

Smart Innovation for **Sustainable** Thai Electricity



Annual Report 2017

Electricity Generating Authority of Thailand

EGAT's new vision **"Innovate power solutions for a better life"** reflects the intention of EGAT to mobilize the organization across the era of fast technological change in support of Energy 4.0 policy of the Ministry of Energy and consequently the government's policy Thailand 4.0 by strengthening the energy system and applying modern innovation in the development of electricity business of Thailand to bring the country to stability with participation of the people resulting in sustainable society.





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Vision

“INNOVATE POWER SOLUTIONS FOR A BETTER LIFE”

Mission

- To generate, acquire, supply, or sell electricity
- To conduct electricity-related businesses and other businesses related to EGAT's activities including production and sale of lignite according to the EGAT Act B.E. 2511 (1968) (Amended in B.E. 2535) (1992)

Corporate Core Value and Culture

SPEED

S : Sense of Belonging

P : Performance Excellence

E : Ethic and Integrity

E : Enthusiasm for Innovation

D: Devotion to Society

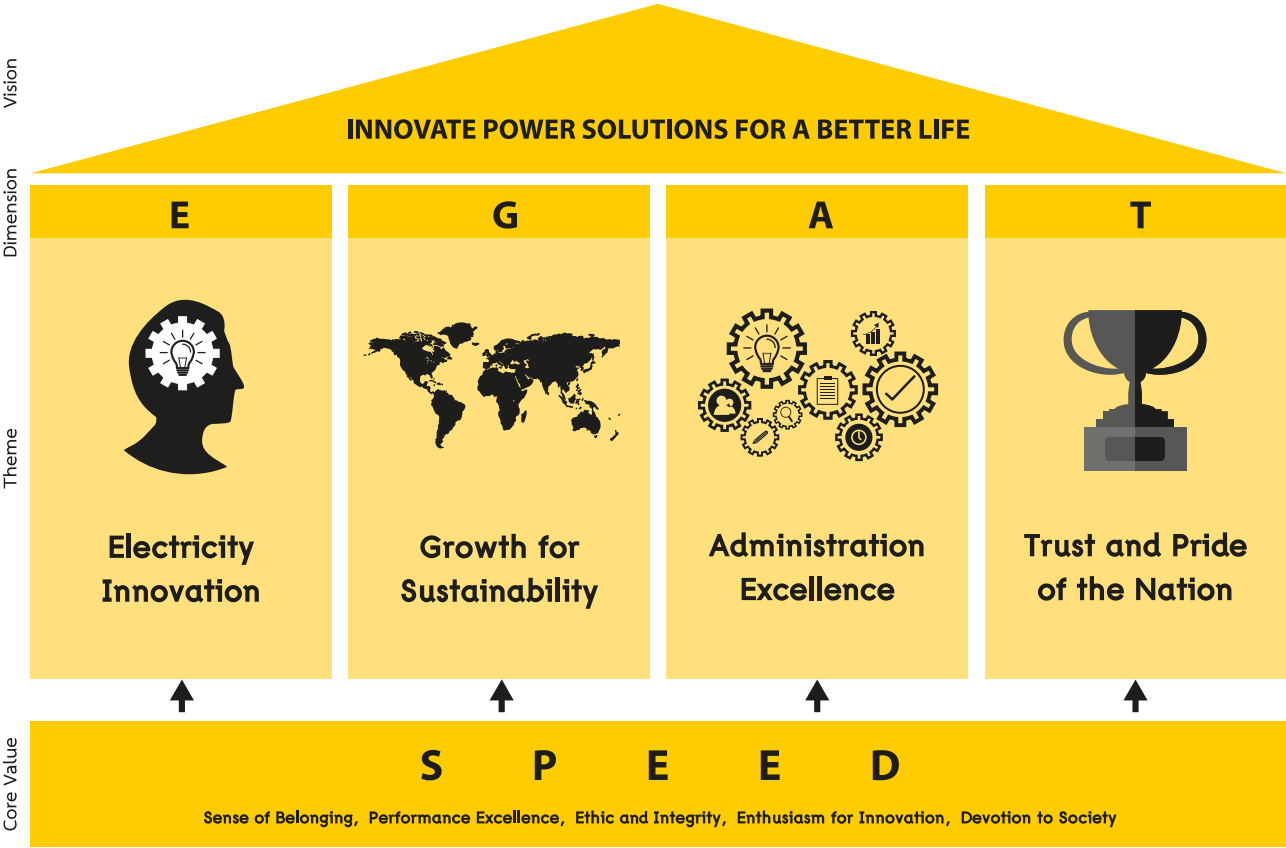


Development Dimension

EGAT intends to achieve its vision through the 4 development dimensions as follows:

- E : Electricity Innovation
- G : Growth for Sustainability
- A : Administration Excellence
- T : Trust and Pride of the Nation

Strategic Map



About EGAT

The Electricity Generating Authority of Thailand (EGAT) was established by virtue of the EGAT Act B.E. 2511 (1968) on May 1, 1969. Being a state enterprise in the area of energy under the Ministry of Energy with the Ministry of Finance as the major shareholder, EGAT is responsible for generating, acquiring, and supplying electricity to the Metropolitan Electricity Authority (MEA), Provincial Electricity Authority (PEA), legal power users, and neighboring countries such as Malaysia. EGAT is also responsible for power related activities and services, producing and selling lignite and its by-products under the EGAT Act B.E. 2511 (1968) and its amendment B.E. 2535 (1992).

At present, the operation of EGAT is in accordance with the Electricity Supply Industry whereby, under the supervision of the Energy Regulatory Commission, EGAT is the producer and supplier of electricity and controls the electricity production and distribution throughout the country to be efficient and adequate for the demand in parallel with environmental management for the community and society.

EGAT Headquarters is situated at No. 53, Moo 2, Charansanitwong Road, Bang Kruai District, Nonthaburi Province 11130. The Transmission System Operation has 5 offices; two are in Nonthaburi Province, and the rest are in Phitsanulok, Khon Kaen, and Krabi Provinces.



Financial Overview

Unit : Million Baht

	2017	2016 (Adjusted)	2015 (Adjusted)
Operating Performance			
Revenue from sales and services	494,119.47	496,883.00	546,480.33
Income from sales and services	76,149.40	79,184.13	72,166.45
Gains (Losses) on foreign exchange	13,936.23	949.85	(11,996.27)
Finance costs	41,130.02	41,703.96	31,685.73
Net profit - Owners of EGAT	55,763.30	43,442.67	31,270.42
Net profit - Non-controlling interests	3,279.47	3,336.72	1,579.00

Financial Position

Total assets	986,306.23	963,019.88	876,492.83
Property, plant and equipment - net	277,485.58	276,496.24	273,251.44
Total liabilities	555,291.97	559,964.79	495,819.64
Long - term loans	91,468.57	75,906.32	75,816.28
Owners' equity and non-controlling interests	431,014.26	403,055.09	380,673.19

Financial Ratios

Gross profit to net sales (percentage)	18.71	19.24	16.29
Net profit to net sales (percentage)	11.95	9.41	5.99
Return on total assets (percentage)	6.06	5.09	4.07
Debt to equity ratio (time)	1.29	1.39	1.30
Times interest earned (time)	2.47	2.14	2.08

Smart Energy

EGAT has done research and development for innovations, new technologies, and generation system to increase the efficiency of power plants with a focus on greenhouse gas emissions reduction to sustainably prevent global warming.

EGAT intends to mobilize the use of environmentally-friendly energy through the development of renewable energy projects in combination with innovations and modern technologies to increase stability in electricity generation.





Message from the Chairman

The year 2017 was another year in which several important social, economic, and political events took place. The Electricity Generating Authority of Thailand (EGAT) had some involvement in such events in the capacity of a state enterprise. The involvement as a whole clearly reflected the mission of EGAT in supporting the Energy 4.0 policy of the Ministry of Energy which is in line with the government policy, Thailand 4.0. By this, EGAT will operate its electricity business by means of innovation with a tangible progress. Among the significant achievements of EGAT under the theme “Smart Innovation for Sustainable Thai Electricity” was the opening of Thap Sakae Solar Power Plant in Prachuap Khiri Khan Province. Thap Sakae Solar Power Plant with the generating capacity of 5 MW is the only power plant in Thailand which combines 4 technologies in electricity generation by solar cells. The purpose of the power plant is to conduct research and development of renewable energy and electricity generation by solar cells. In the near future, new innovations and technologies such as the development of hybrid technology and energy storage will be used to stabilize the electricity generation by renewable energy in accordance with the Alternative Energy Development Plan B.E. 2558-2579 (2015-2036) of the Ministry of Energy.

EGAT has incorporated approximately 500 MW renewable energy projects in AEDP 2015. At the first stage, during 2018-2021, the following 7 power development projects with the generating capacity of 32 MW will be implemented gradually and added to the commercial system:

- Four projects of floating solar panels comprising Bang Pu Dum reservoir in Krabi Province, Huay Ped and Huay Sai reservoirs in Lampang Province, and the reservoir of Wang Noi Power Plant in Ayutthaya Province
- Three projects of land-based solar panels consisting of Mukdahan 2 Substation in Mukdahan Province, EGAT Mae Moh in Lampang Province, and Chom Bueng Substation in Ratchaburi Province.

The Chom Bueng Substation, in particular, will be equipped with a battery energy storage system which can be developed into other storage systems such as hydrogen storage for fuel cell or hydrogen gas engine. It will also serve as a learning center for solar power generation for students and the general public in the future.

In the context of the dynamic social and economic situation, the changing behavior in electricity use from the “camel’s humps” to “duck curve” and the disruptive technology have necessitated EGAT to adapt itself and change its vision to be in line with the changing direction and situation. The new vision “Innovate Power Solutions for a Better Life” and the new values and cultures “SPEED” (Sense of Belonging, Performance Excellence, Ethic and Integrity, Enthusiasm for Innovation, Devotion to Society) were established. The organizational structure was reengineered with the addition of the line of command for Deputy Governor - Renewable and New Energy.

In 2017, the achievements of EGAT were evidenced by several awards of pride. Among these awards are the Outstanding Award for Promotion of Energy Conservation and Renewable Energy 2017 in the Thailand Energy Awards 2017 and the Outstanding State Enterprise Award 2017 in the category of outstanding management. The latter award was given to EGAT for having implemented the “Royal Philosophy” of His Majesty King Bhumibol Adulyadej in various areas in a balanced and rational style so that the organization is strengthened from within and capable to cope with the outside changes. The capability of the state enterprise has been increased to develop the country to stability, prosperity, and sustainability. Moreover, the international awards received by EGAT also reflect its excellent performance. The two awards received in the ASEAN Coal Awards 2017 were the first prize for Best Practice for Surface Coal Mining Category for the work “Mae Moh Lignite Mine” and the first runner-up prize for Corporate Social Responsibility (CSR) Category for the work

“The Community Collaboration for Sustainable Development in Mae Moh District.”

Apart from the success guaranteed by the awards and prizes, the responsibility of EGAT has been widened to embrace the role of an importer of liquefied natural gas (LNG) and to implement the project on construction of infrastructure to support the imported LNG for electricity generation in EGAT power plants. As a result, EGAT’s business is a complete business cycle of upstream, middle stream, and downstream activity. This mission was entrusted to EGAT by the resolution of the National Energy Policy Council (NEPC). According to the resolution, EGAT will be the first third-party to supply natural gas to the PTT system with the maximum of 1.5 million tons of LNG per year for use in EGAT power plants starting from 2018. Moreover, EGAT will implement the construction project of Floating Storage and Regasification Unit (FSRU) to support the import of LNG of 5 million tons for use in electricity generation of South Bangkok Power Plant Units 1 and 2 and North Bangkok Power Plant, as well as supplying to the natural gas pipeline system. This is a project which is intended to inspire new entrepreneurs in natural gas in Thailand and to add more entry points for the natural gas pipeline system to increase stability in the acquisition of natural gas and promote competition in natural gas business.

In 2017, EGAT’s bond received great confidence from investors. Its bid coverage ratio (BCR) was as high as 2.45, and the rate of return was 3.54 percent per year. EGAT made a loan to add to the investment of EGAT power plants and transmission system in the fiscal year 2017 by issuing 20-year bonds of 6,000 million Baht with the credit rating at the level of AAA by the Public Debt Management Office. EGAT bonds were sold to no more than 10 specific long term investors (PP10).

In addition to EGAT’s mission in electricity business which covers the power sources, fuel, and finance, EGAT has also given importance to the social



and environment activities throughout its 49 years of operation with its principle “Wherever EGAT is, the community there will enjoy sustainable happiness.” The achievements in this area are sharing knowledge with the society through the 8 EGAT learning centers across the country, EGAT Reforestation Project, and Biological Way of Life for Sustainable Development Project which EGAT has continuously carried out for the society and communities.

