moo 3 Tambon Kroksoomboon Amphur Sri-mahapo Prachinburi Province.

Factory 2 : 78 Moo 9 Tambon Lahore Amphur Bang Bua Thong Nonthaburi Province.

The Group's business operations are engaged in the manufacture and distribution transformers and the manufacture and distribution of solar farms.

2. BASIS OF THE FINANCIAL STATEMENTS PREPARATION

The consolidated and the separate financial statements were prepared in accordance with the generally accepted accounting principle under the Accounting Act B.E. 2543, which include the already announced accounting standards, financial reporting standards and their interpretation including accounting guidance issued by the Federation of Accounting Professionals established under the Accounting Professions Act B.E. 2547 which reach the conclusion to be promulgated.

The financial statements issued for Thai reporting purposes are prepared in the Thai language. This English translation of the financial statements has been prepared for the convenience of readers not conversant with the Thai language.

The presentation in the financial statements are presented in accordance with the determination stated in the Notification of the Department of Business Development dated September 28, 2011, issued under the Accounting Act, B.E. 2543.



The financial statements were prepared and presented currency in Thai Baht which the functional currency of the Group and using historical cost basis except those disclosed otherwise in the accounting policies.

The Federation of Accounting Profession (FAP) has notified to apply the following financial reporting standards to the financial statements having an accounting period beginning on or after January 1, 2018

Effective

date

TAS No. 1 Presentation of Financial Statements (revised 2017)	January 1, 2018
TAS No. 2 Inventories (revised 2017)	January 1, 2018
TAS No. 7 Statement of Cash Flows (revised 2017)	January 1, 2018
TAS No. 8 Accounting Policies, Changes in Accounting Estimates and Errors (revised 2017)	January 1, 2018
TAS No. 10 Events after the Reporting Period (revised 2017)	January 1, 2018
TAS No. 11 Construction Contracts (revised 2017)	January 1, 2018
TAS No. 12 Income Taxes (revised 2017)	January 1, 2018
TAS No. 16 Property, Plant and Equipment (revised 2017)	January 1, 2018
TAS No. 17 Leases (revised 2017)	January 1, 2018
TAS No. 18 Revenue (revised 2017)	January 1, 2018
TAS No. 19 Employee Benefits (revised 2017)	January 1, 2018
TAS No. 20 Accounting for Government Grants and Disclosure of Government Assistance (revised 2017)	January 1, 2018
TAS No. 21 The Effects of Changes in Foreign Exchange Rates (revised 2017)	January 1, 2018
TAS No. 23 Borrowing Costs (revised 2017)	January 1, 2018
TAS No. 24 Related Party Disclosures (revised 2017)	January 1, 2018
TAS No. 26 Accounting and Reporting by Retirement Benefit Plans (revised 2017)	January 1, 2018
TAS No. 27 Separate Financial Statements (revised 2017)	January 1, 2018
TAS No. 28 Investments in Associates and Joint Ventures (revised 2017)	January 1, 2018
TAS No. 29 Financial Reporting in Hyperinflationary Economies (revised 2017)	January 1, 2018
TAS No. 33 Earnings per Share (revised 2017)	January 1, 2018
TAS No. 34 Interim Financial Reporting (revised 2017)	January 1, 2018
TAS No. 36 Impairment of Assets (revised 2017)	January 1, 2018
TAS No. 37 Provisions, Contingent Liabilities and Contingent Assets (revised 2017)	January 1, 2018
TAS No. 38 Intangible Assets (revised 2017)	January 1, 2018
TAS No. 40 Investment Property (revised 2017)	January 1, 2018
TAS No. 41 Agriculture (revised 2017)	January 1, 2018



TFRS No. 2 Share-based Payment (revised 2017)	January 1, 2018
TFRS No. 3 Business Combinations (revised 2017)	January 1, 2018
TFRS No. 4 Insurance Contracts (revised 2017)	January 1, 2018
TFRS No. 5 Non-current Assets Held for Sale and Discontinued Operations (revised 2017)	January 1, 2018
TFRS No. 6 Exploration for and Evaluation of Mineral Resources (revised 2017)	January 1, 2018
TFRS No. 8 Operating Segments (revised 2017)	January 1, 2018
TFRS No. 10 Consolidated Financial Statements (revised 2017)	January 1, 2018
TFRS No. 11 Joint Arrangements (revised 2017)	January 1, 2018
TFRS No. 12 Disclosure of Interests in Other Entities (revised 2017)	January 1, 2018
TFRS No. 13 Fair Value Measurement (revised 2017)	January 1, 2018
TSIC No. 10 Government Assistance – No Specific Relation to Operating Activities (revised 2017)	January 1, 2018
TSIC No. 15 Operating Leases - Incentives (revised 2017)	January 1, 2018
TSIC No. 25 Income Taxes - Changes in the Tax Status of an Entity or its Shareholders (revised 2017)	January 1, 2018
TSIC No. 27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease (revised 2017)	January 1, 2018
TSIC No. 29 Service Concession Arrangements : Disclosures (revised 2017)	January 1, 2018
TSIC No. 31 Revenue - Barter Transactions Involving Advertising Services (revised 2017)	January 1, 2018
TSIC No. 32 Intangible Assets - Web Site Costs (revised 2017)	
TFRIC No. 1 Changes in Existing Decommissioning, Restoration and Similar Liabilities (revised 2017)	January 1, 2018
TFRIC No. 4 Determining whether an Arrangement contains a Lease (revised 2017)	January 1, 2018
TFRIC No. 5 Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds (revised 2017)	January 1, 2018
TFRIC No. 7 Applying the Restatement Approach under TAS 29 (revised 2017)	January 1, 2018
Financial Reporting in Hyperinflationary Economies (revised 2017)	
TFRIC No. 10 Interim Financial Reporting and Impairment (revised 2017)	January 1, 2018
TFRIC No. 12 Service Concession Arrangements (revised 2017)	January 1, 2018
TFRIC No. 13 Customer Loyalty Programmers (revised 2017)	January 1, 2018
TFRIC No. 14 TAS 19 (revised 2017) - The Limit on a Defined Benefit Assets, Minimum Funding Requirements and their Interaction (revised 2017)	January 1, 2018
TFRIC No. 15 Agreements for the Construction of Real Estate (revised 2017)	January 1, 2018
TFRIC No. 17 Distributions of Non-cash Assets to Owners (revised 2017)	January 1, 2018



TFRIC No. 18 Transfers of Assets from Customers (revised 2017)	January 1, 2018
TFRIC No. 20 Stripping Costs in the Production Phase of a Surface Mine (revised 2017)	January 1, 2018
TFRIC No. 21 Levies (revised 2017)	January 1, 2018
Guide on Accounting for Insurance Business in Determining Financial Instruments as Financial Instruments Presented with Fair Value through Profit or Loss	January 1, 2018

The Group has adopted such financial reporting standards to the financial statements on the current period. The management assessed that they don't have any significant impact on the financial statements for the current period.

The Federation of Accounting Profession (FAP) has notified to apply the following financial reporting standards to the financial statements having an accounting period beginning on or after January 1, 2019.

Effective	date
TAS No. 1 Presentation of Financial Statements (revised 2018)	January 1, 2019
TAS No. 2 Inventories (revised 2018)	January 1, 2019
TAS No. 7 Statement of Cash Flows (revised 2018)	January 1, 2019
TAS No. 8 Accounting Policies, Changes in Accounting Estimates and Errors (revised 2018)	January 1, 2019
TAS No. 10 Events after the Reporting Period (revised 2018)	January 1, 2019
TAS No. 12 Income Taxes (revised 2018)	January 1, 2019
TAS No. 16 Property, Plant and Equipment (revised 2018)	January 1, 2019
TAS No. 17 Leases (revised 2018)	January 1, 2019
TAS No. 19 Employee Benefits (revised 2018)	January 1, 2019
TAS No. 20 Accounting for Government Grants and Disclosure of Government Assistance (revised 2018)	January 1, 2019
TAS No. 21 The Effects of Changes in Foreign Exchange Rates (revised 2018)	January 1, 2019
TAS No. 23 Borrowing Costs (revised 2018)	January 1, 2019
TAS No. 24 Related Party Disclosures (revised 2018)	January 1, 2019
TAS No. 26 Accounting and Reporting by Retirement Benefit Plans (revised 2018)	January 1, 2019
TAS No. 27 Separate Financial Statements (revised 2018)	January 1, 2019
TAS No. 28 Investments in Associates and Joint Ventures (revised 2018)	January 1, 2019
TAS No. 29 Financial Reporting in Hyperinflationary Economies (revised 2018)	January 1, 2019
TAS No. 33 Earnings per Share (revised 2018)	January 1, 2019
TAS No. 34 Interim Financial Reporting (revised 2018)	January 1, 2019
TAS No. 36 Impairment of Assets (revised 2018)	January 1, 2019
TAS No. 37 Provisions, Contingent Liabilities and Contingent Assets (revised 2018)	January 1, 2019



TAS No. 38 Intangible Assets (revised 2018)	January 1, 2019
TAS No. 40 Investment Property (revised 2018)	January 1, 2019
TAS No. 41 Agriculture (revised 2018)	January 1, 2019
TFRS No. 1 First-time Adoption of International Financial Reporting Standards	January 1, 2019
TFRS No. 2 Share-based Payment (revised 2018)	January 1, 2019
TFRS No. 3 Business Combinations (revised 2018)	January 1, 2019
TFRS No. 4 Insurance Contracts (revised 2018)	January 1, 2019
TFRS No. 5 Non-current Assets Held for Sale and Discontinued Operations (revised 2018)	January 1, 2019
TFRS No. 6 Exploration for and Evaluation of Mineral Resources (revised 2018)	January 1, 2019
TFRS No. 8 Operating Segments (revised 2018)	January 1, 2019
TFRS No. 10 Consolidated Financial Statements (revised 2018)	January 1, 2019
TFRS No. 11 Joint Arrangements (revised 2018)	January 1, 2019
TFRS No. 12 Disclosure of Interests in Other Entities (revised 2018)	January 1, 2019
TFRS No. 13 Fair Value Measurement (revised 2018)	January 1, 2019
TFRS No. 15 Revenue from Contracts with Customers	January 1, 2019
TSIC No. 10 Government Assistance – No Specific Relation to Operating Activities (revised 2018)	January 1, 2019
TSIC No. 15 Operating Leases - Incentives (revised 2018)	January 1, 2019
TSIC No. 25 Income Taxes - Changes in the Tax Status of an Entity or its Shareholders (revised 2018)	January 1, 2019
TSIC No. 27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease (revised 2018)	January 1, 2019
TSIC No. 29 Service Concession Arrangements : Disclosures (revised 2018)	January 1, 2019
TSIC No. 32 Intangible Assets - Web Site Costs (revised 2018)	January 1, 2019
TFRIC No. 1 Changes in Existing Decommissioning, Restoration and Similar Liabilities (revised 2017)	January 1, 2019
TFRIC No. 4 Determining whether an Arrangement contains a Lease (revised 2018)	January 1, 2019
TFRIC No. 5 Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds (revised 2018)	January 1, 2019
TFRIC No. 7 Applying the Restatement Approach under TAS 29 (revised 2017)	January 1, 2019
Financial Reporting in Hyperinflationary Economies (revised 2018)	
TFRIC No. 10 Interim Financial Reporting and Impairment (revised 2018)	January 1, 2019
TFRIC No. 12 Service Concession Arrangements (revised 2018)	January 1, 2019
TFRIC No. 14 TAS 19 (revised 2017) - The Limit on a Defined Benefit Assets, Minimum Funding Requirements and their Interaction (revised 2018)	January 1, 2019



TFRIC No. 17 Distributions of Non-cash Assets to Owners (revised 2018)	January 1, 2019
TFRIC No. 20 Stripping Costs in the Production Phase of a Surface Mine (revised 2018)	January 1, 2019
TFRIC No. 21 Levies (revised 2018)	January 1, 2019

The Federation of Accounting Profession (FAP) has notified to apply the following financial reporting standards to the financial statements having an accounting period beginning on or after January 1, 2020.

Effective

date

TFRS No. 9 Financial Instruments	January 1, 2020
TFRS No. 7 Financial Instruments: Disclosures	January 1, 2020
TAS No. 32 Financial Instruments: Presentation	January 1, 2020
TFRIC No. 16 Hedges of a Net Investment in a Foreign Operation	January 1, 2020
TFRIC No. 19 Extinguishing Financial Liabilities with Equity Instruments	January 1, 2020

The Group do not use financial reporting standards applicable to financial statements in future periods prior to adoption. And management has assessed that there is no impact on the consolidated financial statements in the period of initial adopted.