On behalf of EGAT Board of Directors and EGAT Executives, I would like to thank all groups of stakeholders for their support and constructive comments. I hope to receive their continued goodwill to contribute to the stability of electricity affairs of the country.

Mr. Areepong Bhoocha-Oom
Chairman, Board of Directors
Electricity Generating Authority of Thailand

Report of the Audit Committee

The Audit Committee, appointed by EGAT Board of Directors, consists of three members selected from independent directors of the EGAT Board of Directors. One member, at least, shall be knowledgeable and have experience in finance and accounting. EGAT Assistant Governor - Internal Audit Bureau serves as secretary of the Audit Committee.

The Audit Committee has independently performed its duties in accordance with the procedures set forth in the Audit Committee Charter to enhance good corporate governance.

In 2017, the Audit Committee had 12 meetings to discuss relevant agenda with EGAT Executives and the independent auditor (from the Office of the Auditor General of Thailand). The significant issues can be summarized as follows:

1. Review of Financial Statements

- Reviewing with EGAT Governor, Deputy Governor - Account and Finance, and the independent auditor from the Office of the Auditor General of Thailand, on the monthly, quarterly, and annual financial statements of EGAT and its subsidiaries to consider the appropriateness of the reports and to give useful recommendations to ensure the accuracy and reliability of the reports with adequate disclosure of important information, in accordance with generally accepted accounting principles
- Discussing with EGAT Governor and the independent auditor on the development of the internal control systems

2. Review of the Independent Auditor's Scope and Processes

- Reviewing and discussing with the independent auditor on the scope and processes of the auditing practices and the performance of the auditor to enhance good coordination and reduce duplication of efforts

3. Review of Risk Management and Internal Control

- Reviewing EGAT's risk management and internal control system to consider the sufficiency, appropriateness, and coverage of all significant issues
- Discussing with the top executives and the management of each unit to consider risk management, internal control systems, and process monitoring of key activities within their respective units to provide the best interests for EGAT's operations

4. Review of Good Corporate Governance

- Reviewing the corporate governance process and the conflict of interest report to comply with the good corporate governance principles and the best practice
- Proposing the establishment of the Compliance Committee, which was appointed on June 28, 2017, to oversee the operations in accordance with relevant regulations, orders, and EGAT laws

5. Review of Compliance

- Reviewing the operations to ensure compliance with relevant regulations, orders, and laws including the requirements of the regulators relating to EGAT's activities

6. Review of the Evaluation Reports of the Governor's Performance

- Reviewing the evaluation reports of the Governor's performance (Mr. Kornrasit Pakchotanon) for the period of June 15 - December 31, 2016 and the period of January 1 - June 30, 2017

7. Oversight of the Internal Audit Bureau

- Approving the Annual Audit Plan of 2018 and Three-Year Strategic Audit Plan (2018-2020) including consideration of the sufficiency of resources to perform activities
- Approving the performance assessment of the Internal Audit Bureau for the year 2017
- Reviewing the quarterly internal audit reports of EGAT and its subsidiaries and continuous follow-up on the correction and improvement in accordance with the audit comments

The Audit Committee believed that throughout the year 2017, EGAT had maintained effective risk management, internal control systems, and corporate governance practices which enabled EGAT's operations to meet the set objectives. EGAT's financial statements were also prepared in accordance with the generally accepted accounting principles and were presented with adequate information disclosure. EGAT also cooperated in complete compliance with laws, rules, and regulations with no significant deficiency. In performing their duties, members of the Audit Committee expressed their opinions independently and provided straightforward recommendations to the Management and concerned parties to ensure the maximum benefit for all concerned parties.

8. Review of the Charter of the Audit Committee and Internal Audit

- Reviewing the appropriateness of EGAT Audit Committee Charter, EGAT Internal Audit Charter, and the Internal Audit Manual to ensure the coverage of the roles and responsibilities of the Audit Committee and the Internal Audit function

9. Conduct of the Audit Committee's Self-Assessment and Submission of the Report of the Audit Committee to EGAT Board of Directors

- Conducting the self-assessment of the Audit Committee and the individual members of the Audit Committee annually based on the guidelines of practice of the audit committee of the state enterprises set forth by Ministry of Finance for submission to EGAT Board of Directors to enhance the effectiveness, transparency, and reliability of the Audit Committee
- Providing the Report of the Audit Committee for submission to EGAT Board of Directors, Ministry of Energy, and Ministry of Finance



(Mr. Porametee Vimolsiri)
Chairman of the Audit Committee
January 15, 2018

Economic and Electricity Overview

In 2017, the overall peak demand of EGAT power system was 28,578.40 MW occurring at 14.20 hours on Thursday, May 4, 2017 representing a decrease of 1,040.40 MW or 3.51 percent of the previous year. The total net energy generation requirement throughout 2017 decreased to 188,934.97 million kWh from 188,999.64 million kWh of the earlier year. This marked a slight decrease of 64.68 million kWh or 0.03 percent.

The net energy demand in 2017 was similar to that of the previous year. The main factor which resulted in the demand for electricity was the economic factor including **the expenditure** which covered the growth of export, government expenditure, as well as the continual expansion of private consumption and investment; and **the manufacture** which covered industrial manufacturing, wholesale and retail business, electricity, gas, water works, and fisheries which grew at a significant rate. Meanwhile, agriculture, transport and communication, as well as hotel and restaurant business slowed down, and construction sector shrank.

For 2018, the net overall peak demand of EGAT power system is estimated to be approximately 31,269 MW, and the net total energy generation requirement will be approximately 193,771 million kWh (referenced from the forecast of electricity demand from PDP 2015).



According to the National Economic and Social Development Board (NESDB), the Thai economy in 2018 is expected to grow 3.6-4.6 percent. The supporting factors include:

1. The global economy and the continued growth of export which help support the acceleration of the industrial sector and Thai economy
2. The acceleration of public investment following the progress of major investment projects and the increased budget for expenditure of investment
3. The significant recovery of private investment
4. The trend of continued growth of important economy such as tourism, export, transport and communication, and household consumption
5. The satisfactory adjustment of employment and the income base of the people in the economic system



Operations

EGAT's Total Contract Capacity

In 2017, the total contract capacity in EGAT system was 42,433.25 MW comprising 16,071.13 MW from EGAT power plants contributing to 37.87 percent of the system, 14,948.50 MW from independent power producers (IPPs) which was

35.23 percent of the system, 7,536.02 MW from small power producers (SPPs) accounting for 17.76 percent of the system, and 3,877.60 MW from imported power contributing to 9.14 percent of the system.

Power Generation and Power Purchase

The overall peak demand of EGAT's power system was 28,578.40 MW occurring at 14.20 hours on Thursday, May 4, 2017 representing a decrease of 1,040.40 MW or 3.51 percent of the previous year (29,618.80 MW at 22.28 hours on Wednesday, May 11, 2016).

The total net energy generation requirement throughout the year 2017 declined to 188,934.97 million kWh from 188,999.64 million kWh of the previous year. This marked a decrease of 64.68 million kWh or 0.03 percent. The average net energy per day in 2017 was 517.63 million kWh, decreasing by 0.18 million kWh or 0.03 percent from the previous year (517.81 million kWh).

In 2017, EGAT's electricity generation still relied on natural gas as the main fuel which could generate the net energy of 120,014.78 million kWh or 63.51 percent of the total generated and purchased power. Next to natural gas was coal which could generate the net energy of 33,733.83 million kWh or 17.86 percent. The net electric power of 10,166.23 million kWh or 5.38 percent was generated from renewable energy (hydro, wind, solar, geothermal, and biomass), whereas that of 24,328.54 million kWh or 12.88 percent was purchased from abroad. Electricity of 585.78 million kWh or 0.31 percent was generated from fuel oil, palm oil, and diesel, and 105.81 million kWh or 0.06 percent from other.

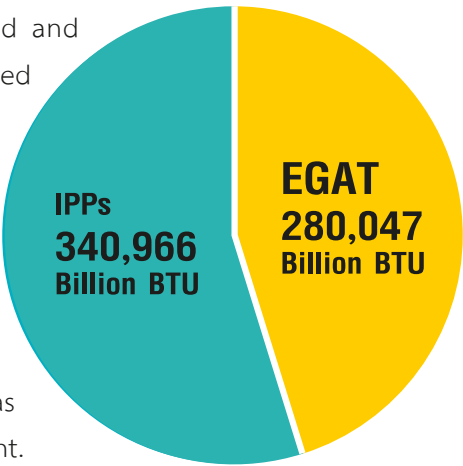


In 2017, the following new power plants were added to the power system.

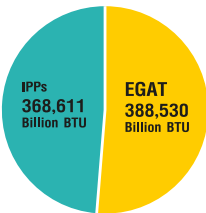
	Contract Capacity (MW)	Commercial Operation Date (COD)
Firm Small Power Producers (SPPs Firm)		
1. Advance Agro Asia Co., Ltd.	90	February 10, 2017
2. Glow Energy Public Co., Ltd. (Project 1)	60	April 1, 2017
3. Gulf VTP Co., Ltd.	90	May 16, 2017
4. Rojana Power Co., Ltd. (Project 3)	90	June 20, 2017
5. Bangpa-in Cogeneration Co., Ltd. (Project 2)	90	June 29, 2017
6. Gulf TS 1 Co., Ltd.	90	July 8, 2017
7. Klongluang Utilities Co., Ltd.	90	July 20, 2017
8. Gulf TS 2 Co., Ltd.	90	September 1, 2017
9. Glow Energy Public Co., Ltd. (Project 2)	60	September 1, 2017
10. Banpong Utilities Co., Ltd. (Project 1)	90	October 1, 2017
11. Banpong Utilities Co., Ltd. (Project 2)	90	October 1, 2017
12. Gulf TS 3 Co., Ltd.	90	November 1, 2017
13. IRPC Clean Power Co., Ltd. (Project 1)	90	November 7, 2017
14. IRPC Clean Power Co., Ltd. (Project 2)	90	November 15, 2017
Non-firm Small Power Producers (SPPs Non-firm)		
1. EA Wind Hadkanghan 3 Co., Ltd. (Project 1)	36	March 3, 2017
2. Ruamphol Biopower Co., Ltd. (Project 1)	25	March 23, 2017
3. EA Wind Hadkanghan 3 Co., Ltd. (Project 2)	45	June 10, 2017
4. EA Wind Hadkanghan 3 Co., Ltd. (Project 3)	45	June 23, 2017
5. ES Power Co., Ltd. (Project 2)	20	August 12, 2017

Fuel Consumption

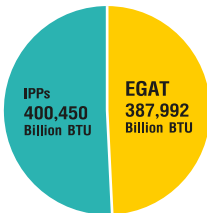
In 2017, natural gas supply for EGAT’s electricity generation was derived from various gas fields in the Gulf of Thailand and on-land (Nam Phong, Sin Phu Hom, and Sirikit fields) and imported from Myanmar (Myanmar field and LNG). Natural gas utilization by EGAT’s power plants amounted to 280,047 billion BTU costing 64,823 million Baht. The amount of natural gas used by the IPPs’ power plants was 340,966 billion BTU costing 77,004 million Baht. Therefore, the total amount of natural gas used in electricity generation was 621,013 billion BTU. The average price of the natural gas (including marketing and piping charges) was 228.38 Baht/million BTU. The total price was 141,827 million Baht.



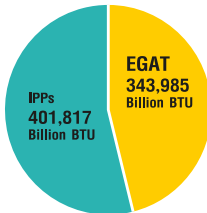
2017 621,013 Billion BTU



2014 757,141 Billion BTU



2016 788,442 Billion BTU



2016 745,802 Billion BTU

Natural Gas Utilization in terms of Amount, Price, and Value (2015-2017)

Year	Power Plant	Gas Utilization		Price ¹	Value ²
		(Billion BTU)	(%)	(Baht/Million BTU)	(Million Baht)
2015		788,442	100	285.41	221,261
	EGAT	387,992	49		105,136
	IPPs	400,450	51		116,125
2016		745,802	100	225.73	168,350
	EGAT	343,985	46		76,029
	IPPs	401,817	54		92,321
2017		621,013	100	228.38	141,827
	EGAT	280,047	45		64,823
	IPPs	340,966	55		77,004

Remark : ¹The price of natural gas is the average price of natural gas purchased by EGAT power plants including marketing and piping charges.

²The value of natural gas includes marketing and piping charges but does not include the value-added tax (VAT).

From the above table and the chart, it is obvious that the use of natural gas as fuel in power generation in 2017 was 16 percent lower than that in 2016 because of the impact of electricity generation outside EGAT's system and more electricity generated by SPPs, whereas the electricity demand was similar to that of the earlier year.

The average price of natural gas in 2017 increased by 1.2 percent as the price of bunker oil became higher. In 2017, the value of natural gas purchased for electricity generation decreased by 26,523 million Baht or 15 percent of the year 2016.

As for the oil, it was used for replacing main fuel in case of its shortage or when the power plant could not generate electricity or during the peak load which was higher than expected. In 2017, the oil was used to support the shortfall of natural gas caused by the discontinuity in gas supply from the gas fields in the West of Myanmar and from the Malaysia-Thailand Joint Development Area (JDA-A18) for its annual maintenance. Moreover, the oil was used in the time of emergency and for the unexpected incident such as the use of fuel oil at Krabi Power Plant and Ratchaburi Power Plant as well as the use of diesel oil at Chana Power Plant. With a variety of oil used in power generation, an efficient management was necessary in order to reduce the impact on electricity charge.

As the regulatory body has a policy in developing and promoting the competition of natural gas business which will lead to more efficiency in natural gas supply and service so that clients will receive quality service with reasonable price, the 13th Meeting of the National Energy Policy Council (NEPC) (3rd/2017) on July 31, 2017 agreed on the principle and guidelines for operation phase 1 which was the period of implementing

the pilot project. EGAT was entrusted to make preparations for being the new provider of LNG (Liquefied Natural Gas) in an amount of no more than 1.5 million tons per year within 2018 to be used with EGAT's power plants. The criteria in importing LNG are in accordance with the NEPC's resolution on June 28, 2010, the same criteria as the PTT Public Company Limited. EGAT, as a natural gas provider has to clearly separate natural gas business from electricity generation business. This is to test the structure of natural gas business which has more than one provider, the requirement of using LNG station service and natural gas pipeline system under the regulations concerning the provision of LNG service to the third person, and the connection to LNG station (TPA Code) which is the preparation for free market in the future allowing more than one provider.

In order to achieve the objective of the NEPC's resolution, EGAT has reserved its capability in providing service to the additional 1.5 million tons/year (Open Season) of the PTT LNG Co., Ltd. On October 31, 2017, EGAT received the letter informing EGAT's right for the LNG allocation for 38 years. The LNG delivery will approximately start in 2019 and end in 2056.

The provision of LNG is the new mission of EGAT which supports the government's policy in promoting the competition of natural gas business, provides an opportunity for EGAT businesses, and enhances the security of the power system of the country.

Energy Sales

EGAT’s energy sales totaled 185,130.89 million kWh. Its sales included 52,646.13 million kWh sold to the Metropolitan Electricity Authority (MEA), 130,237.60 million kWh to the Provincial Electricity Authority (PEA), 1,282.80 million kWh to direct customers, 584.76 million kWh to neighboring countries (Lao PDR, Malaysia, and Cambodia), and 379.60 million kWh to the customers purchasing electricity for temporary and standby use and other kinds of customers.

Energy Adjustment Charge (Ft Tariff)

In 2017, the cost of electricity generation increased from the previous year mainly because of the expense for promoting power purchase from renewable energy according to the government’s policy comprising Adder and FiT which approximately increased by 7,917 million Baht (increased to 39,821 million Baht in 2017 from 31,904 million Baht in 2016). Moreover, the average price of crude oil sold in Dubai rose by 12.30 USD/BBL (rose to 53.03 USD/BBL in 2017 from 40.73 USD/BBL in 2016), though the Baht currency strengthened by 1.36 Baht/USD (strengthened to 34.11 Baht/USD in 2017 from

35.47 Baht/USD in 2016). As a result, the price of natural gas which was the main fuel for electricity generation increased only 1 Baht/million BTU (the average price of 238 Baht/million BTU in 2016 increased to 239 Baht/million BTU in 2017). Therefore, the Energy Regulatory Commission approved the electricity tariff in 2017 with 3 revisions comprising January - April (the Ft Tariff of -37.29 Satang per unit), May - August (the Ft Tariff of -24.77 Satang per unit), and September - December (the Ft Tariff of -15.90 Satang per unit).

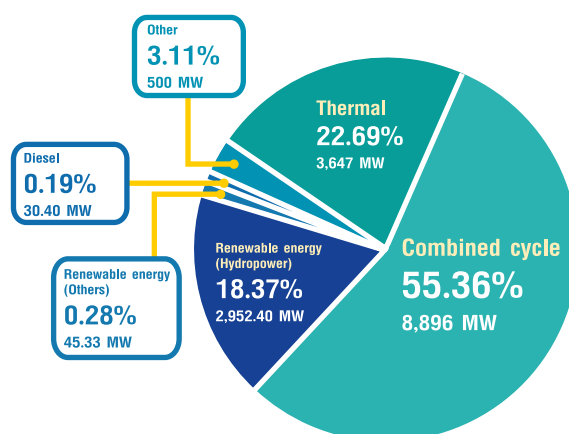
Ft Tariff in 2017

Revision	Month	Ft Tariff (Baht/Unit)	Average Retail Tariff including Ft (Baht/Unit)
1	January - April	-0.3729	3.38
2	May - August	-0.2477	3.51
3	September - December	-0.1590	3.60

EGAT Generation Fleet

The installed capacity in power generation of EGAT according to types of power plants

Type of power plants	Installed capacity (MW)	Percentage of the system capacity
Thermal	3,647.00	22.69
Combined cycle	8,896.00	55.36
Renewable energy (Hydropower)	2,952.40	18.37
Renewable energy (Others)	45.33	0.28
Diesel	30.40	0.19
Other	500.00	3.11
Total	16,071.13	100.00



Performance of EGAT's power plants

No.	Performance	2014	2015	2016	2017
1	Heat Rate (kJ/kWh)	8,503.00	8,286.00	8,236.17	8,252.00
2	GWEAF (%)	92.80	92.93	93.78	93.67
3	POF (%)	3.90	3.98	3.62	3.37
4	UOF (%)	2.30	2.38	2.10	2.37
5	UDF (%)	1.00	0.71	0.50	0.59

In 2017, the overall performance of EGAT generating power plants had a slight decrease of 0.11 percent compared with the year 2016. The Planned Outage Factor (POF) decreased by 0.25 percent, whereas the Unplanned Outage Factor (UOF) increased by 0.27 percent, and the Unplanned

Disruption Factor (UDF) increased by 0.09 percent as shown in the table. EGAT has been able to continuously control the rate of UOF and UDF to be less than 3 percent and 2 percent respectively since 2010.

Transmission System

EGAT's transmission system comprises transmission lines of 33,393.186 circuit-kilometers with 223 substations and a total transformer capacity of 106,889.37 MVA.

In 2017, EGAT's transmission system had 55 forced outages because of several factors which comprised failure of the transmission lines (11 times), failure of substation equipment (43 times), and malfunction in the electricity generation (1 time). The interruption was mainly caused by the aged substation equipment and transmission equipment including the malfunction of equipment for prevention system and control system (23 times), by animals (9 times), by environment (7 times), by weather (2 times), by human errors, either staff or outside people (6 times), by the shutdown in generation system (1 time), and by unidentifiable reasons (7 times).

EGAT's bulk power supply system performance in 2017

- System Average Interruption Frequency Index (SAIFI), (number of occurrence/delivery point): 0.19156
- System Average Interruption Duration Index (SAIDI), (minutes/delivery point): 2.73021
- Service Availability (SA) (%): 99.69901
- Transmission Circuit Availability (%): 99.99268
- Transformer Availability (%): 99.80923

Remark: The quality of the power supply service of EGAT has been considered by the Unplanned Outage which is used for EGAT's performance evaluation.



To ensure the availability and continuity of the quality power supply service, EGAT has given importance to the improvement and maintenance of existing transmission facilities. Throughout 2017, new technologies have been used to enhance security of the power system and more efficient works such as:

- Drones have been used to check the condition of transmission lines and the intrusion into the transmission line zone, particularly in the areas which are difficult to travel by land. This helps save time and the cost of transmission line equipment inspection.

- Smart cameras have been used to monitor transmission line zone, especially intrusion into the electricity network area due to the rapid expansion of community or by natural disaster i.e. an area where there is water to erode the foot of electrical pole, risky area of landslide, the burning of materials under the transmission line zone, or placing working machinery near the transmission line zone. More than 600 sets of smart cameras have been installed on the electrical poles in the risky areas all over the country enabling EGAT to prevent such serious incidents.

- Transformer online monitoring with analytic software has been used to monitor the current operation of the transformers at all times. The time-based maintenance can be changed to condition-based maintenance which helps save the cost of maintenance throughout the transformer life.

However, in the risky areas for the incidents caused by human action or natural disaster which may lead to the destruction of the power system, EGAT has closely monitored them under strict surveillance. Preparation has been made for the sudden maintenance when the failure of the system occurs, to ensure the utmost security and reliability of the power system of the country.



Smart System

In the development of “smart system,” Mae Hong Son Province has been used as the site of the pioneer project on smart grid development. The electricity generation by renewable energy and the power storage are controlled and instructed by a computer in order to be consistent with electricity demand. The system that will increase the maximum efficiency of electricity generation and electricity use is expected to be completed in 2019.





Nature of Business of EGAT and Affiliates

EGAT's Business Operation

EGAT is a state-owned enterprise under the supervision of Ministry of Energy and Ministry of Finance. The principle mission of EGAT is electricity generation, electricity acquisition, and electricity sales to the Metropolitan Electricity Authority (MEA), the Provincial Electricity Authority (PEA), a number of direct customers by law, and neighboring countries. EGAT is also responsible for other related businesses as stipulated by the EGAT Act.

1. Core Business in Electricity Generation

1.1 Electricity Generation

Electricity is generated from EGAT's 47 power plants located in different parts of the country. With a total installed capacity of 16,071.13 MW, EGAT power plants consist of 3 thermal power plants, 6 combined cycle power plants, 24 hydropower plants, 9 renewable power plants (wind, solar, and geothermal), 4 diesel power plants, and Lamtakong Jolabha Vadhana Power Plant.

1.2 Electricity Purchase

In addition to operating its own power plants, EGAT also purchases bulk electricity from 12 Independent Power Producers (IPPs) totaling 14,948.50 MW, from Small Power Producers (SPPs) totaling 7,536.02 MW, and from neighboring countries, namely Lao PDR and Malaysia totaling 3,877.60 MW.

1.3 Electricity Transmission

EGAT transmits electricity generated by its own power plants and purchased from private power producers through its own grid network covering all parts of the country. EGAT's transmission lines comprise different voltages ranging from 500 kV, 230 kV, 132 kV, 115 kV, and 69 kV. EGAT sells electricity to its direct customers and two distributing authorities, namely MEA and PEA which further deliver electricity to their retail customers countrywide. EGAT also sells electricity to the power utilities of neighboring countries, namely Lao PDR at 115 kV and at 22 kV lines and Malaysia at 300 kV HVDC lines.

2. Other Businesses

2.1 EGAT Related Business

In 2017, EGAT performed business transactions conforming to the business growth strategy. Adhering to high quality services, EGAT has provided power plant operation and maintenance services as well as by-products of electricity

generation to EGAT customers including IPPs, SPPs, and industrial power plants. In addition, EGAT has expanded its business to ASEAN region.

Regarding EGAT related business in Thailand, for the IPP customers, EGAT provided regular

operation and maintenance service to Gulf JP NS Co., Ltd. and Gulf JP UT Co., Ltd. For the SPP customers, EGAT provided operation and maintenance service to Nava Nakorn Electricity Generating Co., Ltd. (NNEG), which has been able to achieve its higher efficiency than the target. Moreover, EGAT was entrusted by a leading electricity equipment producer to remove aged gas turbines and install the new ones at the South Bangkok Power Plant Block 2 and to provide service relating to CRI/unstacking rotor for Ratchaburi Power Co., Ltd. and Tuas Power Co., Ltd. in Singapore.

Furthermore, EGAT signed a 3-year contract with Global Power Synergy Co., Ltd. on November 21, 2017 concerning power plant chemistry services with the scope of water quality management in the electricity generation process in accordance with the standard criteria to increase efficiency of the power plant.

The purpose of expanding EGAT related business to the ASEAN countries is not only to gain additional income to EGAT but also to enhance the security of the electricity system of the country as Thailand in turn purchases electricity from some ASEAN countries. Moreover, EGAT related business has consequently strengthened the foreign relations. In 2017, EGAT related businesses in overseas are as follows:

- EGAT provided impressive service in power operation and maintenance to Nam Theun 2 Power Co., Ltd. (NTPC) in Lao PDR during the past few years. The new 8-year contract in power operation and maintenance service for Nam Theun 2 Power Plant was signed on February 3, 2017 at Lao Plaza Hotel in Lao PDR.

- From the contract agreement between EGAT and Bhutan Power Corporation Limited (BPC) for rehabilitation and automation of Thimphu Mini Hydropower Plant on December 8, 2016, EGAT has provided service to improve the efficiency of Thimphu Power Plant which is the first mini hydropower plant of Bhutan with the installed

capacity of 360 kW. The service was completed in August 2017. From the excellent service, BPC has expressed the interest in having EGAT service to other power plants.