In preparation of financial statements in conformity with generally accepted accounting principles the management has to make estimates and assumptions that affect the application of policies and reported amounts of assets, liabilities, income and expenses. The estimates and underlying assumptions are resulted from experience and other factors that the management has reasonably assurance under such circumstance. Actual results may differ from these estimates.

The estimates and underlying assumptions so used in preparation of the financial statements are reviewed on regular basis. Revisions to accounting estimates are recognized in the period in which estimates are revised and in any future periods affected. The areas of estimation uncertainty and critical judgement in applying accounting policies that have the most significant effect on the amount recognized in the Group' financial statements include:-

Allowance for doubtful debt

In determining an allowance for doubtful accounts, the management needs to make judgement and estimates based upon, among other things, past collection history, aging profile of outstanding debts and the prevailing economic condition.



Allowance for slow moving and obsolete inventories and allowance for the cost of goods exceeding net realizable value

The management is required to estimate allowance for slow moving and obsolete inventories whenever the inventories are expected to depreciate or become obsolete by considering on the basis of their current physical condition status and popularity trend among consumers.

Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs to complete and to make the sale.

Depreciation of plant and equipment and investment properties

In determining depreciation of plant and equipment and investment properties, the management is required to make estimates of the useful lives and residual values of the Group's plant and equipment and investment properties. The management will review the estimate useful lives and residual values when there are any changes from the estimates made during the prior periods, derecognition of the dilapidated asset or cease of usage from disposal or disused.

Allowance for impairment of property, plant and equipment

In determining of the recoverable amount of assets which is calculated from the cost of usage. The management requires discretion in choosing the assumptions that will be used to determine the future cash inflows and cash outflows from continuous utilization throughout the useful life of the assets and net cash flows from the disposal of such assets at the end of their useful life including determining the discount rate before income tax that reflects on the current market situation assessment of the time value of money and risk that is unique to the asset being considered which the rate is the required rate of return that the investor has chosen an investment that generates cash flows that have the amount, timing and risk equivalent to the investment that the company expects to receive from that asset.

Amortization of intangible asset

Intangible asset are amortised by a straight-line method over estimate useful life and will also be considered about decline in value if there is an indication. In recording and measuring the initial value as well as considering decline in value of intangible asset, it needs the managements judgement in estimating the net realizable value in the future.



Deferred tax assets

Deferred tax assets are recognized for deductible temporary differences and unused tax losses to the extent that it is probable that taxable profit will be available against which the temporary differences and losses can be utilized. Significant management judgement is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and level of estimate future taxable profits.

Estimate on employee benefit obligations

The present value of the estimate on employee retirement benefit is calculated using various assumptions, including discount rate, which is used to determine the expenses related to the employee retirement benefits. Any change in these assumptions would affect the estimate of employee retirement benefits. The Group determines the appropriate discount rate annually and applied to measure the present value of estimated future cash flows for the settlement of the employee benefit obligations, using the said determined appropriate discount rate. The discount rate is the yield of government bonds that have maturity date approximating the terms of the Group's obligations.

Lease agreement

In determining whether a lease is to be classified as an operating lease or finance lease, the management is required to use judgement regarding whether significant risk and rewards of ownership of the leased asset have been transferred, taking into consideration terms and conditions of the arrangement.

Fair value

In determining the fair value of financial instruments which are recognised in the statement of financial position that are not actively traded and for which quoted prices are not readily available in active market, the management has to exercise judgement, using a variety of valuation techniques and models. The input to these models is taken from observable markets, and includes consideration of credit risk, liquidity, correlation and long-term volatility of financial instruments. Changes in assumptions about these factors may affect the fair value recognised in the statement of financial position and disclosures of fair value hierarchy.

Other estimates are disclosed under related caption in these notes to financial statements.



3. Basis of the consolidated financial statements preparation

3.1 The consolidated financial statements consist of the financial statements of the Company and subsidiaries (together called “Group”).

3.2 A subsidiary companies are enterprise under the control of the Group. This control occurs when the Group have a controlling power directly or indirectly in giving direction of financial policy and operation of that company in order to derive benefits from that subsidiary companies. Also the financial statements of the subsidiary companies will be combined into the consolidated financial statements of the Group commencing from the date of control until the cessation date of such control.

3.3 The consolidated financial statements are prepared by using the same accounting policies for similar accounting items or events.

3.4 The accounting period of the subsidiary companies ends on the same date as that of EKARAT ENGINEERING PUBLIC COMPANY LIMITED.

3.5 The consolidated financial statements confines the accounts of the Company and its subsidiary companies after eliminating inter-company transaction items. The balances between the Company and subsidiary companies, significant intra-group transactions, investments in subsidiary companies and share capital of subsidiary companies have already been eliminated from the consolidated financial statements. The Company holds directly shares at the percentage of :

Company name	Nature of business	Incorporated in	Percentage of shareholding	
			2018	2017
Ekarat Solar Co., Ltd.	Distributor of solar cell	Thailand	99.99%	99.99%
Ekarat Energy Co., Ltd.	Operate on solar electric power	Thailand	99.99%	99.99%



4. Accounting policies

Significant accounting policies used in the preparation of the financial statements can be summarized as follows :-

4.1 Cash and cash equivalents items include cash, bank deposits in the forms of savings and current accounts, and fixed accounts not exceeding three months and not subject to withdrawal restrictions.

4.2 Trade and other receivable are stated at their invoice value less allowance for doubtful accounts. The allowance for doubtful accounts is assessed primarily on analysis of payment histories and future expectations of customer payments. Bad debts are written off when incurred.

4.3 Inventories are recorded at cost adjusted by allowance for inventories that are slow-moving or obsolete (if any) or net realizable value, whichever is the lower. Cost is computed as follows:

- Raw materials are value at cost by using the First-in, First-out method.
- Finished goods and work in process are valued at cost by using the specific identification method.

Net realizable value is the estimated selling price in the ordinary course of business less the expenses necessary to make the sale.

4.4 Investments

4.4.1 Short-term investments as securities for trading in marketable equity instruments are shown at fair value. The difference between carrying amount and fair value are shown as unrealized profit and loss in the statement of income for the year.

4.4.2 In the separate financial statements, the investments in subsidiary companies are recorded by the cost method less accumulated allowance for impairment and recorded the recognition of the change of the investments value in the statement of comprehensive income when the investments have been disposed or impaired.

4.4.3 General investments are non-marketable equity instruments, shown at cost net off by allowance for accumulated impairment (if any) and change in value of general investments is recognized in the statements of income when they are sold or impaired.



4.5 Investment properties have been recorded the initial value at cost. Afterward, the Group have been recorded the investment properties as lands at cost less allowance for accumulated impairment (if any).

The Group are recognized the difference between the net amount received from disposal and the carrying amount of asset in profit or loss of the period that investment properties have been taken off from the account.

4.6 Assets for rent are inventories for rent or lend to customer have been recorded the initial value at cost. Afterward, the Group recorded assets for rent at cost less accumulated depreciation and allowance for accumulated impairment (if any). Depreciations are calculated by the straight-line method over the useful life for 5 years.

4.7 Property, plant and equipments recorded the initial value at cost. Afterward, the Group have been recorded the property, plant and equipment at cost less accumulated depreciation and allowance for accumulated impairment (if any) and depreciation is calculated by the straight-line method over the following estimated useful lives :-

- Office buildings	40	years
- Buildings and construction	20-25	years
- Buildings improvement	10-15	years
- Machinery, tools and equipment	5-18	years
- Furniture and office equipment	3-5	years
- Vehicles and other fixed assets	5	years

The Group did not carry depreciation for land, land improvements and assets under construction. and in case of impairment of assets, the Group will calculate the depreciation of the assets by using the carrying amount after deducting allowance for loss on impairment (if any) over the remaining useful life of the asset.

Property, plant and equipment shall be eliminated from accounts on disposal or no future economic benefits are expected from its usage or disposal. Profit or losses arising on disposal is recognized on the statement of comprehensive income when the said asset is eliminated from accounts.



4.8 Intangible assets are shown at cost less by accumulated, amortized expense and allowance for impairment (if any) of that asset. The Group makes amortization of intangible asset with certain useful life systematically throughout the useful life of such asset and will review the period and method for amortization of intangible assets with certainty in useful life at least at the end of every year. Amortized expense will be recognized in the statement of comprehensive income based on period expected the economic benefits of the assets.

4.9 Impairment of assets, the Group assesses at each statement of financial position date whether there is an indication that an asset may be impaired. If any such indication exists, the Group makes an estimate of the asset's recoverable amount. When the carrying amount of the asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. Impairment losses are recognized in statements of comprehensive income.

The recoverable amount of assets is the greater of fair value less costs to sell the asset and value in use.

An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

4.10 Trade and other payables are stated at cost.

4.11 Interest bearing liabilities are shown at cost and state the expense related to the incurrence of debt as the expense for the year.

4.12 Employee benefits

Short-term employee benefit

The Group recognizes salaries, wages, bonuses, contributions to social security fund and provident fund as expense when incurred.



Post-employment benefits

The Group has obligations in respect of the severance payments it must make to employees upon retirement under labour law. The defined benefit plan is defined as the post-employment benefit plan.

The obligation under the defined benefit plans is determined by a professionally qualified independent actuary based on actuarial techniques, using the projected unit credit method on a regular basis. The projected unit credit method is the allocation of benefits for the current period and previous period that must be paid to employee who provide services to the Group to various periods according to the calculation formula of the benefits of the project and will allocate benefits by straight-line method throughout the service life of the employee until retirement.

Current service cost, past service costs and gains and losses on settlement including gains and losses from reducing project size and project benefit payment when reducing project size will be recognized in the income statement in the period which the transaction occurs.

Actuarial gains and losses arising from post-employment benefits are recognised immediately in other comprehensive income.

The defined benefit obligations are measured at the present value of estimated future cash flows using a discount rate that is similar to the interest rate on government bond.

4.13 Estimation of liabilities: The Group will record liability estimates whenever there is certainty that liability or obligation will occur at present legally or by estimation from the result connected with the past event. Such obligation is expected to cause damage to loss of useful or economic resources in order to make payment toward obligation and the amount to be paid is respectfully estimated. If payment made toward liability estimated is recovered fully or partly with certainty, the Group will recorded the recovered payment as asset separately but the amount so recorded must be more than the amount of related liability estimate and the related expense with the liability estimate will be shown in the statement of comprehensive income in the net amount after recovered expense already recognized.



4.14 The recording of long-term lease contracts of the Group (finance lease and hire purchase contract) is both an asset and a liability made in the statement of financial position at the same amount equivalent to fair value of leased asset as at the commencing date of the agreement or the present value of the minimum amount payable under the agreement whichever is the lower. The discount rate to be used in calculating such present value is the interest rate specified in the lease agreement. The interest rate that paid by the Group at the date of commencement of the contract by reference with the interest rate of loans that have terms and the guarantee is similar to the lease contract. The directly related initial cost is included in the cost of the asset and the paid lease fee will be appropriated partly as financial expense and other to reduce the principle. The financial expense will be apportioned to various periods throughout the term of agreement so that the interest rate compared to the remaining amount of debt at each period is constant. Depreciation policy for lease assets conforms to depreciable assets owned by the Group.

Sale and lease back

In case of sale and lease back result in financial leasing contract, the return from selling asset at the value higher than the book value will be recognized as deferred income in the statement of financial position and successively amortized into the statement of comprehensive income in the duration of the leasing contract.

In case of sale and lease back result in operating lease, the Group will recognize gains or losses in the statement of comprehensive income immediately if sale price is equivalent to the fair value. If the sale price is lower than the fair value, the Group will recognize losses in the statement of comprehensive income immediately unless the Group is covered loss by rent payment in the future in lower than market price. In this case, the Group will record the loss from sale as differed item in the statement of financial position and successively amortize into the statement of comprehensive income according to the ratio of the rent paying each time in the period that the Group expect to use the asset. If the sale price is higher than the fair value, the Group will recognize the gain as deferred income in the statement of financial position and successively amortize into the statement of comprehensive income according to the period expected to use the asset.



4.15 Incomes recognition, revenue recognized excludes value added taxes and is arrived at after deduction of trade discounts.

4.15.1 Revenue from sale of goods is recognized in the statements of comprehensive income when the significant risks and rewards of ownership have been transferred to the buyer. No revenue is recognized if there is continuing management involvement with the goods or there are significant uncertainties regarding recovery of the economic benefit due from the sale of goods or render of services or the amount of the revenue and cost incurred could not be reasonably measured or the probable return of goods.

4.15.2 Revenue from service and maintenance recognized upon service completion and in accordance with the service contract.