EGAT has intended to make use of the by-products from power generation at Mae Moh Power Plant in Lampang Province such as fly ash, bottom ash, and synthetic gypsum, which originated the by-product business. Development of by-product innovation to be in line with the modern age has been conducted with cooperation between EGAT and leading educational institutions, researchers, and experts in different areas to leverage the quality of by-products from power generation process by lignite.

Today, by-products have been widely utilized. Fly ash can be used as a substitute of Portland Cement Type 1 as it can better the quality of concrete by reducing the temperature from the hydration reaction, reinforcing the resistance to chloride and sulfate of concrete, and lowering the risk of crack formation. Fly ash has been used in important construction industries such as pile, concrete pipe, precast concrete paving block, and in the large construction projects such as the construction of Khun Dan Prakan Chol Dam in Nakhon Nayok Province, the Mass Rapid Transit Authority of Thailand (MRT) projects in Bangkok, foundation posts of Rama VIII Bridge, foundation work of Suvarnabhumi Airport, and Xayaburi Dam construction project in Lao PDR. The lignite bottom ash resembles sand and can be used as the substitute of sand. The bottom ash which is finely ground as small particle has the property equivalent to fly ash. The synthetic gypsum can be used as raw material in the production of cement, construction, organic fertilizers, and soil improvement.

To enhance the leadership image in the electricity business and EGAT related business, EGAT has actively organized and participated in several power and energy technological seminars as follows:

Asia Power Week 2017

EGAT was entrusted to hold a booth under the theme of “EGAT: Innovate Power Solutions for a Better Life” in Asia Power Week 2017 organized during September 19-21, 2017 at the Bangkok International Trade and Exhibition Center in Bangkok.

Asia Power Week 2017 was the combination of 2 events, namely “Power-Gen Asia” and “Renewable Energy World Asia” where there were interesting agendas of over 50 topics and exhibitions in electricity generation technology and renewable energy of world leading companies. The event was attended by more than 8,000 participants from all over the world.

EGAT Energy Forum 2017

EGAT organized a technical seminar “EGAT Energy Forum 2017” under the theme of “Challenges to Innovation and Disruptive Technologies” on November 7, 2017 at Centra by Centara Government Complex Hotel and Convention Center, Bangkok. The seminar was presided over by Permanent Secretary of the Ministry of Energy, Mr. Thammayot Srichuai. The keynote speech on “Energy 4.0” was given by Dr. Twarath Sutabutr, Director - General of Energy Policy and Planning Office, and a special lecture on “Challenges to Innovation and Disruptive Technologies” by Mr. Kraisri Kannasutra, Energy Regulatory Commission. The event comprised dissemination of knowledge, experiences and information exchange on innovation in electricity generation and sales, fuel acquisition and services of EGAT such as operation and maintenance (O&M) between EGAT and independent power producers and those who are involved in electricity industry in Thailand.

In the transmission business, EGAT has exploited its human resources in EGAT related business. EGAT has provided telecommunication service to outside organizations in accordance with the regulations under the supervision of the Office of the National Broadcasting and Telecommunications Commission (NBTC) which has granted license to operate telecommunication type 3 to EGAT.

For the marketing development of telecommunication service which has a trend of continuous growth during the past years from the expansion of 3G, 4G, etc. coupled with the policy of digital economy concerning the infrastructure development, the transformation to innovation, and disruptive technology to move toward Thailand 4.0, EGAT will offer new services for the public and private sectors to meet their demands.

EGAT related business in transmission system maintenance consists of the testing of high voltage electrical equipment and transformer oil, engineering service, design, installation and inspection, communication service, maintenance of the substation and high voltage electrical equipment, maintenance of transmission lines, training, etc. EGAT cooperated in technical matters with its alliances in the private sector to provide readiness for its personnel in coping with new technology and offering service to the IPPs and SPPs.

The transmission system business is ready to “Innovate Power Solutions for a Better Life” in line with EGAT’s vision of electricity generation as the main mission and supported by EGAT related business for sustainable growth of the organization.

2.2 EGAT's Affiliates

EGAT has invested in electricity generation and energy-related businesses in the following five companies:

Subsidiary Companies

Ratchaburi Electricity Generating Holding Public Company Limited (RATCH)

Nature of Business

RATCH was established as a holding company on March 7, 2000. As a holding company, RATCH gets dividends from its invested companies as main revenue.

The company focuses mainly on investing and developing electricity generating business which concentrates on diversity of resources, ranging from natural gas, oil, coal, hydropower, and alternative energy, such as wind, solar power, etc. The company is also interested in expanding into related businesses such as operation and maintenance service for power plants, coal mining, investment in MRT projects, etc. The company is interested in joint ventures in various projects in Thailand and other countries.

At present, RATCH has the total capacity of 7,379.13 MW comprising 5,187.21 MW from domestic projects and 2,191.92 MW from overseas projects.

Shareholding

As of December 31, 2017, RATCH had a total registered capital of 1,450 million shares (equivalent to 14,500 million Baht). Its ownership structure is composed of 45 percent stakes held by EGAT and 55 percent stakes held by the general public.

EGAT International Company Limited (EGATi)

Nature of Business

EGATi was established by EGAT on December 18, 2007. EGATi aims to directly invest or set up subsidiaries to invest in power development projects in foreign countries in order to supply electricity back to Thailand. The company is interested in expanding investment in electricity business and other related businesses relevant to EGAT in order to create added value and to be beneficial to EGAT's business and Thailand.

At present, EGATi has a project under construction, i.e. Nam Ngiep 1 Power Co., Ltd. (NNP1PC) in Lao PDR and 2 projects in the process of development, i.e. Upper Salween Hydropower Development Project (Mai Tong) in Myanmar and Quang Tri 1 Thermal Power Development Project in Vietnam. Since 2016, EGATi has invested in the coal company Adaro Indonesia in 11.53 percent.

Shareholding

As of December 31, 2017, EGATi had a total registered capital of 1,219.74 million shares (12,197.4 million Baht). EGAT presently holds 99.99 percent stakes in EGATi.

EGAT Diamond Service Co., Ltd. (EDS)

Nature of Business

EGAT Diamond Service Co., Ltd. (EDS) is a joint venture business founded on December 15, 2009 by EGAT, Mitsubishi Heavy Industries, Ltd. (MHI), Mitsubishi Corporation (MC), and Ratchaburi Electricity Generating Holding Public Company Limited (RATCH). The objective of the company is to provide refurbishment work for the hot gas path parts of gas turbine in 18 countries which include Thailand, Malaysia, Singapore, Lao PDR, Myanmar, Vietnam, Cambodia, Brunei, Australia, New Zealand, India, Pakistan, Bangladesh, Sri Lanka, Bhutan, Nepal, Afghanistan, and Maldives.

In 2015, as a result of business restructuring of MHI, all of its shares have been transferred to Mitsubishi Hitachi Power System Ltd. (MHPS). In 2016, MHPS has been restructured and has founded Mitsubishi Hitachi Power Systems Asia Pacific Pte. Ltd. (MHPS-AP) to be representative for MHPS's business operation in the Southeast Asia Region. Shares of MHPS in EDS have been transferred to MHPS-AP.

The Gas Turbine Refurbishment Service Center which is located in Navanakorn Industrial Estate, Pathum Thani Province has started its operation in May 2011.

Shareholding

As of December 31, 2017, EDS had a total registered capital of 6.23 million shares (623 million Baht). Its ownership structure is composed of EGAT, MHPS-AP, MC, and RATCH with the portion of 45 percent, 30 percent, 15 percent, and 10 percent stakes respectively.

Associated Company

Electricity Generating Public Company Limited (EGCO)

Nature of Business

EGCO was established as a holding company by EGAT on May 12, 1992. Its revenues are mainly from dividends of subsidiaries and associated companies.

EGCO focuses mainly on generating and selling electricity to EGAT and other domestic customers as well as customers in ASEAN countries under the long-term Power Purchase Agreement (PPA). The company also provides a variety of energy-related services. Business of EGCO can be categorized into 5 groups as follows:

- 1) Independent Power Producer (IPP)
- 2) Small Power Producer (SPP)
- 3) Very Small Power Producer (VSPP)
- 4) Overseas Power Producer
- 5) Other business groups which are operation and maintenance companies (O&M), water supply companies, power plant management, and mines.

At present, EGCO has a total generating capacity of 5,535.88 MW consisting of 3,318.31 MW from domestic projects and 2,217.57 MW from overseas projects.

Shareholding

As of December 31, 2017, EGCO had the total registered capital amounting to 530 million shares (5,300 million Baht) of which 526.465 million shares (5,264.65 million Baht) were issued and paid-up. EGCO's shareholders are EGAT 25.41 percent, TEPDIA Generating B.V. 23.94 percent, and the general public 50.65 percent.

Joint Venture

District Cooling System and Power Plant Co., Ltd. (DCAP)

Nature of Business

DCAP is a joint venture business founded on April 2, 2003 by EGAT, PTT Public Company Limited (PTT), and Metropolitan Electricity Authority (MEA). The objective of the company is to generate and sell electricity and cooling water to the Suvarnabhumi International Airport.

At present, DCAP is under the development project for construction of new cooling water plant in support of the Suvarnabhumi International Airport Phase 2.

Shareholding

As of December 31, 2017, DCAP had a total registered capital of 167 million shares (1,670 million Baht). Its ownership structure is composed of EGAT, PTT, and MEA with the portion of 35 percent, 35 percent, and 30 percent stakes respectively.

EGAT’s Investment in Its Affiliates

Company	Registered capital (million Baht)	Ownership %	Status
Ratchaburi Electricity Generating Holding Public Company Limited (RATCH) 8/8 Moo 2, Bang Khane Sub-district, Mueang District, Nonthaburi Province 11000 Tel: +66 (0) 2794 9999 Fax: +66 (0) 2794 9998 Website: www.ratch.co.th	14,500	45	Subsidiary Company
EGAT International Company Limited (EGATi) 53 Moo 2, Charansanitwong Road, Bang Kruai Sub-district, Bang Kruai District, Nonthaburi Province 11130 Tel: +66 (0) 2436 6900 Fax: +66 (0) 2436 6957 Website: www.egati.co.th	12,197.4	99.99	Subsidiary Company
EGAT Diamond Service Co., Ltd. (EDS) 56/25 Moo 20, Khlong Nueng Sub-district, Khlong Luang District, Pathum Thani Province 12120 Tel: +66 (0) 2529 0800 Fax: +66 (0) 2529 0900 Website: www.egatdiamond.co.th	623	45	Subsidiary Company
Electricity Generating Public Company Limited (EGCO) EGCO Tower 222 Moo 5, Vibhavadi Rangsit Road, Thungsonghong Sub-district, Lak Si District, Bangkok Province 10210 Tel: +66 (0) 2998 5000 Fax: +66 (0) 2998 0956-9 Website: www.egco.com	5,300	25.41	Associated Company
District Cooling System and Power Plant Co., Ltd. (DCAP) 222 Moo 1, Nong Prue Sub-district, Bang Phli District, Samut Prakan Province 10540 Tel: +66 (0) 2327 4242 Fax: +66 (0) 2327 4244 Website: www.dcap.co.th	1,670	35	Joint Venture

Analysis of Operating Results and Financial Position

1) Analysis of Operating Results of EGAT and its Subsidiaries

Operating results of EGAT and its subsidiaries for the years ended December 31, 2017 and 2016 are summarized as follows:

Operating Results	2017	2016 (Adjusted)	Increase / (Decrease) 2017-2016		2015 (Adjusted)
	Million Baht	Million Baht	Million Baht	Percentage	Million Baht
Revenue from sales and services	494,119.47	496,883.00	(2,763.53)	(0.56)	546,480.33
Revenue from electric energy sales	490,826.01	489,536.08	1,289.93	0.26	531,713.22
Revenue from sales of other goods and services	3,293.46	7,346.92	(4,053.46)	(55.17)	14,767.11
Cost from sales and services	401,661.90	401,259.81	402.09	0.10	457,447.62
Cost of electric energy sales	400,005.64	395,636.63	4,369.01	1.10	444,399.73
Cost of sales of other goods and services	1,656.26	5,623.18	(3,966.92)	(70.55)	13,047.89
Gross profit	92,457.57	95,623.19	(3,165.62)	(3.31)	89,032.71
Other income	17,621.64	4,762.24	12,859.40	270.03	3,417.40
Profit before expenses	110,079.21	100,385.43	9,693.78	9.66	92,450.11
Selling expenses	216.69	201.43	15.26	7.58	190.53
Administrative expenses	16,091.47	16,237.63	(146.16)	(0.90)	16,675.73
Other expenses	87.66	18.54	69.12	372.82	12,010.33
Operating income	93,683.39	83,927.83	9,755.56	11.62	63,573.52
Share of profit from investments in associates and joint ventures	7,987.71	5,435.42	2,552.29	46.96	2,369.35
Profit before finance costs and income tax expenses	101,671.10	89,363.25	12,307.85	13.77	65,942.87
Finance costs	41,130.02	41,703.96	(573.94)	(1.38)	31,685.73
Income tax expenses	1,498.31	879.90	618.41	70.28	1,407.72
Net Profit for the year	59,042.77	46,779.39	12,263.38	26.22	32,849.42
Net profit - Non-controlling interests	3,279.47	3,336.72	(57.25)	(1.72)	1,579.00
Net Profit - Owners of EGAT	55,763.30	43,442.67	12,320.63	28.36	31,270.42

For operating results for the year ended December 31, 2017, EGAT and its subsidiaries recorded a net profit of Baht 55,763.30 million, increasing by Baht 12,320.63 million or 28.36% from the year 2016. The details are as follows:

1.1 Analysis of revenue from electric energy sales

For the year ended December 31, 2017, revenue from electric energy sales, which is the primary source of revenue of EGAT and its subsidiaries, amounted to Baht 490,826.01 million, increased by Baht 1,289.93 million or 0.26% from Baht 489,536.08 million in 2016. The higher sales revenue which was mainly attributable to the volume of electric energy sales of EGAT and its subsidiaries for the year ended December 31, 2017 increased by 85.67 million kWh or 0.05% to 185,128.10 million kWh, compared with 185,042.43 million kWh in 2016 and the price of electric energy sales increased by Baht 0.005 per kWh from Baht 2.646 per kWh in 2016 to Baht 2.651 per kWh in 2017.

1.2 Analysis of cost of electric energy sales

For the year ended December 31, 2017, the cost of electric energy sales of EGAT and its subsidiaries increased from the prior year by Baht 4,369.01 million. The details are as follows:

Costs of Electric Energy Sales	2017	2016 (Adjusted)	Increase / (Decrease)	
	Million Baht	Million Baht	Million Baht	Percentage
Electric energy purchased	143,253.48	119,924.67	23,328.81	19.45
Fuel cost	187,177.22	209,592.99	(22,415.77)	(10.69)
Generating expenses	58,081.12	54,891.24	3,189.88	5.81
Transmission expenses	11,493.82	11,227.73	266.09	2.37
Total	400,005.64	395,636.63	4,369.01	1.10

1.2.1 Electric energy purchased

Electric energy purchased as shown in the statements of income for the year ended December 31, 2017, which is a part of the purchase of electricity from power plants that does not qualify as a finance lease under Accounting Standard No.17: Leases, increased by Baht 23,328.81 million or 19.45%. The increase was mainly attributable to an increase of electric energy purchased from foreign countries and small power producers (SPP).

1.2.2 Fuel cost

Fuel cost as shown in the statements of income for the year ended December 31, 2017 included fuel cost of power plants under the power purchase agreements which qualified as financial leases according to Accounting Standard No. 17: Leases. The details are as follows:

Fuel Cost	2017	2016 (Adjusted)	Increase / (Decrease)	
	Million Baht	Million Baht	Million Baht	Percentage
Fuel cost of EGAT and its subsidiaries	107,526.82	126,263.24	(18,736.42)	(14.84)
Fuel cost under finance leases	79,650.40	83,329.75	(3,679.35)	(4.41)
Total	187,177.22	209,592.99	(22,415.77)	(10.69)

The volume of electricity produced by EGAT and its subsidiaries amounted to 79,184.81 million kWh, decreasing from the prior year by 8,809.73 million kWh from 87,994.54 million kWh in 2016. The details of fuel consumption in 2017 are as follows:

Fuel	2017	2016 (Adjusted)	Increase / (Decrease)	
	Million Unit	Million Unit	Million Unit	Percentage
Natural gas (MBTU)	409.45	493.38	(89.93)	(17.01)
Heavy oil (liter)	51.76	178.72	(126.96)	(71.04)
Diesel oil (liter)	43.59	42.27	1.32	3.12
Lignite (ton)	15.90	16.41	(0.51)	(3.11)

The fuel cost of EGAT and its subsidiaries amounted to Baht 107,526.82 million, decreasing from the prior year by Baht 18,736.42 million or 14.84%. The details of fuel cost are as follows:



Fuel	2017	2016 (Adjusted)	Increase / (Decrease)	
	Million Baht	Million Baht	Million Baht	Percentage
Natural gas	95,737.46	113,290.05	(17,552.59)	(15.49)
Heavy oil	618.07	1,975.88	(1,357.81)	(68.72)
Diesel oil	880.06	895.68	(15.62)	(1.74)
Oil fuel adjustment	3.90	0.60	3.30	550.00
Lignite	10,287.33	10,101.03	186.30	1.84
Total	107,526.82	126,263.24	(18,736.42)	(14.84)

The decrease of fuel cost was mainly attributable to the lower proportion of electricity generating of EGAT compared with the whole generating as 32.19% (35.86% for the year 2016), while EGAT purchased the higher proportion of electricity from the domestic and foreign power producers as 67.81% (64.14% for the year 2016).

1.3 Revenue and cost of sales of other goods and services

Revenue and cost of sales of other goods and services were mainly derived from revenue from fuel providing, operation and maintenance services, engineering and construction consulting services and telecommunication services.

For the year 2017, EGAT and its subsidiaries recorded the revenue from sales of other goods and services in the amount of Baht 3,293.46 million, decreasing from the prior year by Baht 4,053.46 million or 55.17%, and the cost of sales of other goods and services in the amount of Baht 1,656.26 million, decreasing from the prior year by Baht 3,966.92 million or 70.55%. The main reason was that there was no revenue and cost of fuel providing in the year 2017, while there were the same amount of the revenue and cost of fuel providing totaled Baht 4,122.84 million in the year 2016.

1.4 Other income

Other income for the year ended December 31, 2017 totaled Baht 17,621.64 million, increasing from the year 2016 by Baht 12,859.40 million or 270.03%, mainly due to an increase in gain on exchange rates under finance leases - power plants in the amount of Baht 12,008.27 million and gain on exchange rates in the amount of Baht 978.12 million.

1.5 Other expenses

Other expenses for the year ended December 31, 2017 totaled Baht 87.66 million, increasing from the prior year by Baht 69.12 million or 372.82%. The increase was mainly attributable to loss on goodwill impairment of Ratchaburi Electricity Generating Holding Pcl. in the amount of Baht 40.83 million and increase in loss on disposal of assets of EGAT in the amount of Baht 11.86 million.

1.6 Share of profit from associated company of EGAT and share of profit from joint ventures of subsidiaries by using the equity method

For the year ended December 31, 2017, share of profit under the equity method totaled Baht 7,987.71 million, increasing from the prior year by Baht 2,552.29 million or 46.96% which consisted of an increase in share of profit from associated company by Baht 1,839.47 million and an increase in share of profit from joint ventures of subsidiaries by Baht 712.82 million.

1.7 Income tax expenses

For the year ended December 31, 2017, the income tax expenses of Ratchaburi Electricity Generating Holding Pcl. and EGAT International Co., Ltd. amounted to Baht 1,498.31 million, increasing from the prior year by Baht 618.41 million or 70.28%.

2) Analysis of Financial Position of EGAT and its Subsidiaries

Financial Position	Dec 31, 2017	Dec 31, 2016 (Adjusted)	Increase / (Decrease)		Dec 31, 2015 (Adjusted)
	Million Baht	Million Baht	Million Baht	Percentage	Million Baht
Total assets	986,306.23	963,019.88	23,286.35	2.42	876,492.83
Total liabilities	555,291.97	559,964.79	(4,672.82)	(0.83)	495,819.64
Owners' equity of EGAT and its subsidiaries	395,883.63	368,371.86	27,511.77	7.47	347,102.25
Non-controlling interests	35,130.63	34,683.23	447.40	1.29	33,570.94

As at December 31, 2017, the total assets of EGAT and its subsidiaries increased by Baht 23,286.35 million, mainly due to the following reasons:

- An increase in work under construction of Baht 28,316.70 million mainly resulted from increasing in Mae Moh Power Plant units 4 - 7 Replacement Project and the Transmission System Expansion Project.
- An increase in cash and cash equivalents of Baht 4,469.40 million mainly resulted from an increase in cash in banks - current and saving accounts in the amount of Baht 5,343.42 million and an increase in fixed deposit receipts in the amount of Baht 824.26 million while fixed deposits not more than 3 months decreased by Baht 1,697.14 million.
- An increase in net other accounts receivable of Baht 3,793.13 million mainly resulted from an increase in advances and prepaid of Baht 2,895.16 million and an increase in other accounts receivable of Baht 636.06 million.

- An increase in intangible assets of Baht 3,136.44 million largely resulted from an increase in land rights during the year of Baht 3,597.46 million.
- An increase in temporary investment of Baht 3,044.74 million largely resulted from an increase in government bonds more than 3 months of Baht 9,996.17 million while fixed deposits not more than 12 months decreased by Baht 4,388.53 million.
- A decrease in finance lease assets - power plants of Baht 18,130.36 million mainly due to depreciation.

As at December 31, 2017, the total liabilities of EGAT and its subsidiaries totaled Baht 555,291.97 million, decreasing by Baht 4,672.82 million, mainly detailed as follow:

- Finance lease liabilities - Power plant and current portion decreased by Baht 28,749.54 million due to the repayment according to the agreement.
- Short - term loans decreased by Baht 3,800.00 million because of repayment of Ratchaburi Electricity Generating Holding Pcl.'s short - term loans from financial institutions in the amount of Baht 3,800.00 million.
- Deferred revenue for electricity compensation decreased by Baht 2,578.15 million mainly because the Energy Regulatory Commission approved EGAT to discount deferred revenue for electricity compensation in the amount of Baht 2,648.00 million in calculation of Automatic Tariff Adjustment (Ft) on May 3, 2017.
- Long - term loans increased by Baht 15,562.25 million mainly due to an increase in long - term loans from financial institutions in the amount of Baht 11,700.00 million, an increase in EGAT bonds in the amount of Baht 3,000.00 million and an increase in foreign sources loans of Ratchaburi Electricity Generating Holding Pcl. in the amount of Baht 2,208.69 million.
- Accounts payable increased by Baht 3,840.13 million, mostly from an increase in trade accounts payable of electricity purchased payable and fuel cost in the amount of Baht 15,637.00 million. However, trade accounts payable - related parties decreased by Baht 6,500.24 million and trade accounts payable - others decreased by Baht 5,328.61 million.

As at December 31, 2017, owners' equity of EGAT and its subsidiaries totaled Baht 395,883.63 million, increasing by Baht 27,511.77 million, as shown in the following details.

- For the year ended December 31, 2017, the net profit of EGAT and its subsidiaries totaled Baht 55,763.30 million.
- A decrease in other components of equity in the amount of Baht 1,948.90 million.
- Remittance to the Ministry of Finance totaled Baht 26,227.24 million.

3) Analysis of Cash Flow

As at December 31, 2017, cash and cash equivalents of EGAT and its subsidiaries amounted to Baht 70,955.11 million, increasing from December 31, 2016 by Baht 4,469.40 million. The major reasons are as follows:

	Million Baht
Cash and cash equivalents as at Dec 31, 2016 (Restated)	66,485.71
Net cash inflows from operating activities	129,279.42
Net cash outflows from investing activities	(54,163.60)
Net cash outflows from financing activities	(70,544.18)
Other effects from cash and cash equivalents	(102.24)
Cash and cash equivalents as at December 31, 2017	70,955.11

In 2017, net cash inflows from operating activities totaled Baht 129,279.42 million which was derived from profit before income taxes of Baht 60,541.08 million, adjusted by non - cash items in statements of income, such as depreciation and gain/(loss) on exchange rates etc. totaling an increase of Baht 69,403.13 million. Besides, changes in working capital resulted in an increase in cash of Baht 399.91 million, cash receipts on interest of Baht 696.60 million and cash payment on income tax expenses totaled Baht 1,761.30 million.



Net cash outflows from investing activities amounted to Baht 54,163.60 million, consisting of investments for the construction of power plant projects, transmission system, and construction projects and durable goods including interests for construction totaling Baht 55,972.97 million, an increase in current investments in the amount of Baht 3,087.75 million, an increase in investments in associates and joint ventures of subsidiaries in the amount of Baht 1,626.30 million, cash receipts on dividend in the amount of Baht 6,719.25 million and cash receipts on interest in the amount of Baht 465.19 million.