4.15.3 Revenue from installation of solar electric generating system are recognized by the percentage of completion method. The stage of completion is measured by referencing to the completion of a physical proportion of the contract work performed as assessed by the project engineers.

The recognised revenues which have not yet been due as per contracts have been shown under the caption of “Unbilled receivables” in the statements of financial position.

4.15.4 The Group recognizes revenue from sales of electricity current on delivery of goods or on customer acceptance. Sale are recognized based on units of sale delivered at the applicable tariff rates.

4.15.5 Subsidy from government the Group has received the subsidy from government as increment from purchasing price of electricity energy in accordance with the supporting project for the minor electricity generator who used cycle energy in the form of solar energy at the price of Baht 8 per kilowatt per hour in compliance with the announcement of the Provincial Power Authority and the resolution of the Board of Energy Policy dated March 9, 2009. The subsidy period is 10 years from the electricity trading date. The Company starts to trade electricity since April 2010. Such subsidy was recognized as income from disposal of electricity current and recognized income when the electricity current is distributed to the Provincial Power Authority.



4.15.6 Rental income is recognize based on the term of the lease.

4.15.7 Interest income is recognised on an accrual basis based on the effective interest rate.

4.15.8 Other incomes are recognized by accrual basis.

4.16 Expenses recognition

4.16.1 The Group recognizes costs from installation of solar electric generating system by the percentage of completion method. The stage of completion is measured by referencing to the completion of a physical proportion of the contract work performed as assessed by the project engineers. The estimated total cost is determined by the Group's project engineers or its responsible person, which is subject to change. The related actual costs are taken up as incurred on an accrual basis. Expected loss on each project is provided and charged as expense in the period when the estimated total costs of the project exceed its total contracted income.

The actual cost of services incurred but not yet recognised as cost of services in profit or loss has been regarded as "Construction in progress" under current assets in the statement of financial position, while contracts of which calculated costs of construction exceed incurred costs of construction are shown as "Unbilled cost" under current liabilities in the statement of financial position.

Construction in progress include the cost of raw materials, direct labour and other expenses incurred for each project. Such construction in progress and project management in progress are valued at the lower of cost or net realisable value.

4.16.2 Payments made under operating leases are recognized in the statement of comprehensive income on a straight line method over the term of the lease. Contingent rentals are charged to the statement of comprehensive income for the accounting period in which they are incurred.



4.16.3 Financial cost consists of interest expense or other expenses in similar nature charged and includes interest default to the statement of comprehensive income in the year such expenses are incurred except in case that they are partly recorded as cost of assets due to the effect of long period of time used to acquire construction or produce such assets prior to direct utilization or for sale. Interest which is part of installment amount under finance lease contract is charged to the statement of comprehensive income by effective rate method.

4.16.4 Other expense is recognized on accrual basis.

4.17 Foreign currency transactions are translated into Baht at the rates ruling on the occurrence dates. Monetary assets and liabilities denominated in foreign currency outstanding at ended period are translated into Thai Baht at the foreign exchange rate ruling at that date. Exchange gains or losses from translations are included as incomes or expenses in the income statement for the year.

Non-monetary assets and liabilities, which are derived from accounting items denominated in foreign currencies, are recorded by initial cost basis converted into Baht using exchange rates at the occur rent date.

4.18 Income tax comprises current tax and deferred tax. Income tax is recognized in profit or loss except to the extent that related to items recognized in other comprehensive income or recognized directly in equity which will recognize in other comprehensive income or recognized directly in equity as same as that items.

Current tax

The Group recognize the current tax at the amount expected to be paid to the taxation authorities, are calculated based on taxable profits in accordance with Revenue Code.

Deferred tax

The Group recognizes the deferred tax on temporary differences between the tax bases of assets and liabilities and their carrying amounts at the end of each reporting period, using the tax rates enacted at the end of the reporting period.

At each reporting date, the Group reviews and reduce the carrying amount of deferred tax assets to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized.



4.19 The related parties and related companies with the Company and its subsidiaries meant individuals or enterprises which have the controlling power over the Company and its subsidiaries or are controlled by the Company and its subsidiaries either directly or indirectly, or under the same control with the Company and its subsidiaries. Furthermore, the related parties or related companies also meant the associated companies and the parties whose holding the shares with voting rights, either directly or indirectly, and have significant influence to the Company, important managers, directors or the employees of the Company and its subsidiaries who have the power to plan and control the operations of the Company and its subsidiaries including the family members close to the said persons which could persuade or power to persuade to act in compliance with the said persons and business that the said persons have control power or significant influence, either directly or indirectly.

4.20 Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between buyer and seller (market participants) at the measurement date. The Group apply a quoted market price in an active market to measure their assets and liabilities that are required to be measured at fair value by relevant financial reporting standards. Except in case of no active market of an identical asset or liability or when a quoted market price is not available, the Group measure fair value using valuation technique that are appropriate in the circumstances and maximize the use of relevant observable inputs related to assets and liabilities that are required to be measured at fair value.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy into three levels based on categories of input to be used in fair value measurement as follows:

Level 1 -Use of quoted market prices in an observable active market for such assets or liabilities.

Level 2 -Use of other observable inputs for such assets or liabilities, whether directly or indirectly.

Level 3- Use of unobservable inputs such as estimates of future cash flows.

At the end of each reporting period, the Group determine whether transfers have occurred between levels within the fair value hierarchy for assets and liabilities held at the end of the reporting period that are measured at fair value on a recurring basis.



4.21 Basic earnings (loss) per share is calculated by dividing profit (loss) for the year of the Parent Company (excludes other comprehensive income) by the weighted average number of already issued and fully paid shares during the accounting year.

4.22 Section 116 of the Public Companies Act B.E. 2535 requires that a company shall allocate not less than 5% of its annual net profit, less any accumulated losses brought forward (if any), to a reserve account, until this account reaches an amount not less than 10% of the registered authorized capital.

4.23 The sectoral business operation is disclosed under the separate business sectors of the Group. The business segment is the business sector that source products or provide services which have different risks and return from the risks and return of the products or services provide by other business sectors.

4.24 Financial assets and liabilities carried on the statement of financial position include Bank deposit, trade receivables and payables, other receivables and payables, loan receivables and payables, receivable and payable under financial lease contracts. The important accounting policies and measurement of these items are disclosed in the respective accounting policies for related items.



5. Business transactions with related parties and person

The Group incurred business transactions with related entities which have the same group of shareholders. The significant remaining balances and inter-company transactions between the Group with related entities and persons are as follows:-

5.1 Inter-assets and liabilities are as follows:-

Type of items	(Unit : Baht)			
	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
• Trade receivable				
Ekarat Solar Co., Ltd.	-	-	-	6,272,621
• Other receivable				
Ekarat Solar Co., Ltd.	-	-	-	14,014
Ekarat Energy Co., Ltd.	-	-	12,000	8,000
Total	-	-	12,000	22,014
• Trade payables				
Ekarat Solar Co., Ltd.	-	-	227,625	903,329
• Other payables				
Ekarat Solar Co., Ltd.	-	-	-	64,000
• Service receivable deposit				
Ekarat Solar Co., Ltd.	-	-	-	348,000
Short-term loan due from and accrued interest income				
Ekarat Solar Co., Ltd.				
• Short-term loan due from				
Beginning balance	-	-	10,496,986	189,378,250
Forgiveness the debt	-	-	-	(178,881,264)
Ending balance	-	-	10,496,986	10,496,986
Less Allowance for doubtful debts	-	-	(10,496,986)	(10,496,986)
Net	-	-	-	-
• Accrued interest income				
Accrued interest income	-	-	703,585	152,494
Less Allowance for doubtful debts	-	-	(703,585)	(152,494)
Net	-	-	-	-
Total	-	-	-	-



For the year ended December 31, 2018 and 2017, there was movement in the allowance for accrued interest income as follows: -

	(Unit : Baht)	
	Separate financial statements	
	2018	2017
As at January 1,	152,494	38,207,174
Plus Increase during in year	551,091	7,343,679
Less Forgiveness the debt	-	(45,398,359)
As at December 31,	703,585	152,494

On 21 September 2017, The Board of Directors of the Company resolved that to forgiveness the debt from restructuring, on December 2013 total amounted to Baht 218.00 million, consisting of principal of Baht 178.88 million and accrued interest receivable of Baht 39.12 million to Ekarat Solar Co., Ltd. (subsidiary company, 99.99% shares held by the Company). The management believes that the subsidiary company has no ability to repay the debt to the Company. There was no impact on the profit for the three-month and nine-month periods ended 30 September 2017 because of the Company had recorded allowance for doubtful accounts of loans and accrued interest receivables in total amount already.

5.2 Inter-revenues and expenses are as follows: -

Type of items	(Unit : Baht)			
	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,			
	2018	2017	2018	2017
• Revenue from sales of goods				
Ekarat Solar Co., Ltd.	-	-	1,160,000	131,510
• Revenue from service of installing a solar panel				
Ekarat Solar Co., Ltd.	-	-	-	13,413,564
• Interest income				
Ekarat Solar Co., Ltd.	-	-	551,092	7,343,679
• Other income				
Ekarat Solar Co., Ltd.	-	-	13,744	14,014
• Purchase of goods				
Ekarat Solar Co., Ltd.	-	-	315,684	8,243,107



(Unit : Baht)

Type of items	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,			
	2018	2017	2018	2017
• Doubtful debt				
Ekarat Solar Co., Ltd.	-	-	551,091	7,343,679
• Rental expenses				
Ekarat Energy Co., Ltd.	-	-	24,000	24,000
• Consultant fee				
SKP Consulting and Engineering Co.,Ltd.	8,971,963	8,971,963	8,971,963	8,971,963
• Guarantee fee				
KV Asset Company Limited	-	1,517,780	-	1,517,780
Khun Theeraya Kanokpruk	-	1,517,780	-	1,517,780
Total	-	3,035,560	-	3,035,560
• Directors and key management compensation				
Short-term benefits	16,134,000	18,414,500	16,134,000	18,414,500
Post-employment benefits	230,638	220,973	230,638	220,973
Directors’ remuneration	5,479,000	5,129,000	5,479,000	5,129,000
Total	21,843,638	23,764,473	21,843,638	23,764,473

Policy of setting prices

	Policy
Price of sale-purchase goods	Mutually agreed price based on market
Rental and services income	Mutually agreed price based on contract
Interest income	Based on the agreed price according to the interest rates of domestic commercial banks.
Consultant fee	Mutually agreed price based on contract
Guarantee fee	2% per annum (Period 2 year) of credit facilities from financial institution

As at December 31, 2018 and 2017, the company entered into business development consultant contract in the project with a related company by the contract dated 1 January 2017, the contract is for 2 years from January 1, 2017 ending

December 31, 2018 Service fee is Baht 0.80 million per month (included VAT).

5.3 Relationship of related companies

Consisted of: -

Name of companies	Nationality	Nature of relationship	Related by
Ekarat Solar Co., Ltd.	Thai	Subsidiary	Direct shares holding of 99.99%
Ekarat Energy Co., Ltd.	Thai	Subsidiary	Direct shares holding of 99.99%
KV Asset Company Limited	Thai	Related company	Mutually director and shareholder
Chula Engineering Company Limited	Thai	Related company	Joint shares holding
SKP Consulting and Engineering Co.,Ltd.	Thai	Related company	Is the company that is close person of the directors being the shareholder and director
Khun Theeraya Kanokpruk	Thai	Major shareholder	Direct shares holding more than 5%

6. Short-term investments

Consisted of :-

(Unit : Baht)

	Consolidated and Separate financial statements	
	As at December 31,	
	2018	2017
Investment in equity instrument on marketable securities	1,128,315	1,128,315
Loss from change in fair value	(1,093,773)	(1,059,230)
Net	34,542	69,085

As at December 31, 2018 and 2017, the fair value of equity instrument on marketable securities, arranged in Tier 1, calculation by the last offer price.