Net cash outflows from financing activities totaled Baht 70,544.18 million, comprising of cash payment on interest under finance leases - Power plants of Baht 36,756.14 million, remittance to the Ministry of Finance of Baht 22,436.92 million, a decrease in finance lease liabilities - Power plants in the amount of Baht 16,080.82 million, repayment of loans of Baht 7,260.53 million, cash payment on finance costs in the amount of Baht 4,288.22 million, dividend paid to non - controlling interests of subsidiaries of Baht 3,478.90 million and cash receipts from long - term loans of Baht 20,247.61 million.

4) Financial Ratios

Based on the operating performance and financial position for the years ended December 31, 2017 and 2016, the financial ratios of EGAT and its subsidiaries are as follows:

	2017	2016
Liquidity Ratios		
Current ratio (time)	1.38	1.46
Quick ratio (time)	1.29	1.36
Cash ratio (time)	1.00	1.16
Profitability Ratios		
Ratio of gross profit to net sales (percentage)	18.71	19.24
Ratio of net profit to net sales (percentage)	11.95	9.41
EBITDA (Million Baht)	126,588.09	129,507.80
Efficiency Ratios		
Rate of return on assets (percentage)	6.06	5.09
Rate of return on fixed assets (percentage)	37.23	33.01
Total assets turnover (time)	0.53	0.55
Financial Policy Ratios		
Debt to equity ratio (time)	1.29	1.39
Times interest earned (time)	2.47	2.14
Fixed charge coverage (cash basis) (time)	1.83	1.68

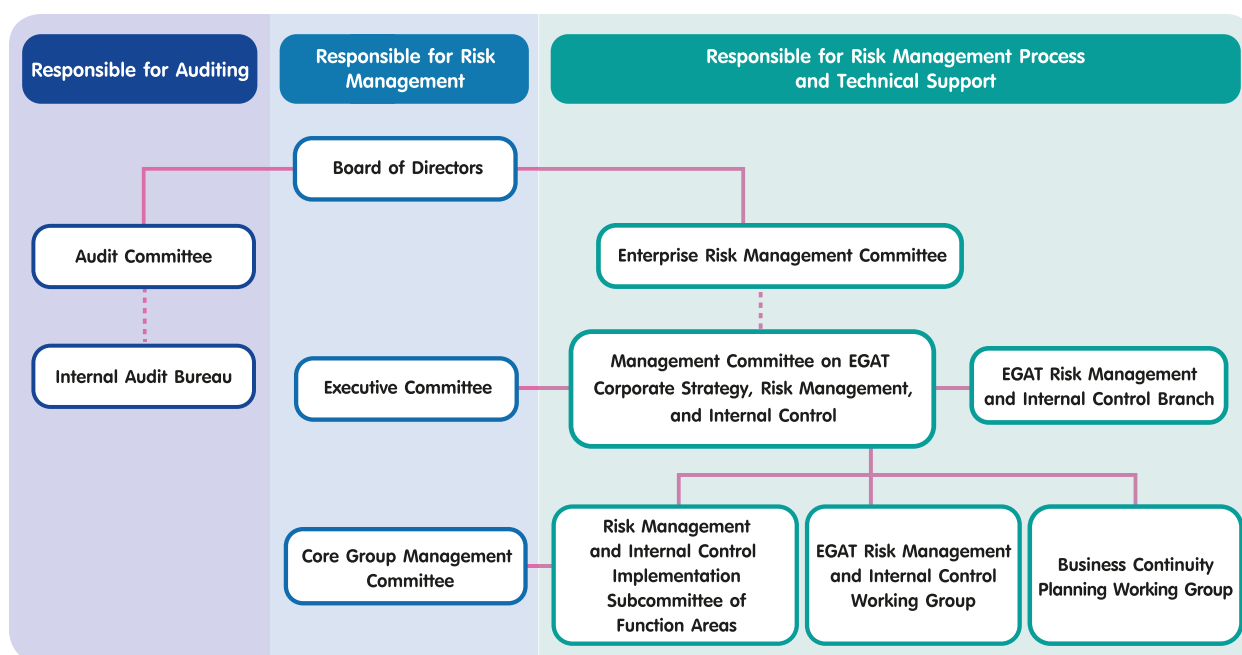
Enterprise Risk Management

EGAT has committed to complying its enterprise risk management with the international standard of the Committee of Sponsoring Organizations of Treadway Commission - Enterprise Risk Management System (COSO-ERM) and the guideline set forth by the State Enterprise Policy Office, Ministry of Finance. The same standard is applicable to all units of EGAT. Being a part of the corporate culture, risk management is the responsibility of all employees. EGAT has continuously improved its enterprise risk management processes since 2005 and has applied information technology system in risk management to assure that the enterprise risk management which could compromise its achievement of the objective and/or the opportunity in building competitiveness is appropriate and systematic.

EGAT enterprise risk management processes are linked with corporate objectives. The key risk indicators (KRI) have been defined to cover all important risk factors and managed/controlled

within the risk appetite which is not higher than the risk tolerance. The risk factors have been monitored with readiness to take on risks inherent to all aspects of its operations with efficiency and effectiveness. The risk management is reported continuously and regularly to the Risk Management Committee (RMC) appointed by EGAT Board of Directors which is responsible for EGAT's risk management.

Moreover, EGAT Governor has appointed the Committee on Corporate Strategy, Risk Management, and Internal Control to be responsible for the sufficiency and effectiveness of the risk management plans/measures and the effectiveness of the EGAT's risk management system. The above mentioned committee has appointed two working groups consisting of the Working Group on Risk Management and Internal Control to be responsible for introducing risk management method and/or approach and the Working Group on Business Continuity Planning which is responsible for introducing business continuity management to the committee.



Risk Management in 2017

In risk management, EGAT has considered internal and external factors which could compromise its vision and mission. Risk appetite and risk tolerance have been defined to provide a framework for determining corporate strategies and integrating risk management process with its strategic objectives to ensure the success of EGAT's strategies. In 2017, EGAT carried out risk management in 4 aspects, namely Strategic and Corporate Risk, Financial Risk, Operational Risk, and Compliance Risk. The results of the operation can be summarized as follows:

1. Strategic and Corporate Risk

Having an aim to become a world leading utility, EGAT has been focusing on increasing its capability in power generation and transmission and promoting its growth through related business. In 2017, risk assessment and risk management plan as well as risk follow-up were carried out closely and continuously. EGAT could operate its mission well as planned. Several risk factors such as the world economy and the trend of related electricity business were considered to ensure that EGAT could achieve its strategic plan for stability, continued growth, and sustainability to the organization and the country.

2. Financial Risk

Financial risk management has been undertaken by EGAT in an effort to maintain its financial stability to ensure that EGAT will have adequate investment capable for the future power generation and transmission system projects and related business. EGAT gives importance to current investment management to have efficient liquidity

by providing sufficient amount of current investment to meet the need of EGAT growth. Furthermore, cash flow management has been planned in advance in order to have the efficient use of cash flow to reduce the risk and save production cost.

3. Operational Risk

In order to manage operational risks, EGAT has prepared itself to take on risks inherent to all aspects of its operations, including electricity generation and transmission, construction of power plant and transmission system according to the Power Development Plan (PDP), related business, and matters concerning employees, community, environment, and public communication regarding EGAT's operation.

In 2017, EGAT prepared plans and measures on risk management taking into account operational risks concerning the attempt to increase the efficiency in power generation, transmission, and related business. EGAT risk management plan and measures have resulted in a higher efficiency of EGAT's power plants and transmission system close to the international level and EGAT's capability in accessing the upstream business and renewable power plant development.

4. Compliance Risk

EGAT has given attention to the compliance with all relevant laws and regulations concerning EGAT's operation and anti-corruption. In risk management, EGAT has plans and measures to prevent and reduce impact from non-compliance as well measures concerning anti-corruption which are strictly applicable throughout the organization.

Internal Control

Principles/Guidelines

EGAT's internal audit system is in accordance with the Standard Rule of State Audit, B.E. 2544 (2001) of the State Audit Commission (SAC) which is implemented throughout the organization. The Annual Audit Report has been prepared and submitted to EGAT Internal Audit Committee for consideration of the sufficiency and appropriateness before the submission to EGAT Board of Directors for endorsement and forwarding to the State Audit Commission within March every year.

Internal Audit Report of 2017

EGAT has evaluated the internal audit system in accordance with the Standard Rule of State Audit to ensure that EGAT's mission is achieved with effectiveness and efficiency in terms of resources utilization, protection and maintenance of assets, prevention of error, damages, misconduct, reliability of financial and non-financial reports, and compliance with laws, rules, and regulations. The results of the evaluation of the 5 components of internal audit are summarized as follows:

1. Audit Environment

EGAT has given importance to the management of audit environment. The executives adhere to the principles of corporate governance so that the operation can achieve the objectives of the organization with efficiency, transparency, fairness, and traceability. The executives have good attitude towards internal audit and promote EGAT employees to be conscious of honesty, ethics, and accountability as well as having good behavior. Assignments of authority and responsibility have been given to the sub-committees as necessary for implementation with appropriateness to achieve the objectives.

EGAT has defined its corporate values to be SPEED so that EGAT would be the organization with strong corporate value and culture. SPEED comprises S: Sense of belonging, P: Performance Excellence, E: Ethics and Integrity, E: Enthusiasm for Innovation, and D: Devotion to Society. EGAT has stimulated, pushed, and promoted all employees to follow the corporate values and integrate them to other working systems.

EGAT has restructured the organization and line of command clearly and appropriately with the assignment of authority and responsibility in written statement. Revisions have always been made to the changing situation. The line of Deputy Governor for Renewable and New Energy has been established to respond to the trend of power generation from renewable energy as well as the line of Deputy Governor for Legal Affairs and Corporate Governance to administer the legal affairs completely based on a code of ethics and good governance.

2. Risk Assessment

EGAT has defined its vision "Innovate Power Solutions for a Better Life" and the main strategies as the framework for carrying out its mission. Risk management has been focused to prevent the impact to the achievement of the organization. Risk assessment based on the COSO-ERM principles is applied throughout the organization under the supervision of the Enterprise Risk Management Committee. The Committee is responsible for supervision, setting policy, setting risk appetite and risk tolerance, and analyzing internal and external factors in relation to the corporate plan. Monitoring and assessment are carried out quarterly.

Moreover, Risk Management System Program: RMS has been implemented to support risk management including the use of Early Warning System to respond in time to other risks caused by the rapidly changing situation.

3. Audit Activities

Policies and complete procedures for all EGAT work have been established to protect or minimize the damages or mistakes which may arise. In order to achieve the objectives of internal control, EGAT has set up activities to improve the production efficiency and plans for efficiency improvement by Lean System to achieve the strategy of excellent operation. Furthermore, the plan for Model Plant Control Tower has been prepared which will bring about sustainable performance to the organization.

4. Information and Communication

Financial and non-financial information system and complete database management system are available. The data to be used are up-to-date and easily accessible. The Information Technology Committee of EGAT has been established to be responsible for the information system management, preparation of the master plan, and implementation of the standard on information security. The information system is available to support the decision-making of the executives. Various channels of information system are available and accessible in normal situation and in time of emergency. EGAT has secure information technology system which can give continuous service despite the time of threat or crisis with the result of surveillance audit by the certification body of EGAT computer center as complying with ISO/IEC 27001. Moreover, a lecture has been organized to create an awareness on the security of information use.

5. Assessment

Assessment has been conducted continuously and regularly in the course of major operation. Assessment for each activity has been

carried out, and the control self-assessment (CSA) has been conducted for every operational line in integration with the risk assessment which has been carried out quarterly. Independent Assessment (IA) is also conducted by the Internal Audit Bureau and the Office of the General Auditor of Thailand. State Enterprise Performance Appraisal (SEPA) has been conducted continuously on a yearly basis to maintain the leadership in electricity business and to be a model for other enterprises. However, EGAT focuses on the assessment of practice and gives importance to continuous development.

In conclusion, EGAT has carried out the complete internal audit system covering 5 components in accordance with the regulation of the State Audit Commission throughout the organization with effectiveness, sufficiency, and appropriateness to fulfill the objectives of the internal audit.