7. Trade and other receivables

Consisted of:-

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
Trade receivable				
• Related entities	-	-	-	6,272,621
• Other entities	256,122,304	222,092,730	250,445,243	211,890,656
Unbilled receivables	14,022,179	12,044,421	14,022,179	12,044,421
Post date cheque	15,950,592	16,377,331	15,950,592	16,377,331
Total	286,095,075	250,514,482	280,418,014	246,585,029
Less Allowance for doubtful debts	(17,769,110)	(21,601,967)	(12,092,049)	(15,654,880)
Total trade receivables	268,325,965	228,912,515	268,325,965	230,930,149
Other receivable				
• Other receivable				
Related entities	-	-	12,000	22,014
Other entities	4,975,847	4,991,615	4,296,085	4,311,929
• Deposit and advance payment for goods	759,273	11,779,614	759,273	11,779,614
• Prepaid expenses	5,102,784	6,091,795	5,102,784	6,091,795
• Others	2,575,340	2,568,879	2,407,696	2,398,245
Total	13,413,244	25,431,903	12,577,838	24,603,597
Less Allowance for doubtful debts	(4,477,551)	(4,018,880)	(4,018,880)	(4,018,880)
Total other receivable	8,935,693	21,413,023	8,558,958	20,584,717
Total trade and other receivable	277,261,658	250,325,538	276,884,923	251,514,866



Aging analyses for trade receivable were as follows:-

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
Trade receivable-related entities				
• Not yet due	-	-	-	6,245,101
• Over due				
Less than 3 months	-	-	-	-
From 3 to 6 months	-	-	-	27,520
From 6 to 12 months	-	-	-	-
More than 12 months	-	-	-	-
Total	-	-	-	6,272,621
Trade receivables-other entities				
• Not yet due	155,749,826	113,149,527	155,749,826	112,900,752
• Over due				
Less than 3 months	75,653,579	75,480,573	75,653,579	71,474,361
From 3 to 6 months	4,064,644	6,720,992	4,064,644	6,720,992
From 6 to 12 months	3,259,902	3,661,476	3,259,902	3,661,476
More than 12 months	17,394,353	23,080,162	11,717,292	17,133,075
Total	256,122,304	222,092,730	250,445,243	211,890,656
Unbilled receivables				
• Not yet due	12,850,236	10,843,943	12,850,236	10,843,943
• Over due				
Less than 3 months	503,527	656,502	503,527	656,502
From 3 to 6 months	87,603	99,113	87,603	99,113
From 6 to 12 months	234,544	23,523	234,544	23,523
More than 12 months	346,269	421,340	346,269	421,340
Total	14,022,179	12,044,421	14,022,179	12,044,421
Notes receivable				
• Not yet due	15,950,592	16,377,331	15,950,592	16,377,331
Total	286,095,075	250,514,482	280,418,014	246,585,029
Less Allowance for doubtful debts	(17,769,110)	(21,601,967)	(12,092,049)	(15,654,880)
Total trade receivables	268,325,965	228,912,515	268,325,965	230,930,149



The normal credit terms for the customer of the Group are approximately 30 days to 90 days and post date cheque are average age 30 days to 90 days.

For the year ended December 31, 2018 and 2017, there was movement in the allowance for doubtful debts of trade receivable and accrued income as follows: -

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
As at January 1,	21,601,967	31,644,205	15,654,880	25,872,784
Plus Increase during the year	1,340,513	797,714	1,340,513	622,048
Less Bad debt recovery	(3,973,435)	(10,373,472)	(3,703,409)	(10,373,472)
Bad debt	(1,199,935)	(466,480)	(1,199,935)	(466,480)
As at December 31,	17,769,110	21,601,967	12,092,049	15,654,880

As at December 31, 2018, the Company taken trade receivable amount of Baht 14.41 million to discount to bank in the notes No.19.

8. Inventories

Consisted of:-

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
Raw materials	218,355,067	264,802,587	213,090,986	258,041,481
Raw materials-in transit	7,908,844	39,876,601	7,908,844	39,876,600
Work-in-process	83,012,560	90,573,283	83,012,560	90,573,283
Finished goods	174,680,065	183,316,589	134,227,325	143,467,744
Supplies	8,795,968	8,923,477	7,706,406	7,829,547
Total	492,752,504	587,492,537	445,946,121	539,788,655
Less Allowance for decline in value of goods	(68,938,846)	(71,200,278)	(22,132,467)	(25,650,043)
Total	423,813,658	516,292,259	423,813,654	514,138,612

For the year ended December 31, 2018 and 2017, the Group have movement of allowance for decline in value of goods (cost of goods exceeding net realizable value and allowance for deteriorate and obsolete goods) as follow:-

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
As at January 1,	71,200,278	65,245,658	25,650,043	15,058,691
Plus Loss from cost of goods exceeding net realizable	16,314,019	7,519,625	14,160,372	10,749,378
Less Write-off the deteriorate goods	(18,575,451)	(1,565,005)	(17,677,948)	(158,026)
As at December 31,	68,938,846	71,200,278	22,132,467	25,650,043

9. Investments in subsidiary companies

As at December 31, 2018 and 2017, investments in subsidiaries consisted of: -

	Separate financial statements									
	Paid-up share capital		Percentage of Shareholding		Cost method		Allowance of impairment		Net value	
	(Million Baht)		(%)		(Baht)		(Baht)		(Baht)	
	2561	2560	2561	2560	2561	2560	2561	2560	2561	2560
Ekarat Solar Co., Ltd.	1,000	1,000	99.99	99.99	999,999,930	999,999,930	(999,999,930)	(999,999,930)	-	-
Ekarat Energy Co., Ltd.	2.5	2.5	99.99	99.99	2,499,925	2,499,925	-	-	2,499,925	2,499,925
Total					1,002,499,855	1,002,499,855	(999,999,930)	(999,999,930)	2,499,925	2,499,925

For the year ended December 31, 2018 and 2017, the subsidiary has no dividend payment due to loss of operating results.



10. General investments

As at December 31, 2018 and 2017, consisting general of investments consisted of: -

	Consolidated and Separate financial statements									
	Paid-up share capital		Percentage of Shareholding		Cost method		Allowance of impairment		Net value	
	(Million Baht)		(%)		(Baht)		(Baht)		(Baht)	
	2561	2560	2561	2560	2561	2560	2561	2560	2561	2560
G.E.C. Engineering Company Limited	230	230	1.19	1.19	2,726,400	2,726,400	(2,726,400)	(2,726,400)	-	-
Saha Karn Engineering Company Limited	403	403	0.04	0.04	158,849	158,849	(158,849)	(158,849)	-	-
Total					2,885,249	2,885,249	(2,885,249)	(2,885,249)	-	-

For the year ended December 31, 2018 and 2017, the above companies do not pay dividend due to operating losses.

11. Investment properties

Consisted of:-

	(Unit : Baht)	
	Consolidated and Separate financial statements	
	As at December 31,	
	2018	2017
Cost	12,973,886	12,973,886
Less Allowance for impairment	(11,342,131)	(11,342,131)
Net	1,631,755	1,631,755



As at December 31, 2018 and 2017, land at cost of Baht 12.42 million for the both year had areas 136 rais 1 ngan and 67 square registered ownership with a related company. (Total cost is Baht 17.92 million).

The level 3 fair value of investment property have calculated by “Market Approach” by comparable properties that are similar and traded that similar or different from the property appraised by sufficient number. The valuation must consider in various factors that affect the value of the property as assessed in comparison with market information to compare such as location, city plan, land plot, size of living space, building quality etc. and then analyse the property valuation by using various techniques such as Sale Adjustment - Grid Method, Weighted Quality Score (WQS) and so on.

12. Assets for rent

For the year ended December 31, 2018 and 2017, the movement of assets for rent are as follows:-

	(Unit : Baht)			
	Consolidated and Separate financial statements			
	Repurchased transformer	Transformer reserved at center	Transformer for borrow-rent	Total
Cost :				
As at January 1, 2017	27,772,216	2,273,379	7,295,296	37,340,891
Acquisition	3,103,995	-	38,132	3,142,127
Transfer in	23,547,570	867,062	16,193,630	40,608,262
Transfer out	(20,437,037)	(927,473)	(12,502,140)	(33,866,650)
Disposal	(9,712,019)	-	(608,031)	(10,320,050)
As at December 31, 2017	24,274,725	2,212,968	10,416,887	36,904,580
Acquisition	2,800,200	-	-	2,800,200
Transfer in	17,571,596	641,143	14,729,648	32,942,387
Transfer out	(14,085,567)	(1,027,885)	(15,856,548)	(30,970,000)
Disposal	(5,419,000)	-	-	(5,419,000)
As at December 31, 2018	25,141,954	1,826,226	9,289,987	36,258,167



(Unit : Baht)

	Consolidated and Separate financial statements			
	Repurchased transformer	Transformer reserved at center	Transformer for borrow-rent	Total
Accumulated depreciation :				
As at January 1, 2017	(25,286,677)	(2,233,153)	(6,652,151)	(34,171,981)
Depreciation for the year	(759,605)	(10,442)	(261,434)	(1,031,481)
Transfer in	(15,438,039)	(834,073)	(15,194,782)	(31,466,894)
Transfer out	18,365,463	887,266	11,968,519	31,221,248
Disposal	5,832,502	-	176,672	6,009,174
As at December 31, 2017	(17,286,356)	(2,190,402)	(9,963,176)	(29,439,934)
Depreciation for the year	(719,307)	(4,504)	(271,028)	(994,839)
Transfer in	(14,340,902)	(621,570)	(12,746,314)	(27,708,786)
Transfer out	11,890,403	1,006,811	14,641,110	27,538,324
Disposal	4,159,534	-	-	4,159,534
As at December 31, 2018	(16,296,628)	(1,809,665)	(8,339,408)	(26,445,701)
Accumulated allowance for impairment :				
As at January 1, 2017	-	-	-	-
(Increase)decrease	-	-	-	-
As at December 31, 2017	-	-	-	-
(Increase)decrease	(5,893,007)	-	-	(5,893,007)
As at December 31, 2018	(5,893,007)	-	-	(5,893,007)
Net book value :				
As at December 31, 2017	6,988,369	22,566	453,711	7,464,646
As at December 31, 2018	2,952,319	16,561	950,579	3,919,459

Depreciation in the statements of comprehensive income for the years

End of December 31, 2017	1,031,481
End of December 31, 2018	994,839



13. Property, plant and equipment

For the year ended December 31, 2018 and 2017, the movement of property, plant and equipment are as follows:-

(Unit : Baht)

	Consolidated financial statements						
	Land and land improvement	Building and construction	Machinery, tools and equipment	Furniture and office equipment	Vehicles	Work under construction	Total
Cost :							
As at January 1, 2017	77,204,296	896,887,688	1,496,821,582	71,789,489	67,095,718	1,361,105	2,611,159,878
Acquisition	26,830,000	5,205,300	12,164,276	3,660,444	3,426,038	26,981,358	78,267,416
Transfer in	-	18,168,500	1,461,399	-	-	8,777,805	28,407,704
Transfer out	-	-	-	-	-	(19,629,900)	(19,629,900)
Disposal	-	-	-	(545,564)	-	(29,390)	(574,954)
As at December 31, 2017	104,034,296	920,261,488	1,510,447,257	74,904,369	70,521,756	17,460,978	2,697,630,144
Acquisition	-	2,348,760	12,204,984	2,868,170	14,788,252	9,869,819	42,079,985
Transfer in	-	13,473,571	14,211,636	106,004	-	5,295,638	33,086,849
Transfer out	-	-	-	-	-	(26,727,878)	(26,727,878)
Disposal	-	-	-	(1,601,857)	(7,455,405)	-	(9,057,262)
As at December 31, 2018	104,034,296	936,083,819	1,536,863,877	76,276,686	77,854,603	5,898,557	2,737,011,838
Accumulated depreciation :							
As at January 1, 2017	-	(380,135,869)	(737,456,283)	(59,209,183)	(44,002,930)	-	(1,220,804,265)
Depreciation for the year	-	(27,022,393)	(62,829,800)	(4,281,928)	(9,725,570)	-	(103,859,691)
Disposal	-	-	-	227,025	-	-	227,025
As at December 31, 2017	-	(407,158,262)	(800,286,083)	(63,264,086)	(53,728,500)	-	(1,324,436,931)
Depreciation for the year	-	(28,896,145)	(62,826,371)	(4,681,958)	(9,034,398)	-	(105,438,872)
Disposal	-	-	-	1,600,921	7,455,401	-	9,056,322
As at December 31, 2018	-	(436,054,407)	(863,112,454)	(66,345,123)	(55,307,497)	-	(1,420,819,481)



(Unit : Baht)

	Consolidated financial statements						
	Land and land improvement	Building and construction	Machinery, tools and equipment	Furniture and office equipment	Vehicles	Work under construction	Total
Accumulated allowance for impairment :							
As at January 1, 2017	(2,117,685)	(113,797,989)	(143,787,902)	(44,941)	-	-	(259,748,517)
(Increase)decrease	-	-	-	-	-	-	-
As at December 31, 2017	(2,117,685)	(113,797,989)	(143,787,902)	(44,941)	-	-	(259,748,517)
(Increase)decrease	2,117,685	(792,761)	(350,401,889)	(13,485)	-	-	(349,090,450)
As at December 31, 2018	-	(114,590,750)	(494,189,791)	(58,426)	-	-	(608,838,967)
Net book value :							
As at December 31, 2017	101,916,611	399,305,237	566,373,272	11,595,342	16,793,256	17,460,978	1,113,444,696
As at December 31, 2018	104,034,296	385,438,662	179,561,632	9,873,137	22,547,106	5,898,557	707,353,390
Depreciation in the statements of comprehensive income for the years							
End of December 31, 2017							103,859,691
End of December 31, 2018							105,438,872

(Unit : Baht)

	Separate financial statements						
	Land and land improvement	Building and construction	Machinery, tools and equipment	Furniture and office equipment	Vehicles	Work under construction	Total
Cost :							
As at January 1, 2017	85,245,491	729,136,765	1,036,928,777	62,779,108	67,431,718	1,529,142	1,983,051,001
Acquisition	26,830,000	5,205,300	12,164,277	3,660,468	3,426,038	26,809,811	78,095,894
Transfer in	-	18,168,499	1,461,399	-	-	8,949,351	28,579,249
Transfer out	-	-	-	-	-	(19,629,900)	(19,629,900)
Disposal	-	-	-	(545,564)	-	(29,390)	(574,954)
As at December 31, 2017	112,075,491	752,510,564	1,050,554,453	65,894,012	70,857,756	17,629,014	2,069,521,290
Acquisition	-	1,800,000	12,204,984	2,868,170	14,788,252	9,869,819	41,531,225
Transfer in	-	13,473,571	14,211,636	106,004	-	5,295,638	33,086,849
Transfer out	-	-	-	-	-	(26,727,878)	(26,727,878)
Disposal	-	-	-	(1,601,857)	(7,455,405)	-	(9,057,262)
As at December 31, 2018	112,075,491	767,784,135	1,076,971,073	67,266,329	78,190,603	6,066,593	2,108,354,224



(Unit : Baht)

	Separate financial statements						
	Land and land improvement	Building and construction	Machinery, tools and equipment	Furniture and office equipment	Vehicles	Work under construction	Total
Accumulated depreciation :							
As at January 1, 2017	-	(284,620,086)	(438,105,144)	(49,447,887)	(44,303,678)	-	(816,476,795)
Depreciation for the year	-	(27,723,919)	(60,647,812)	(4,642,170)	(9,792,770)	-	(102,806,671)
Disposal	-	-	-	227,025	-	-	227,025
As at December 31, 2017	-	(312,344,005)	(498,752,956)	(53,863,032)	(54,096,448)	-	(919,056,441)
Depreciation for the year	-	(28,631,086)	(62,826,371)	(4,681,958)	(9,034,398)	-	(105,173,813)
Disposal	-	-	-	1,600,921	7,455,401	-	9,056,322
As at December 31, 2018	-	(340,975,091)	(561,579,327)	(56,944,069)	(55,675,445)	-	(1,015,173,932)
Accumulated allowance for impairment :							
As at January 1, 2017	(2,117,685)	(35,558,112)	(4,301,895)	(38,319)	-	-	(42,016,011)
(Increase)decrease	-	-	-	-	-	-	-
As at December 31, 2017	(2,117,685)	(35,558,112)	(4,301,895)	(38,319)	-	-	(42,016,011)
(Increase)decrease	2,117,685	(321,526)	(350,401,889)	(13,485)	-	-	(348,619,215)
As at December 31, 2018	-	(35,879,638)	(354,703,784)	(51,804)	-	-	(390,635,226)
Net book value :							
As at December 31, 2017	109,957,806	404,608,447	547,499,602	11,992,661	16,761,308	17,629,014	1,108,448,838
As at December 31, 2018	112,075,491	390,929,406	160,687,962	10,270,456	22,515,158	6,066,593	702,545,066
Depreciation in the statements of comprehensive income for the years							
End of December 31, 2017							102,806,671
End of December 31, 2018							105,173,813



As at December 31, 2018, the management of the Group of company has assessed to the net realizable value of assets in the production and distribution section of solar cells panels by independent appraisers which approved from the Securities and Exchange Commission of Thailand (SEC). The results showed that the expected return value of the assets (calculated by cost method) is lower than the book value of assets according to the consolidated and separate financial statements in the amount of 349.79 million baht, therefore the management considered to record the allowance for impairment of assets by recognizing in to the statement of comprehensive income and the statement of separate income for the year in whole amount.

As at December 31, 2018 and 2017, according to the consolidated financial statements, asset amount of Baht 148.75 million and Baht 155.41 million respectively, to be asset under the project Solar Farm. The Company has right to operate in the project electricity current selling from a government agency for the period of 25 years. Such project is located at various land owners.

As at December 31, 2018 and 2017, according to the consolidated financial statement, the assets of at cost amount of Baht 526.67 million and Baht 495.75 million respectively, were fully depreciated but most of them are still in use.

As at December 31, 2018 and 2017, according to the consolidated financial statements, the Group have mortgaged land with construction in carrying amount Baht 251.57 million and Baht 267.46 million respectively, (including building on the land in the future) and certain machines in carrying amount Baht 264.71 million and Baht 390.77 million respectively, were pledged as collaterals against credit facilities and obligation made to commercial banks as mentioned in the notes 18 and notes 21.

As at December 31, 2018 and 2017, according to the consolidated financial statements, machines and vehicles in carrying amount at Baht 30.99 million and Baht 37.24 million respectively, are under the financial lease contracts according with as mentioned in the notes 22.

As at December 31, 2018 and 2017 according to the consolidated financial statements, the Group of company has assets that are not used in operations which has the book value of Baht 138.21 million and Baht 532.94 million respectively.



14. Intangible assets

For the year end December 31, 2018 and 2017 all intangible assets which the movement are as follows:-

	(Unit : Baht)		
	Consolidated financial statements		
	Computer software	Electricity current selling royalty	Total
Cost :			
As at January 1, 2017	27,018,580	9,025,000	36,043,580
Acquisition	729,699	-	729,699
As at December 31, 2017	27,748,279	9,025,000	36,773,279
Acquisition	37,800	-	37,800
Transfer in	-	425,272	425,272
As at December 31, 2018	27,786,079	9,450,272	37,236,351
Accumulated depreciation :			
As at January 1, 2017	(23,566,093)	(2,959)	(23,569,052)
Depreciation for the year	(699,314)	(361,000)	(1,060,314)
As at December 31, 2017	(24,265,407)	(363,959)	(24,629,366)
Depreciation for the year	(371,828)	(362,564)	(734,392)
As at December 31, 2018	(24,637,235)	(726,523)	(25,363,758)
Accumulated allowance for impairment :			
As at January 1, 2017	(2,427,094)	-	(2,427,094)
(Increase)decrease	-	-	-
As at December 31, 2017	(2,427,094)	-	(2,427,094)
(Increase)decrease	-	-	-
As at December 31, 2018	(2,427,094)	-	(2,427,094)
Net book value :			
As at December 31, 2017	1,055,778	8,661,041	9,716,819
As at December 31, 2018	721,750	8,723,749	9,445,499



(Unit : Baht)

	Consolidated financial statements		
	Computer software	Electricity current selling royalty	Total
Depreciation in the statements of comprehensive income for the years			
Ended of December 31, 2017			1,060,314
Ended of December 31, 2018			734,392

(Unit : Baht)

	Separate financial statements		
	Computer software	Electricity current selling royalty	Total
Cost :			
As at January 1, 2017	19,831,465	9,025,000	28,856,465
Acquisition	729,700	-	729,700
As at December 31, 2017	20,561,165	9,025,000	29,586,165
Acquisition	37,800	-	37,800
Transfer in	-	425,272	425,272
As at December 31, 2018	20,598,965	9,450,272	30,049,237
Accumulated depreciation :			
As at January 1, 2017	(18,806,073)	(2,959)	(18,809,032)
Depreciation for the year	(699,314)	(361,000)	(1,060,314)
As at December 31, 2017	(19,505,387)	(363,959)	(19,869,346)
Depreciation for the year	(371,828)	(362,564)	(734,392)
As at December 31, 2018	(19,877,215)	(726,523)	(20,603,738)
Net book value :			
As at December 31, 2017	1,055,778	8,661,041	9,716,819
As at December 31, 2018	721,750	8,723,749	9,445,499

Depreciation in the statements of comprehensive income for the years

Ended of December 31, 2017			1,060,314
Ended of December 31, 2018			734,392



As at December 31, 2018 and 2017 intangible assets valued at Baht 8.72 million and Baht 8.66 million respectively, is the right of electricity sales to project owners. This is in accordance with the compensation payment to “contract under Ground-based solar farm” as discussed in notes 33.3.

As at December 31, 2018 and 2017, according to the consolidated financial statement, the assets of at cost amount of Baht 19.24 million and Baht 6.41 million respectively, were fully amortized but most of them are still in use.

15. Restricted bank deposits

As at December 31, 2018 and 2017 the restricted bank deposits are used to guarantee credit and obligation with commercial bank as mentioned in the note 18 and note 33.1.

16. Prepaid expenses under operation lease

Consisted of:-

	(Unit : Baht)	
	Consolidated and Separate financial statements	
	2018	2017
As at January 1,	4,880,307	5,075,857
Transfer in	-	7,819
Amortization	(203,369)	(203,369)
As at December 31,	4,676,938	4,880,307

On August 22, 2016, the Company entered into agreement as supporter in the project Solar Farm operating with a government agency which is entitled for electricity selling and as project owner. The Company operated the project on land of the project owner for a period of 25 years, commenced on January 1, 2017 and ended December 31, 2041 and has to pay usage expenses total amount of Baht 26.09 million for five periods of five years each, at the various usage fee as indicated in the agreement as mentioned in note 33.3.

The minimum amounts to be paid in the future for land lease under abovementioned operating lease are as follows :



(Unit : Baht)

Consolidated and Separate financial statements		
As at December 31,		
	2018	2017
Within 1 year	883,610	883,610
Over 1 - 5 years	4,520,005	4,486,020
Over 5 years	16,618,665	17,536,260
Total	22,022,280	22,905,890

17. Deferred tax assets

Deferred tax assets and liabilities as at December 31, 2018 and 2017, are as follows:-

(Unit : Baht)

Consolidated and Separate financial statements		
As at December 31,		
	2018	2017
Deferred tax assets	95,969,814	28,680,832
Deferred tax liabilities	(1,914,299)	(2,049,100)
Net	94,055,515	26,631,732

Movement of deferred tax assets and liabilities incurred during the year ended December 31, 2018 and 2017, are as follows:-

(Unit : Baht)

	Consolidated and Separate financial statements			
	As at January 1, 2018	Recognized of comprehens income (No. 26)	Loss from impairment for the year	As at December 31, 2018
Deferred tax assets				
Allowance for in value of inventories	5,130,009	(703,516)	-	4,426,493
Allowance for impairment of fixed assets	7,090,633	69,041,197	-	76,131,830
Employee benefit obligations	14,372,661	(493,089)	-	13,879,572
Loss carry forward	2,087,529	-	(609,266)	1,478,263
Estimate demolish	-	53,656	-	53,656
Total	28,680,832	67,898,248	(609,266)	95,969,814
Deferred tax liabilities				
Depreciation from life expectancy change	(2,370,774)	134,313	-	(2,236,461)
Assets and liabilities under financial lease contracts	321,674	488	-	322,162
Total	(2,049,100)	134,801	-	(1,914,299)
Net	26,631,732	68,033,049	(609,266)	94,055,515



(Unit : Baht)

	Consolidated and Separate financial statements			
	As at January 1, 2017	Recognized of comprehens income (No. 26)	Recognized of other comprehens income (No. 26)	As at December 31, 2017
Deferred tax assets				
Allowance for in value of inventories	3,011,738	2,118,271	-	5,130,009
Allowance for impairment of fixed assets	7,708,960	(618,327)	-	7,090,633
Employee benefit obligations	13,840,769	531,892	-	14,372,661
Loss carry forward	10,476,508	(8,388,979)	-	2,087,529
Total	35,037,975	(6,357,143)	-	28,680,832
Deferred tax liabilities				
Depreciation from life expectancy change	(2,505,087)	134,313	-	(2,370,774)
Assets and liabilities under financial lease contracts	(179,458)	501,132	-	321,674
Total	(2,684,545)	635,445	-	(2,049,100)
Net	32,353,430	(5,721,698)	-	26,631,732

18. Short-term loans from financial institutions

Consisted of:-

(Unit : Baht)

	Consolidated and Separate financial statements			
	As at December 31,			
	2018	Interest rate	2017	Interest rate
Promissory notes	139,460,000	MLR-0.5%	70,000,000	MLR-0.5%
Trust receipts payable	61,399,325	MLR-0.5%	134,249,767	MLR-0.5%
Factoring payable	14,412,165	MOR-0.75%	5,691,972	MOR-0.75%
Total	215,271,490		209,941,739	

As at December 31, 2018 and 2017, the Company has overdrafts line and short-term loans from a local bank for credit amount of Baht 1,070.64 million and Baht 800.00 million respectively, and guaranteed by transferring the right in receivable under factoring agreement in note 7, bank deposits in note 15 and land with its construction and machinery in note 13.