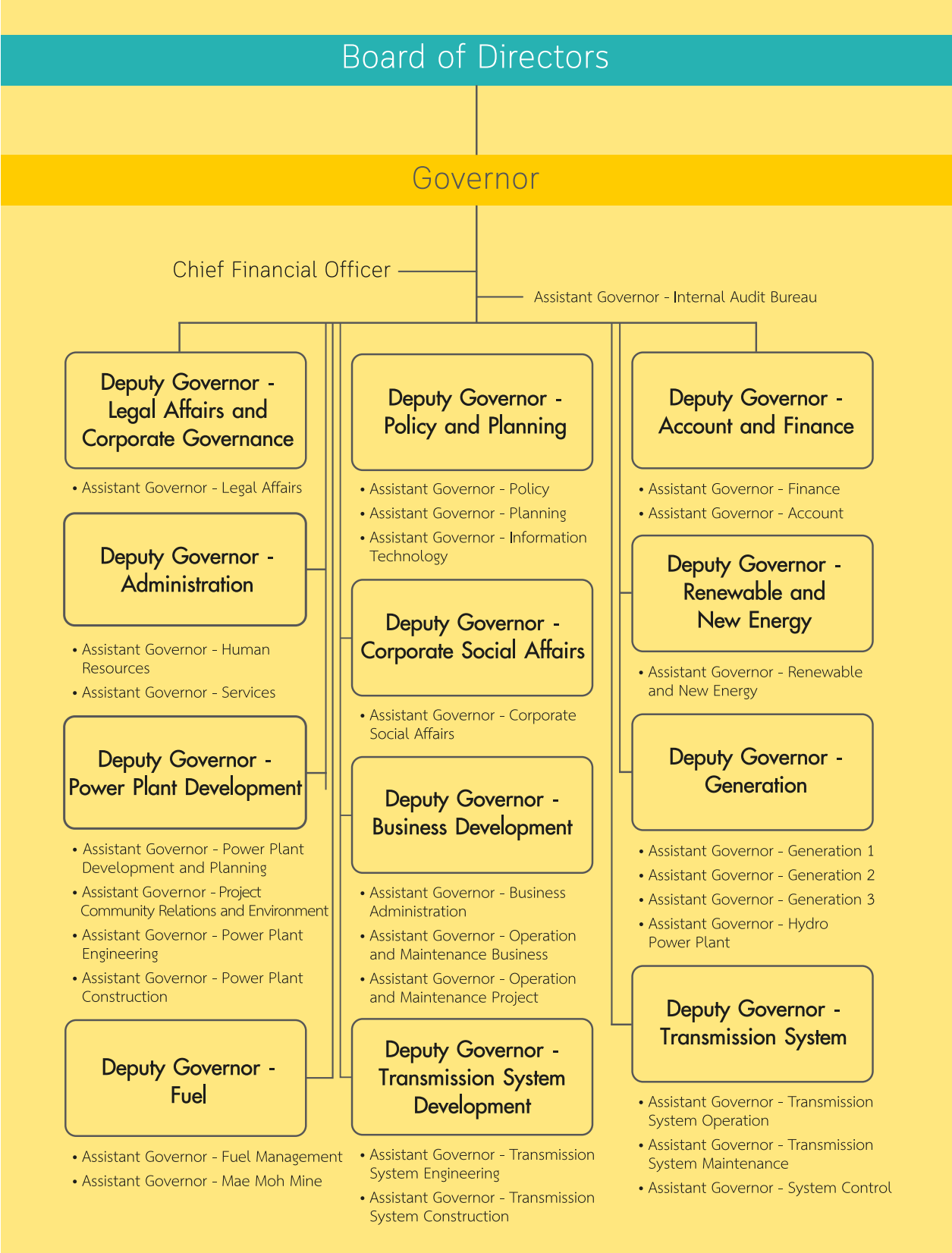
Smart City

EGAT is in the process of developing its headquarters area in Nonthaburi Province into a “Smart City” or “EGAT Eco Plus+” which is designed to give balance between the power plant, nature, and community. It is also the combination of the use of resources, environmental conservation, and the use of renewable energy leading to the efficient and sustainable use of energy. It is estimated that the smart city will be completed by 2022.





Organization Chart





Structure of Organizational Management

EGAT undertakes its mission in accordance with the EGAT Act, B.E. 2511 (1968). The responsibility and the role of the Board of Directors and the EGAT executives are clearly distinguished. The main role of EGAT Board of Directors is to supervise the administration, to make decision, and to set policy and strategy of EGAT, whereas the responsibility of EGAT executives is to set policy and administer the work of EGAT. However, to provide a link between the supervision and the administration, EGAT Governor which is the top management of EGAT, is appointed by the Board of Directors to be an ex-officio member and secretary of the Board of Directors.

1. Board of Directors

1.1 Composition, Qualifications, and Criteria for Appointment

The EGAT Board of Directors is appointed by the resolution of the cabinet. The Board of Directors comprises Chairman and not more than 10 other members including EGAT Governor who serves as an ex-officio member. The Board of Directors must have qualification in accordance with the provision of the EGAT Act, B.E. 2511 (1968).

1.2 Authority and Responsibilities

- Lay down rules and regulations
- Establish EGAT's vision and policies and be accountable for the performance of EGAT Management
- Review and approve significant policies and strategies including financial objectives, corporate social responsibility and environmental conservation, and other EGAT's plans as well as monitor the performance of EGAT Management regularly
- Ensure the reliability of the accounting system, financial statements, and auditing. Oversee the availability of the assessment process for the appropriateness of internal control and internal audit to ensure its effectiveness and efficiency. Ensure the effectiveness of the risk management, financial report, and monitoring
- Oversee and address conflicts of interest issues which may occur among the executives, members of Board of Directors, and employees as well as monitor the misuse of EGAT's property and investigate misconduct of the members of Board of Directors, executives, and employees
- Ensure that the existing structure and practices of EGAT Board of Directors comply with the principles of corporate governance and ethical standard
- Monitor the appropriateness of human resources management in terms of position classification and manpower
- Evaluate the performance of EGAT Governor and review EGAT's plan regularly

1.3 Independence of Board of Directors

In 2017, EGAT Board of Directors comprised 6 independent members from outside organizations having freedom in decision-making and in making comments. Out of the above mentioned 6 members, 5 members were from Director's Pool. The Principles and Guidelines for Corporate Governance for State Enterprise 2009 issued by the State Enterprise Policy Office (SEPO), Ministry of Finance specifies that at least one third of the members of the Board of Directors should be the independent outsiders so as to have real freedom in decision-making, and the number of independent members should be sufficient to ensure that their comments are heard

by the meeting. The independent members should have specific knowledge which is beneficial for the state enterprise, and at least one of them should be appointed from the list of members of State Enterprises' Boards of Directors prepared by the Ministry of Finance. Moreover, the Act on Standards for Qualification of Board of Directors Members and Employees of State Enterprises, B.E. 2518 (1975), Article 12/1 specifies that other than the ex-officio member, at least one third of members should be appointed from the list of members of State Enterprises' Boards of Directors (Director's Pool-DP) prepared by the Ministry of Finance.

1.4 Members of the Board of Directors

No.	Name	Position	Independent member	Director's Pool (DP)
1	Mr. Areepong Bhoocha-Oom	Chairman/Former Permanent Secretary of Energy		✓
2	Mr. Apichart Chinwanno	Director/Former Permanent Secretary of Foreign Affairs	✓	✓
3	Mr. Poramettee Vimolsiri	Director/Secretary-General, National Economic and Social Development Board	✓	✓
4	Mr. Chuan Sirinuntporn	Director/Former Director General, Department of Provincial Administration	✓	✓
5	General Walit Rochanapakdee	Director/Former Deputy Commander in Chief, Royal Thai Army	✓	
6	Mr. Witoon Kulcharoenwirat	Director/Director General, Department of Energy Business		✓
7	Mr. Sutat Patmasiriwat	Director/Former EGAT Governor	✓	✓
8	Mr. Distat Hotrakitya	Director/Secretary General, Office of the Council of State	✓	✓
9	Mr. Chumpol Rimsakorn	Director/Representative of Ministry of Finance/ Deputy Permanent Secretary of Finance		
10	Mr. Kornrasit Pakchotanon	Director (Ex-officio) and Secretary/EGAT Governor		✓

Remark: No.1 resigned from the position of Chairman of EGAT Board of Directors on December 31, 2017

2. Board Committees

The Board of Directors has appointed 12 Board Committees to scrutinize important issues.

The 9 committees to scrutinize important issues are Executive Committee, Audit Committee, Enterprise Risk Management Committee, Corporate Governance and Social Responsibility Committee, Law and Regulation Compliance Committee, Human Resources Committee, Deputy Governor and Assistant Governor Nomination Committee, Advisor and Expert Nomination Committee, and EGAT Labor Relations Committee.

The 3 ad hoc committees consist of EGAT Governor Nomination Committee, EGAT Governor’s Remuneration Subcommittee, EGAT Governor’s Performance Evaluation Subcommittee.

2.1 Executive Committee

Duties and Responsibilities

- Consider and approve the Term of Reference (TOR) and procurement of supplies within the value limits not exceeding 700 million Baht which is beyond the approval authority of EGAT Governor and consider those over 700 million Baht for submission to the Board of Directors
- Propose guidelines and recommendations concerning procurement for the purpose of transparency and for the best interest of EGAT
- Consider and screen all issues concerning EGAT’s financial and investment policies and plans as well as annual budget of EGAT and recommend the financial and investment strategies that will be beneficial to EGAT
- Consider and approve EGAT’s master plan for information technology and communication
- Consider and screen EGAT regulations and approve financial support to the people affected by the construction of transmission network system within the value limits exceeding 4 million Baht but not exceeding 10 million Baht/time/person
- Consider and screen the appeals concerning the seizure of the security in the procurement by an e-auction bidding in which the value of the security does not exceed 50 million Baht
- Consider other issues assigned by EGAT Board of Directors

Members of the Executive Committee (January 1 - December 31, 2017)

No.	Name		Position
1	Mr. Witoon	Kulcharoenwirat	Chairman
2	Mr. Chuan	Sirinuntporn	Member
3	General Walit	Rochanapakdee	Member
4	Mr. Sutat	Patmasiriwat	Member
5	Mr. Kornrasit	Pakchotanon	Member (Ex-officio) and Secretary

2.2 Audit Committee

Duties and Responsibilities

- Review the reliability of financial statements and financial reports
- Review the efficiency and effectiveness of EGAT's internal control procedure, risk management procedure, internal audit, information technology system, and corporate governance
- Monitor the observance of laws, rules, regulations, and orders
- Consider the linkage of items or items which may have conflict of interests
- Review the structure and operation of the Internal Audit Bureau as well as approve the Annual Audit Plan
- Consider, in consultation with EGAT Governor, the appointment, transfer, and performance evaluation of the Assistant Governor - Internal Audit Bureau
- Ask for the Management team or employees concerned to give opinions or attend the meeting or submit the papers needed for review

Members of the Audit Committee (January 1 - December 31, 2017)

No.	Name	Position
1	Mr. Poramatee Vimolsiri	Chairman
2	Mr. Apichart Chinwanno	Member
3	Mr. Chumpol Rimsakorn	Member
4	Assistant Governor - Internal Audit	Secretary

2.3 Enterprise Risk Management Committee

Duties and Responsibilities

- Ensure the adequacy and effectiveness of risk management framework and policies which cover all EGAT's operations
- Review the policies and systems used in assessing and evaluating risk management and controls as well as auditing and reporting procedures
- Oversee and ensure the observance of risk management
- Review the disclosure of EGAT's risk information to the regulatory bodies and the public
- Perform any other tasks within the purview of the Enterprise Risk Management Committee as assigned by the Board of Directors

Members of the Enterprise Risk Management Committee (January 1 - December 31, 2017)

No.	Name	Position
1	Mr. Sutat Patmasiriwat	Chairman
2	General Walit Rochanapakdee	Member
3	EGAT Governor	Member
4	Deputy Governor - Policy and Planning	Member and Secretary (Ex-officio)

2.4 Corporate Governance and Social Responsibility Committee

In 2017, according to resolution of the EGAT Board of Directors in the meeting of 5/2017 on May 17, 2017, the name, structure, composition, and duties and responsibilities of the Corporate Governance Committee were changed to become Corporate Governance and Social Responsibility Committee.

Duties and Responsibilities

- Propose policy, strategies, and practical guidelines for corporate governance and social responsibility
- Consider and approve master plans for good governance and for social responsibility
- Supervise the efficient implementation of activities in corporate governance practices and in CSR action plan for maximum effectiveness
- Review the policy in corporate governance and social responsibility as well as guidelines on good governance
- Monitor the operation in prevention and anti-corruption of EGAT and organize reporting system on conflict of interest, complaint receiving procedure, and efficient complaint management
- Promote the understanding in corporate governance and social responsibility to promote wide and continuous implementation
- Promote participation of EGAT Board of Directors, executives, and employees in corporate governance

Members of the Corporate Governance and Social Responsibility Committee

No.	Name	Position	Term of Office (2017)	
			1 st Period	2 nd Period
1	Mr. Distat Hotrakitya	Chairman	Jan. 1 - Jun. 27	-
		Member	-	Jun. 28 - Dec. 31
2	Mr. Chuan Sirinuntporn	Chairman	-	Jun. 28 - Dec. 31
		Member	Jan. 1 - Jun. 27	-
3	EGAT Governor	Member	Jan. 1 - Jun. 27	-
4	Deputy Governor - Legal Affairs and Corporate Governance	Member	-	Jun. 28 - Dec. 31
5	Deputy Governor - Administration	Member	Jan. 1 - Jun. 27	Jun. 28 - Dec. 31
6	Deputy Governor - Corporate Social Affairs	Member	Jan. 1 - Jun. 27	Jun. 28 - Dec. 31
7	Assistant Governor - Legal Affairs	Member	Jan. 1 - Jun. 27	-
8	Assistant Governor - Human Resources	Member	Jan. 1 - Jun. 27	Jun. 28 - Dec. 31
9	Ms. Naree Tantasathien	Member	Jan. 1 - Jun. 27	-
10	Mrs. Chuensumon Niwatawong	Member	Jan. 1 - Jun. 27	-
11	Director of Office of the Governor	Secretary (Ex-officio)	Jan. 1 - Jun. 27	Jun. 28 - Dec. 31

2.5 Law and Regulation Compliance Committee

In the Board of Directors' meeting of 5/2017 on May 17, 2017, the meeting approved the appointment of Law and Regulation Compliance Committee.