19. Trade and other payables

Consisted of:-

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
Trade payables				
Related entities	-	-	227,625	903,329
Other entities	221,570,716	255,725,870	221,570,716	255,725,870
Total trade payable	221,570,716	255,725,870	221,798,341	256,629,199
Other payable				
Related entities	-	-	-	64,000
Other entities	10,750,710	9,011,272	10,750,710	9,009,266
• Assets payable	7,189,712	4,222,672	7,189,712	4,222,672
• Others	1,013,763	1,466,193	1,013,763	1,085,568
Total other payable	18,954,185	14,700,137	18,954,185	14,381,506
Total trade and other payable	240,524,901	270,426,007	240,752,526	271,010,705

20. Advance received for goods and services

Consisted of:

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
Advance received from services and maintenance contract	27,430,782	33,568,203	27,430,782	33,916,203
Advance received from solar cell installation contract	708,351	44,784	708,351	44,784
Total	28,139,133	33,612,987	28,139,133	33,960,987



As at December 31, 2018 and 2017, the advance received from solar cell installation contract is as follows:

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
Value of contract	109,196,666	27,990,000	109,196,666	66,042,400
Revenue recognised on percentage of completion basis	107,022,450	27,945,216	107,022,450	41,358,780
Less Value of progress billings (Installment)	(107,730,801)	(27,990,000)	(107,730,801)	(41,403,564)
Advance received under contract	(708,351)	(44,784)	(708,351)	(44,784)

The additional data of construction in progress are as follow :-

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	As at December 31,		As at December 31,	
	2018	2017	2018	2017
Cost of construction and gain are recognized (less loss are recognized) until present	107,022,450	27,945,216	107,022,450	41,358,780
Less Value of progress billings (Instalment)	(107,730,801)	(27,990,000)	(107,730,801)	(41,403,564)
Total amount that customers have the right to claim from the company.	(708,351)	(44,784)	(708,351)	(44,784)



21. Long-term loans from financial institutions

Consisted of:-

(Unit : Baht)

	Consolidated and Separate financial statements	
	As at December 31,	
	2018	2017
Long-term loans from financial institutions	111,718,000	133,690,000
Less Deferred front end fee	(1,172,910)	(1,235,352)
Total	110,545,090	132,454,648
Less Current portion of long-term loans	(21,655,163)	(21,729,479)
Net	88,889,927	110,725,169

The movements in the long-term loans from financial institutions for the year ended December 31, 2018 and 2017 are as follows:-

(Unit : Baht)

	Consolidated and Separate financial statements	
	2018	2017
As at January 1,	133,690,000	198,700,131
Plus : Borrowings during the year	-	41,059,869
Less : Repayment during the year	(21,972,000)	(106,070,000)
As at December 31,	111,718,000	133,690,000
Less : Current portion	(21,972,000)	(21,972,000)
Long-term loan from financial institutions	89,746,000	111,718,000



As at December 31, 2018 and 2017, long-term loans from financial institutions are as follows :

Credit Line (Million Baht)		Outstanding balance (Million Baht)		Interest rate (% p.a.)		Repayment of principal and interest rate
2018	2017	2018	2017	2018	2017	
120.00	120.00	92.97	108.69	MLR -1.50%	MLR -1.50%	<ul style="list-style-type: none"> • Loan for the purpose of investing in a government authorized ground-based solar farm project. The repayment is a total of 84 instalments at the rate of Baht 1.31 million per instalment and must be repay by May 2027. • Interest is paid monthly from the date of first withdrawal.
25.00	25.00	18.75	25.00	MLR -1.50%	MLR -1.50%	<ul style="list-style-type: none"> • Loan for the purpose reimbursement of land. The repayment is a total of 48 instalments at the rate of Baht 0.521 million per instalment and must be repay by Dec 2021. • Interest is paid monthly from the date of first withdrawal.
145.00	145.00	111.72	133.69			

Collaterals

As at December 31, 2018 and 2017, the Company has lands and certain machines as mentioned in the notes 13 as the collateral.

The Company has taken an insurance policy for machines and equipments for the highest amount acceptable to insurance company. The benefit derivable from such policy is to be given to the lending financial institution. Moreover, The Company must perform to compliance with the material loan contract example, to maintain the debt to equity ratio and debt repayment capacity ratio not more than the fixed on contracts until the completion of the repayment institution.

As at December 31, 2018 and 2017, the consolidated financial statements have shown the debt to equity ratio in 0.83 : 1 and 0.68 : 1 respectively, and the separate financial statements have shown the debt to equity ratio in 0.83 : 1 and 0.68 : 1 respectively.



22. Liabilities under financial lease contracts

Consisted of:-

(Unit : Baht)

	Consolidated and Separate financial statements	
	As at December 31,	
	2018	2017
Liabilities under financial lease contracts		
• Within 1 year	10,928,618	13,060,043
• Over 1 year but not over 5 years	13,187,401	9,159,155
Total	24,116,019	22,219,198
Less Future interest of expenses	(1,222,210)	(1,114,889)
Total present value of liabilities under financial lease	22,893,809	21,104,309
Less Current portion	(10,211,032)	(12,267,098)
Net	12,682,777	8,837,211

As at December 31, 2018 and 2017, the Company has entered into 46 and 42 financial lease respectively, with the several financial institutions. The term of payment at Baht 0.76 million and Baht 0.70 million respectively. And Company has entered into 1 and 2 sale and lease back machine contracts with a financial institution the term of payment at Baht 0.19 million and Baht 0.60 million and the contract duration of 3 years respectively. The vehicle's ownership still be the lessor until the Company decides to buy it.

23. Employee benefit obligations

For the year ended December 31, 2018 and 2017, changes in the present value of the employee benefit obligation as follows : -

(Unit : Baht)

	Consolidated and Separate financial statement	
	2018	2017
As at January 1,	71,863,307	69,203,843
Current service cost and interest expense	6,116,317	6,035,964
(Gain) on the settlement of a defined benefit plan	(8,581,750)	(3,376,500)
As at December 31,	69,397,874	71,863,307



(Revenue) expenses are recognized in the statement of comprehensive income for the year ended December 31, 2018 and 2017, as follows :-

Statements of income

(Unit : Baht)

	Consolidated and Separate financial statements	
	For the year ended December 31,	
	2018	2017
Cost of sales	4,007,496	3,999,793
Administrative expenses	2,108,821	2,036,171
Total	6,116,317	6,035,964

Principal actuarial assumptions as at reporting date as at December 31, 2018 and 2017 as follows :

Discount Rate	2.67% per annum
Employee turnover	Age-related scale and kind of employee (full time and part time)
Salary increment Rate	7.39% per annum

Changes in the actuarial assumption will affect to the employee benefit obligation for the year ended December 31, 2018 and 2017 as follows :

	Consolidated and Separate financial statements			
	December 31, 2018		December 31, 2017	
	Increase	Decrease	Increase	Decrease
Discount rate (0.50% movement)	(3,476,219)	3,744,811	(3,507,478)	3,783,067
Future salary increases rate (0.50% movement)	4,191,578	(3,915,559)	3,870,901	(3,623,460)
Employee turnover (1.00% movement)	(8,680,699)	10,129,968	(8,056,187)	9,354,405

However, if the Group has to comply with the requirements under the draft Labor Protection Act No. 7, the management forecast that the law will affect the financial statements of the Group in the accounting period for the year 2019. The Group will be recognition of additional liabilities from the original amount of Baht 7.08 million.



24. Dividend paid and legal reserve

		(Unit : Baht)			
	Approved by	Dividend paid	Dividend paid per share	Date of Dividend payment	Appropriated legal reserve
Payment announced from the retained earnings of the year 2017	The Annual General Meeting of shareholders for the year 2018 held on Apr 30, 2018	40,294,152	0.030	May 28, 2018	2,543,746
Payment announced from the retained earnings of the year 2016	The Annual General Meeting of shareholders for the year 2017 held on Apr 27, 2017	33,578,464	0.025	May 25, 2017	-

25. Natures of expenses

For the year ended December 31, 2018 and 2017 consist of :

	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,			
	2018	2017	2018	2017
Changes in finished goods and work in progress (Increase)decrease	18,460,432	(86,475,309)	16,767,079	(88,769,458)
Raw material and supplies used	745,578,235	911,864,051	744,893,471	888,432,086
Loss(reversal)from decline in value of inventories	12,106,044	7,361,602	10,849,901	10,591,352
Loss on impairment of fixed assets	348,623,699	136,813	348,623,699	136,813
Employee expense	251,143,257	280,782,940	251,143,257	280,782,940
Directors’ remuneration	17,384,638	19,935,473	17,384,638	19,935,473
Depreciation and amortization	106,903,045	105,951,509	106,903,045	104,898,466
Consulting in management	14,891,963	15,751,963	14,891,963	15,751,963
Commission and consulting in management	43,307,133	53,920,444	43,307,133	53,548,444



26. Income tax

Income tax is recognized in profit or loss:

(Unit : Baht)

	Consolidated and Separate financial statements	
	For the year ended December 31,	
	2018	2017
Income tax expense for the current period	-	-
Deferred tax (revenues) expenses relating to temporary differences on initial recognition and reversal	(68,033,049)	5,721,698
Income tax (revenues) expenses	(68,033,049)	5,721,698

Affect the relationship between the income tax expense (revenue) with accounting profit.

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,			
	2018	2017	2018	2017
Profit (loss) before income tax expenses	(347,679,962)	50,023,443	(344,503,952)	56,596,624
Income tax was calculated tax rates at 20%	(69,535,992)	10,004,688	(68,900,790)	11,319,325
Effective income tax revenues and expenses to be added				
back (deducted) in computing taxable profit				
• Taxable (profit) loss of subsidiaries	107,558	128,510	-	-
• Revenues granted from BOI	(3,753,570)	(5,004,351)	(3,753,570)	(5,004,351)
• (Revenues) that are granted income tax exemption or expenses not treated as expenses	3,462,202	2,849,262	2,709,030	2,849,261
• (Revenues) expenses under the Revenues Code	1,686,753	(2,256,411)	1,912,281	(3,442,537)
Income tax (revenue) expenses	(68,033,049)	5,721,698	(68,033,049)	5,721,698

The Group have applied the reduced tax rate of 20% in measuring deferred tax assets as at December 31, 2018 and 2017, in accordance with the clarification issued by the FAP in 2012.



27. Basic earnings (loss) per share

Earnings (loss) per share is calculated by dividing profit (loss) for the year attributable to ordinary shareholders of the Parent Company (excluding other comprehensive income) by weighted average number of issued and paid-up ordinary shares during the year.

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,			
	2018	2017	2018	2017
Profit (loss) for the year (Baht)	(279,646,913)	44,301,745	(276,470,903)	50,874,926
Number of weighted average shares (shares)	1,343,289,404	1,343,289,404	1,343,289,404	1,343,289,404
Basic earnings (loss) per share (Baht)	(0.208)	0.033	(0.206)	0.038

28. Additional cash flow information

28.1 Cash and cash equivalents items as following details :-

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,			
	2018	2017	2018	2017
Cash	730,000	725,000	730,000	725,000
Savings deposit	39,214,609	29,256,498	34,789,241	22,848,421
Current deposit	9,176,369	6,651,105	9,158,917	6,631,864
Cheque due for deposit	2,812,311	15,316,846	2,812,311	15,316,846
Total	51,933,289	51,949,449	47,490,469	45,522,131



28.2 Non- cash transactions

(Unit : Baht)

	Consolidated financial statements		Separate financial statements	
	For the year ended December 31,			
	2018	2017	2018	2017
• Transfer of other receivable to property, plant and equipment	-	649,000	-	649,000
• Transfer of other receivables to intangible assets	-	94,000	-	94,000
• Transfer of other receivables to prepaid rental	-	7,819	-	7,819
• Transfer of non-current assets to property, plant and equipment	3,334,868	-	3,334,868	-
• Transfer of property, plant and equipment to intangible assets	425,272	-	425,272	-
• Transfer of inventories to property, plant and equipment	3,449,376	8,494,349	3,449,376	8,949,349
• Transfer of inventories to asset for rent	1,801,925	6,495,966	1,801,925	6,495,966
• Acquisition assets under financial lease contracts	16,702,965	3,426,037	16,702,965	3,426,037

29. Operating segments

Operating segments information in the consolidated financial statements for the years ended December 31, 2018 and 2017, the details are as follows:-

(Unit : Million Baht)

	Electricity current		Services		Goods production and distribution		Consolidated financial statements	
	2561	2560	2561	2560	2561	2560	2561	2560
Revenues from sales and services	45.31	47.42	304.91	236.86	1,114.08	1,400.17	1,464.30	1,684.45
Gross profit	22.16	26.04	88.83	79.67	159.65	224.43	270.64	330.14
Selling and administrative expenses							(275.01)	(291.39)
Profit (loss) from operation							(4.37)	38.75
Other income							27.91	47.82
Loss on impairment of assets					(349.09)	-	(349.09)	-
Finance costs							(22.13)	(36.55)
Income tax (expenses) income							68.03	(5.72)
Profit (loss) for the year							(279.65)	44.30



For the year ended December 31, 2017, the Group have revenues from operation from major customer, as 36.61% of the revenues from operation

Details of the sectorial business assets in the consolidated financial statements as at December 31, 2018 and 2017, are as follows:-

	Goods production and distribution							
	Electricity current		Sell transformers		Sell solar cell		Total Consolidated financial statements	
	2018	2017	2018	2017	2018	2017	2018	2017
Fixed assets	252.96	267.43	321.96	301.20	132.43	544.81	707.35	1,113.44
Other assets							908.90	898.46
Total assets							1,616.25	2,011.90

30. Financial Instruments

Financial risk management policy

The Group hold risk to change of interest rate and from nonperformance of contractual obligations by contract parties. The Group will consider to using appropriate financial instruments when it considers necessary to manage such risks. However, the Group do not have any policy to hold or issue any financial instruments for speculation or for trading.

Risk on credit provision

The Group hold risk on credit provision relating to trade receivable but the Group have set the policy to undertake business activities only with reliable traders with good financial status in order to reduce the opportunity to incur financial loss. In addition, the Group do not have high concentration of credit risk since it has various over continent customer and a large customer base. The maximum exposure to credit risk is limited to the carrying amounts of receivables as stated in the statements of financial position.

Risk liquidity

The Group monitor its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's operations and to mitigate the effects of fluctuations in cash flows.

Risk on interest rates

The Group have significant financial instruments its interest risk, which include loan from financial institutions, therefore, subject to risk in relation to floating interest rates which may be fluctuating in future thus possibly affecting the operating results and cash flows. As at December 31, 2018 and 2017, the significant financial instruments have the following details:- (in respect to interest rates, they are already shown in related notes to financial statements).

(Unit: Million Baht)

	Consolidated financial statements					
	As at December 31, 2018					
	Fixed interest rate			Floating Interest rate	Non Interest bearing	Total
	Within 1 years	more than 1 year to 5 years	more than 5 years			
Financial assets						
Cash and cash equivalents items	-	-	-	39	13	52
Trade and other receivables	-	-	-	-	273	273
Restricted bank deposits	-	-	-	19	-	19
Total	-	-	-	58	286	344
Financial liabilities						
Short-term loans from financial institutions	-	-	-	215	-	215
Trade and other payables	-	-	-	-	239	239
Liabilities under financial lease contracts	10	13	-	-	-	23
Long-term loans from financial institutions	-	-	-	111	-	111
Total	10	13	-	326	239	588



(Unit: Million Baht)

Consolidated financial statements						
As at December 31, 2017						
	Fixed interest rate			Floating Interest rate	Non Interest bearing	Total
	Within 1 years	more than 1 year to 5 years	more than 5 years			
Financial assets						
Cash and cash equivalents items	-	-	-	29	23	52
Trade and other receivables	-	-	-	-	234	234
Restricted bank deposits	-	-	-	5	-	5
Total	-	-	-	34	257	291
Financial liabilities						
Short-term loans from financial institutions	-	-	-	210	-	210
Trade and other payables	-	-	-	-	268	268
Liabilities under financial lease contracts	12	9	-	-	-	21
Long-term loans from financial institutions	-	-	-	132	-	132
Total	12	9	-	342	268	631

Risk on exchange rates

The Group' exposure to foreign currency risk arises mainly from trading transactions that are denominated in foreign currencies.

As at December 31, 2018 and 2017, the Group entered into forward exchange contracts to not entered into risk hedge are summarized as follows :



	Consolidated financial statements			
	Trade receivable		Trust receipts/Trade payable	
	2018	2017	2018	2017
• US Dollar	378,270	121,050	2,006,620	5,442,991
• Euro	141,975	141,975	432,684	506,428
• Krona	-	-	544,400	811,000
• CH Franc	-	-	1,893	-
• SGD Dollar	92,000	-	51,750	-
• Ringgit	315,950	-	-	-

	Separate financial statements			
	Trade receivable		Trust receipts/Trade payable	
	2018	2017	2018	2017
• US Dollar	376,270	119,050	2,006,620	5,442,991
• Euro	-	-	432,684	506,428
• Krona	-	-	544,400	811,000
• CH Franc	-	-	1,893	-
• SGD Dollar	92,000	-	51,750	-
• Ringgit	315,950	-	-	-

Fair values

The financial assets and liabilities possess book values which are comparable to market prices as these financial instruments will be due in the short time and bears interest rate comparable to market situation. As a result these financial assets and liabilities have reflected their fair values.

31. Fair value measurement

Information on assets and liabilities of the Group measured the fair value in the statement of financial position as at December 31, 2018 and 2017, are as follows:

(Unit: Million Baht)

Asset/Liability	Fair Value		Fair value hierarchy	The inputs used in the fair value measurement
	2018	2017		
Investment trading security	0.03	0.07	Level 1	The quoted market price at the close of trading on the date of statement of financial position
Investment property	12.42	12.42	Level 3	Compare the market price with similar assets and adjust with the techniques of the analysts.

For the year ended December 31, 2018 and 2017, there is no the transfer of any amount between level 1 and level 2 of the fair value hierarchy.

32. Provident fund

The Group and their employees have jointly established a provident fund in accordance with the Provident Fund Act B.E. 2530. The Group and their employees contributed to the fund monthly at the rates depending on the working life of the employees. A local financial institution is managing the provident fund and will be paid to the employees upon termination in accordance with the fund rules. For the years ended December 31, 2018 and 2017, in the consolidated financial statements, the Group contributions amounted to approximately Baht 5.84 million and Baht 5.76 million respectively.



33. Obligations and contingent liabilities

33.1 Apart from liabilities reflected in the financial statements, The Group still had other obligations as follows:-

(Unit : Thousand Baht)

Consolidated financial statements						
For the year ended December 31,						
	2018			2017		
	Credit facilities	Utilized	Available	Credit facilities	Utilized	Available
Letters of guarantee		166,538			224,752	
Promissory note	870,644	139,460	483,056	600,000	70,000	74,558
Letter of credit, trust receipt and packing credit		81,590			230,690	
Bank overdraft		-			-	
Local factoring	200,000	-	200,000	200,000	5,692	194,308
Long-term loans	145,000	145,000	-	545,000	545,000	

The obligations and contingent liabilities are secured by bank deposit as mentioned in the notes 15, land with construction and certain machines as mentioned in the notes 13.

33.2 As at December 31, 2018 and 2017, the Company has commitment on hire of contractor, assets rental and other service agreements with the amount of Baht 20.05 million and Baht 26.09 million respectively.

33.3 On at 22 August 2016, the Company entered into a contract to support the ground-based solar farm electricity generation project installation for government and agricultural cooperatives, 2015, a 25 years project period, and the obligation to pay for such projects until the end of the project to the project owner which contain with land cost, electricity sale rights, minimum income guarantee payment to project owner and other relevant expenses. The Company has already paid some of the land usage fees as described and electricity sale rights in the notes 16. The total amount payable as at December 31, 2018 was Baht 36.32 million. The Company has to supply electricity in to the commercial system on December 29, 2016.



34. Investment promotion privileges

As at December 31, 2018 and 2017, the Company is granted certain right and privilege under the Investment Promotion Act B.E. 2520 by the Board of Investments as below :

34.1 The Company is granted the certain right and privilege as a promoted industry from the Board of Investment for electricity generating from solar cell type 7.1 the services business of utilities and basic services No.1105(1)/2010 dated February 5, 2010, which effective on December 14, 2009 and No. 1297(1)/2013 dated March 7, 2013, which dated February 5, 2010, which effective on December 14, 2009 and No. 1297(1)/2013 dated March 7, 2013, which

34.2 The Company is granted the certain right and privilege as a promoted industry from the Board of Investment for electricity generating from solar cell type 7.1.1.2 the services business of utilities and basic services No. 60-0018-1-00-1-0 dated January 11, 2017, which effective on November 7, 2016. The Company is granted right and privilege of taxable are as follows:

- Exemption of import duty on machinery as approved by the Board of Investment
- Exemption of payment of corporate income tax on net profit derived from promoted activity for the period of 8 years from the date of income earnings. In the case where a loss has been incurred during the period of receiving exemption of corporate income tax. The promoted Company is granted permission to deduct such annual loss from net profits accrued after the expiration of the period of exemption of corporate income tax for a period of not more than 5 years from the expiry of such period.
- Exemption on dividends derived from the promoted activity granted an exemption of corporate income tax shall be exempted for computation of taxable income throughout the period of the promoted receives the exemption of corporate income tax.
- Fifty percent reduction of the normal corporate income tax rate on the profits from the promoted activity for a period of 5 years after the expiry of the corporate income tax exemption period.
- Double deduction from taxable income of transportation, electricity and water costs for the period of 10 years after the expiry of the exemption period.
- Deduction from investment at 25 percent of the project's infrastructure installation or construction cost. This deduction is additional to normal depreciation.



34.3 The Company is granted the certain right and privilege as a promoted industry from the Board of investment promotion of the production of transformers and electricity generating from solar cell type 7.1.1.2 the services business of utilities and basic services No. 60-0018-1-00-1-0 dated January 11, 2017, which effective on November 7, 2016. The Company is granted right and privilege of taxable are as follows:

- The permission to allow the alien who have a skilled worker or expert with the spouses and dependents person of both types come into the Kingdom of Thailand.
- Permission to exempt import duty for machinery as approved by the Board.
- Exemption of payment of corporate income tax on net profit derived from the promoted business, not exceeding 50 percent of the investment value, to improve production efficiency, excluding land and working capital, with a period of 3 years. From the date of income after receiving the promotion card.
- Exemption on dividends derived from the promoted activity granted an exemption of corporate income tax shall be exempted for computation of taxable income throughout the period of the promoted receives the exemption of corporate income tax.
- Exemption for raw materials and materials needed for production from abroad for export for a period of 1 year.
- Permission is granted to exempt import duties for imported products to be returned for a period of 1 year from the date of first import.



The Company has income and expenses for the year ended December 31, 2018 and 2017, from the promoted activity granted as follows :

(Unit : Baht)

Separate financial statements			
For the year ended December 31, 2018			
	Promoted	Non-promoted	Total
Revenue from sales and services	38,851,518	1,425,359,573	1,464,211,091
Other income	-	28,385,904	28,385,904
Total revenues	38,851,518	1,453,745,477	1,492,596,995
Cost of sales	(19,716,104)	(1,161,212,951)	(1,180,929,055)
Loss on devaluation of goods	-	(10,849,901)	(10,849,901)
Selling and administrative expenses	(367,564)	(274,208,268)	(274,575,832)
Loss on impairment of fixed assets	-	(348,619,215)	(348,619,215)
Finance costs	-	(22,126,944)	(22,126,944)
Total expenses	(20,083,668)	(1,817,017,279)	(1,837,100,947)
Loss before income tax	18,767,850	(363,271,802)	(344,503,952)

(Unit : Baht)

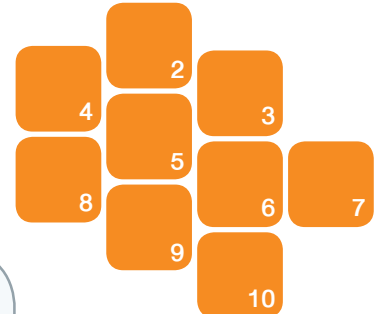
Separate financial statements			
For the year ended December 31, 2017			
	Promoted	Non-promoted	Total
Revenue from sales and services	46,657,164	1,634,736,437	1,681,393,601
Other income	-	53,911,959	53,911,959
Total revenues	46,657,164	1,688,648,396	1,735,305,560
Cost of sales	(20,432,874)	(1,321,284,733)	(1,341,717,607)
Loss on devaluation of goods	-	(10,591,352)	(10,591,352)
Selling and administrative expenses	(1,202,535)	(288,656,614)	(289,859,149)
Finance costs	-	(36,540,828)	(36,540,828)
Total expenses	(21,635,409)	(1,657,073,527)	(1,678,708,936)
Profit before income tax	25,021,755	31,574,869	56,596,624



35. Approval of the financial statements

These consolidated and the separate financial statements have been approved for issuance by the Company's board of directors on February 26, 2019.

BOARD OF DIRECTORS



1. Mr. Vichit Yamboonruang

Independent Director/
Chairman of the Board

4. Mr. Wara Tongprasin

Independent Director/
Audit Committee

7. Mr. Wiwat Sangtian

Director

10. Mrs. Daranee Kantamara

Director

2. Mr. Vinai Vittawasgarnvej

Independent Director/
Chairman of Audit Committee

5. Mr. Chatri Siripanichkorn

Independent Director/ Nomination
and Remuneration Committee

8. Mr. Danucha Noichai boon

Director/ Nomination and Remuneration
Committee/ Chairman of Risk Management
committee

3. Mr. Pitak Chaicharoen

Independent Director/
Chairman of Nomination and
Remuneration Committee/
Audit Committee

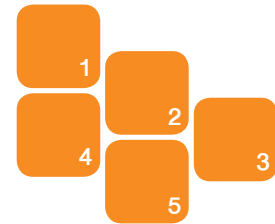
6. Miss Urawee Kanokpruk

Director/Nomination and
Remuneration Committee

9. Mr. Anan Santichewasatian

Director/ Risk Management
committee

MANAGEMENT TEAM



1. Mr. Danucha Noichaiboon
Managing Director

2. Mr. Anan Santichewasatian
Chief Financial Officer

3. Mr. Vithep Vachirabhahu
Senior Deputy Managing Director

4. Mrs. Daranee Kantamara
Deputy Managing Director of
General Administration

5. Mr. Daroonwat Noichaiaboon
Deputy Managing Director
of Marketing



- **Board of Directors & Management Team**

Mr.Vichit Yamboonruang

Independent Director / Chairman of the Board

Age : 77 years

Education / Training

- Bachelor of Economics, Commerce and Accountancy, Chulalongkorn University
- M.A.(Economics) Columbia University New York, USA.
- Ph.D. Public&International Affairs, University of Pittsburgh, Pennsylvania, USA.

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Certification Program (DCP) / 2004
- Director Accreditation Program (DAP) / 2004
- Audit Committee Program (ACP) / 2004
- Role of the Chairman Program (RCP) / 2004
- Charter Director Class (CDC) / 2007
- Boards that Make a Difference (BMD) / 2017

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

- 2018-present Independent Director / Chairman of Audit Committee
BMP Energy PCL.
- 2012-present Independent Director / Chairman of Audit Committee
Sherwood Chemicals PCL.
- 2012-present Chairman of the Board of Director
Wiik & Hoeglund PCL.
- 2012-present Independent Director / Chairman of Audit Committee
Jasmine International PCL.

Companies or other entities

- 2018-present Chairman of the Borad
V C K Solutions Co., Ltd.
- 2017-2014 Chairman of the Borad
Thai League Co.,Ltd.



Percentage of Shareholding : 1,407,310 shares or 0.105%

Percentage of Shareholding by Spouse and Minor Child : Mrs.Preyawan Yamboonrueng (Spouse)
149,922 Shares or 0.011%

Relationship between executives : None

Mr.Vinai Vittavasgarnvej

Independent Director / Chairman of Audit Committee

Age : 68 years

Education / Training

- Bachelor of Commerce and Accountancy, Thammasat University
- Master of Political Science, Thammasat University
- Thailand National Defence College (2004)
- Capital Market Academy (2011)

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Certification Program (DCP) 77/2006
- Audit Committee Program (ACP) 40/2012

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

- 2016 - present Independent Director / Audit Committee
Syn Mun Kong Insurance PCL.
- 2014 - present Independent Director / Chairman of Audit Committee
SRISAWAD POWER 1979 PCL.
- 2012 - present Independent Director / Chairman of the Board of Director
Sahamitr Pressure Container PCL.
- 2011 - 2015 Chairman of the Board of Director
Bangkok Dec-Con PCL.

Companies or other entities

- Present Chairman of the Board
JSSR Group Co., Ltd.



Percentage of Shareholding : None

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None

Mr.Pitak Chaicharoen

Independent Director / Chairman of Nomination and Remuneration Committee /
Audit Committee

Age : 78 years

Education / Training

- Bachelor of Dentistry, Mahidol University
- Diploma, National Defence College, The Joint State - Private Sector Course Class 5 Thailand
National Defence College

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Accreditation Program (DAP) 62/2007
- Director Certification Program (DCP) 92/2007

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

- 2006 - 2016 Director
Fakwantip Co., Ltd.
- 1988 – 2016 Chairman of the Board
Pataravet Co., Ltd.

Percentage of Shareholding : 340,544 Shares or 0.025%

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None



Mr. Wara Tongprasin

Independent Director / Audit Committee

Age : 47 years

Education / Training

- Bachelor of Business Administration (Accounting), Ramkhamhaeng University
- Tax Auditor and CPA

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Accreditation Program (DAP) 80/2009
- Advanced Audit Committee Program (AACP) 20/2015
- Risk Management Program for Corporate Leaders (RCL) 14/2018

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

- 2014 - present Independent Director / Chairman of Remuneration Committee / Audit Committee/ Risk Management Committee
Airports of Thailand PCL.

Companies or other entities

- 2013 - present Director
First Audit Co., Ltd.
- 2013 - present Director
Wara Holding Co., Ltd.
- 2012 – present Managing Director
The Asset Audit Co., Ltd.

Percentage of Shareholding : 39 Shares or 0.000%

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None



Mr.Chattri Siripanichkorn

Independent Director / Nomination and Remuneration Committee

Age : 71 years

Education / Training

- Bachelor of Commerce and Accountancy, Thammasat University
- Bachelor of Laws , Thammasat University
- Barrister 29, The Thai Bar Under The Royal Patronage

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Accreditation Program (DAP) 2013

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

- 2013 - present Chairman of Audit Committee
RAJA FERRY PORT PCL.

Companies or other entities

- Present Independent Director / Audit Committee
All Inspire Development PCL.

Percentage of Shareholding : None

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None

Miss Urawee Kanokpruk

Director / Nomination and Remuneration Committee

Age : 41 years

Education / Training

- Bachelor of Engineering, Chulalongkorn University
- Master of Engineering, University of Florida, U.S.A.

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Accreditation Program (DAP) 90/2011



Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

- 2015 - present Director
Thai Super Esco Co., Ltd.
- 2013 - present Director
Business Values Promotion Center Co., Ltd.
- 2012 - present Director
Hippolicious Co., Ltd.
- 2012 - present Director
Saendee Drinking Water Co., Ltd.
- 2012 - present Project Management Manager
Chula Engineering Co., Ltd.
- 2008 - 2015 Researcher
Chula Unisearch, Chulalongkorn University
- 2007 - 2015 Researcher
NIDA-Center for Business Innovation (NIDA-CBI)
- 2006 - 2015 Planning expert
Management Strategy Center

Percentage of Shareholding : 31,000,000 Shares or 2.308%

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None



Mr.Wiwat Sangtian

Director

Age : 69 years

Education / Training

- Bachelor of Civil Engineering, Chulalongkorn University
- Master of Civil Engineering, Carnegie-Mellon University, U.S.A.
- Ph.D. Civil Engineering, Carnegie-Mellon University, U.S.A.

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Accreditation Program (DAP) 2014

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

- | | |
|---------------|---|
| • 1995 - 2011 | Managing Director
Ekarat Engineering PCL. |
| • 1992 - 1995 | Managing Director
E.R.Metal Work Co., Ltd. |
| • 1977 - 1992 | Director of the Academic Housing Center
National Housing Authority |

Percentage of Shareholding : 170,000 Shares or 0.013%

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None



Mr.Danucha Noichaiboon

Managing Director / Chairman of Risk Management Committee / Nomination and remuneration Committee / Authorized Director

Age : 62 years

Education / Training

- Bachelor of Business Administration, Ramkhamhaeng University
- Master of Business Administration, Ramkhamhaeng University
- Diploma, National Defence College, The Joint State - Private Sector Course Class 17 Thailand National Defence College

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Accreditation Program (DAP) 90/2011

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

- | | |
|------------------|---|
| • 2015 - present | Director
Ekarat Energy Co., Ltd. |
| • 2005 - present | Director
KV Asset Co., Ltd. |
| • 2004 - present | Director
Ekarat Solar Co., Ltd. |
| • 1995 - present | Director
Ekarat Land and Development Co., Ltd. |
| • 1987 - present | Director
Ekarat Power Electronic Co., Ltd. |

Percentage of Shareholding : None

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : Little Brother's Mrs.Daranee Kantamara and
Older Brother's Mr.Daroonwat Noichaiboon

Mr. Anan Santichewasatian

Director / Risk Management Committee / Authorized Director / Chief Financial Officer

Age : 64 years

Education / Training

- Bachelor of Business Administration (Accountancy), College of Technology and Vocational Education
- Master of Business Administration (Management), Kasetsart University
- Diploma, National Defence College, The Joint State - Private Sector Course 2004 Thailand National Defence College

Training Program Organized by Thai Institute of Directors Association (IOD)

- Audit Committee Program (ACP) 18/2007
- Director Accreditation Program (DAP) 62/2007
- Director Certification Program (DCP) 90/2007
- Advanced Audit Committee Program (AAP) 24/2016
- Risk Management Program for Corporate Leaders (RCL) 11/2018

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

- | | |
|----------------|--|
| • 2015-present | Director
Ekarat Energy Co., Ltd. |
| • 2004-present | Director
Ekarat Solar Co., Ltd. |
| • 2012-present | Independent Director / Audit Committee
Bangkok Mass Transit System PCL. |

Percentage of Shareholding : None

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None



Mrs.Daranee Kantamara

Director / Authorized Director / Deputy of Managing Director in General Management

Age : 65 years

Education / Training

- Bachelor of Business Administration, Ramkhamhaeng University

Training Program Organized by Thai Institute of Directors Association (IOD)

- Director Accreditation Program (DAP) 90/2011

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

- 2004 - present Director
Ekarat Energy Co., Ltd.
- Present Director
KV Asset Co., Ltd.

Percentage of Shareholding : 1,895,453 Shares or 0.141%

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : Sister of Mr.Danucha Noichaiboon and
Mr.Daroonwat Noichaiboon



Mr.Vitthep Vachirabrahm

Senior Deputy Managing Director

Age : 62 years

Education / Training

- Bachelor of Business Administration, Roosevelt University, USA
- MBA Marketing, California International, USA

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

- 1987 - present Director
Ekarat Power Electronic Co., Ltd.

Percentage of Shareholding : None

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None

Mr.Daroonwat Noichaiboon

Deputy of Managing Director in Marketing

Age : 59 years

Education / Training

- Bachelor of Business Administration, Ramkhamhaeng University
- Master of Business Administration, Ramkhamhaeng University
- Diploma, National Defence College, The Joint State - Private Sector Course 2010 Thailand National Defence College
- Advanced Security Management Program (ASMP) class 8

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None



Companies or other entities

- 2004 - present

Director

Ekarat Solar Co., Ltd.

Percentage of Shareholding : 3,366,652 Shares or 0.251%

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : Brother of Mrs.Daranee Kantamara and Mr.Danucha Noichaiboon

Mrs.Somjit Phokabutr

Accounting Manager

Age : 60 years

Education / Training

- Bachelor of Business Administration (Accounting), Ramkhamhaeng University
- The course of preparing the consolidated financial statements to be in accordance with the new accounting principles and fair value measurement principles correctly SEAP Project
- The course of update financial reporting standards and future directions
- TFRS 15
- Preparatory courses support changes in financial reporting standards for financial instruments 2

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

- 1995 - 2014

Assistance Accounting Manager

Ekarat Engineering PCL.

Percentage of Shareholding : None

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None



Mrs. Supaporn Chansuroj

Financial Manager

Age : 58 years

Education / Training

- Bachelor of Business Administration (General Management), Ramkhamhaeng University
- The Course of Cash flow preparation
- The Course of Cash Budgeting

Working Experience in the last 5 years

Listed company on Stock Exchange of Thailand

None

Companies or other entities

None

Percentage of Shareholding : 313,234 Shares or 0.023%

Percentage of Shareholding by Spouse and Minor Child : None

Relationship between executives : None



บริษัท เอกรัตน์วิศวกรรม จำกัด (มหาชน)

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