Duties and Responsibilities

- Propose to the Board of Directors policy guidelines on law and regulation compliance
- Monitor the compliance of law and regulation and risk management from the non-compliance of the law and regulation
- Organize the follow-up system of the response to the regulatory body, external auditors, and government agencies
- Provide legal advices and guidelines in dealing with the obstruction concerning EGAT's operation
- Consider and screen the draft regulations to be proposed for approval of the Board of Directors
- Perform any other tasks related to law and regulation as assigned by the Board of Directors

Members of the Law and Regulation Compliance Committee (June 28 - December 31, 2017)

No.	Name		Position
1	Mr. Distat	Hotrakitya	Chairman
2	Mr. Chumpol	Rimsakorn	Member
3	Ms. Naree	Tantasathien	Member
4	Mrs. Chuensumon	Niwatawong	Member
5	EGAT Governor		Member
6	Deputy Governor - Legal Affairs and Corporate Governance		Member
7	Assistant Governor - Legal Affairs		Secretary

2.6 Human Resources Committee

Duties and Responsibilities

- Propose policy guidelines on human resources of EGAT
- Consider and approve EGAT's human resources master plan and submit to the Board of Directors
- Perform any other tasks related to HR oversight as assigned by the Board of Directors

Members of the Human Resources Committee (January 1 - December 31, 2017)

No.	Name		Position
1	Mr. Apichart	Chinwanno	Chairman
2	Mr. Sutat	Patmasiriwat	Member
3	EGAT Governor on behalf of EGAT Board of Directors		Member
4	Deputy Governor - Administration		Member
5	Advisor Level 14		Member
6	Assistant Governor - Human Resources		Secretary (Ex-officio)

Remark: No.5 has been appointed Deputy Governor - Legal Affairs and Corporate Governance since May 1, 2017 in accordance with the resolution of the Board of Directors of 4/2017 on April 24, 2017.

2.7 Deputy Governor and Assistant Governor Nomination Committee

The Committee is responsible for considering and recommending candidates for nomination or rotation for the position of Deputy Governor and Assistance Governor in accordance with the principles and procedure in EGAT Regulation No. 379 on Committee for Deputy Governor, Assistant Governor, and Division Director Nomination.

Members of the Deputy Governor and Assistant Governor Nomination Committee (January 1 - December 31, 2017)

No.	Name		Position
1	Mr. Apichart	Chinwanno	Chairman
2	Mr. Chuan	Sirinuntporn	Member
3	Mr. Piboon	Buacham	Member
4	Mr. Rattanachai	Namwong	Member
5	EGAT Governor		Member and Secretary (Ex-officio)

2.8 Advisor and Expert Nomination Committee

The Committee is responsible for considering and recommending candidates for nomination for the position of Advisor and Expert.

Members of the Advisor and Expert Nomination Committee (January 1 - March 15, 2017)

No.	Name		Position
1	Mr. Sutat	Patmasiriwat	Chairman
2	EGAT Governor		Member
3	Deputy Governor - Administration		Member and Secretary
4	Assistant Governor - Human Resources		Assistant Secretary

Remark: The Advisor and Expert Nomination Committee was revoked since March 16, 2017 by the resolution of the Board of Directors in the meeting of 2/2017 dated February 27, 2017 and EGAT Regulation No. 379 on the Deputy Governor, Assistant Governor, and Division Director Nomination Committee.

2.9 EGAT Labor Relations Committee

Duties and Responsibilities

- Give opinions and comments on the improvement of the efficiency in the operation of the state enterprise
- Promote and develop labor relations, seeking ways for a compromise and dispute settlement
- Consider the improvement of the rules and regulations regarding working which will be beneficial for employers, employees, and the organization
- Consult for finding solution to the complaints received from the employees or the

Labor Union as well as complaints regarding disciplinary punishment

- Consult for improvement of the hiring condition

In the Board of Directors' meeting of 3/2016 on February 29, 2016, Mr. Chuan Sirinuntporn, a member of Board of Directors was appointed to be the chairman of the EGAT Labor Relations Committee since February 29, 2016. The Committee consists of 18 members on behalf of the employers and employees.

Members of the EGAT Labor Relations Committee (1st Period: January 1 - August 6, 2017)

No.	Name		Position
1	Mr. Seubphong	Buranasirin	Member, representative of employer
2	Mr. Thaworn	Ngamganokwan	Member, representative of employer
3	Mr. Wiwat	Chancherngpanich	Member, representative of employer
4	Mr. Wanchai	Hongcherdchai	Member, representative of employer
5	Mr. Tatree	Riewcharoen	Member, representative of employer
6	Mr. Boonyanit	Wongrukmit	Member, representative of employer
7	Mr. Wichai	Simadhamnand	Member, representative of employer
8	Mr. Tewan	Tantanatevin	Member, representative of employer
9	Mr. Suwin	Ajjimangkul	Member, representative of employer
10	Mr. Prakob	Parimon	Member, representative of employee
11	Mr. Narainrith	Sa-Ardwong	Member, representative of employee
12	Mr. Surasak	Saehow	Member, representative of employee
13	Mr. Thanatpong	Srireungsombat	Member, representative of employee
14	Mr. Phrae	Chumlaor	Member, representative of employee
15	Mr. Niwat	Pongkaew	Member, representative of employee
16	Mr. Chumpol	Choomongkol	Member, representative of employee
17	Mr. Surat	Intharacha	Member, representative of employee
18	Mrs. Nicharee	Kittakoub	Member, representative of employee

Members of the EGAT Labor Relations Committee
(2nd Period: December 25 - December 31, 2017)

No.	Name		Position
1	Mr. Seubphong	Buranasirin	Member, representative of employer
2	Mr. Boonyanit	Wongrukmit	Member, representative of employer
3	Mr. Viboon	Rerksirathai	Member, representative of employer
4	Mrs. Bhawana	Aungkananuwat	Member, representative of employer
5	Mr. Pattarakit	Techasikarn	Member, representative of employer
6	Mr. Nutthavutthi	Chamchang	Member, representative of employer
7	Mr. Roengchai	Khongthong	Member, representative of employer
8	Mr. Ampon	Kitichotkul	Member, representative of employer
9	Mr. Sanit	Srathongoon	Member, representative of employer
10	Mr. Sirichai	Maingam	Member, representative of employee
11	Mr. Phanomthuan	Thongnoi	Member, representative of employee
12	Mr. Piyapong	Anantasooragath	Member, representative of employee
13	Mr. Warapon	Boonpleak	Member, representative of employee
14	Ms. Suwattana	Chaleengam	Member, representative of employee
15	Mr. Teerachai	Chatmaneepong	Member, representative of employee
16	Mr. Pairoj	Tienthong	Member, representative of employee
17	Mr. Phitsanu	Phokaew	Member, representative of employee
18	Mr. Adul	Suk-Am	Member, representative of employee

Remark: The term of office of the former members of the EGAT Labor Relations Committee ended on August 6, 2017.
The new EGAT Labor Relations Committee was appointed on December 25, 2017.

2.10 EGAT Governor Nomination Committee

Duties and Responsibilities

- Consider and recommend knowledgeable, competent, and experienced persons as candidates for the position of EGAT Governor which must have appropriate qualification and without any prohibited attributes as stipulated by the law. The work results of the Committee will be submitted to the Board of Directors for consideration.

Members of the EGAT Governor Nomination Committee (November 27 - December 31, 2017)

No.	Name		Position
1	Mr. Witoon	Kulcharoenwirat	Chairman
2	Mr. Poramettee	Vimolsiri	Member
3	General Walit	Rochanapakdee	Member
4	Mr. Yongyuth	Chantararothai	Member
5	Mrs. Pantip	Sripimol	Member

2.11 EGAT Governor's Remuneration Subcommittee

Duties and Responsibilities

- Consider the payment and other remuneration for EGAT Governor, criteria and method in work performance evaluation as well as preparing hiring contract, negotiation on the rate of payment and other remuneration with the selected candidates for the position of EGAT Governor. The work results of the Subcommittee will be submitted to the Board of Directors for consideration. The committee may assign any task to any appropriate EGAT units or personnel for assistance.

Members of the EGAT Governor's Remuneration Subcommittee (November 27 - December 31, 2017)

No.	Name		Position
1	Mr. Witoon	Kulcharoenwirat	Chairman
2	Mr. Poramettee	Vimolsiri	Member
3	General Walit	Rochanapakdee	Member
4	Mr. Nattawut	Phaisalwattana	Member
5	Ms. Pranee	Tangserree	Secretary

2.12 EGAT Governor’s Performance Evaluation Subcommittee

Duties and Responsibilities

- Consider the work plan and criteria for evaluation of the performance in accordance with the framework of the hiring contract
- Evaluate the performance in accordance with the framework of the hiring contract for submission to the Board of Directors
- Perform any other tasks as assigned by the Board of Directors

Members of the EGAT Governor’s Performance Evaluation Subcommittee (January 1 - December 31, 2017)

No.	Name		Position
1	Mr. Chumpol	Rimsakorn	Chairman
2	General Walit	Rochanapakdee	Vice-Chairman
3	Mr. Sutat	Patmasiriwat	Member
4	Assistant Governor - Policy		Secretary
5	Director of Corporate Planning Division		Assistant Secretary
6	Director of Office of the Governor		Assistant Secretary

3. Meetings of the Board of Directors and Its Committees

Meetings of EGAT Board of Directors are held in accordance with EGAT Regulation No. 373 concerning meetings and work of EGAT Board of Directors. Members of the Board will be informed on the meeting schedule of the coming year in advance to enable the Board members to attend the meeting regularly.

In 2017, meetings were convened monthly on the fourth week of each month. For each meeting, the agenda would be circulated together with supporting documents and the letters of invitation 7 days in advance of the meeting date to give sufficient time for the Board members to study the issues and to request additional documents or information so that the Board members would have enough information for thorough and efficient consideration.

Each meeting of EGAT Board of Directors is also attended by EGAT Deputy Governors of all lines of command to give additional information to the meeting, to receive policy as well as the views and recommendations of the Board of Directors and transfer to the operational line for action correctly and timely.

Moreover, to provide transparency in the administration, two representatives from EGAT Labor Union, i.e. Chairman and Vice-Chairman or members delegated by the Chairman are invited to attend the meeting as observers.

The number of meetings of EGAT Board of Directors and its committees in 2017 is given in the following table.

No.	Name	Board of Directors	Executive Committee	Audit Committee	Enterprise Risk Management Committee	Corporate Governance Committee	Corporate Governance and Social Responsibility Committee	Law and Regulation Compliance Committee	Human Resources Committee	Deputy Governor and Assistant Governor Nominations Committee	Advisor and Expert Nominations Committee	EGAT Labor Relations Committee	EGAT Governor Nominations Committee	EGAT Governor's Remuneration Subcommittee	EGAT Governor's Performance Evaluation Subcommittee
1	Mr. Areepong Bhoocha-Oom	12/12													
2	Mr. Porameteer Vimolsiri	6/12		10/12									1/1		
3	Mr. Chuan Sirinuntporn	11/12	10/12			1/3	2/2			6/8		4/5			
4	Gen. Walit Rochanapakdee	11/12	11/12		4/4								1/1		3/3
5	Mr. Wittoon Kulcharoenwirat	12/12	12/12										1/1		
6	Mr. Sutat Patmasiriwat	10/12	12/12		4/4				2/2		1/1				2/3
7	Mr. Distat Hotrakitya	12/12				3/3	2/2	6/6							
8	Mr. Apichart Chinwanno	12/12		10/12					2/2	8/8					
9	Mr. Chumpol Rimsakorn	12/12		12/12				6/6							3/3
10	Mr. Yongyuth Chantarathai												1/1		
11	Mrs. Pantip Sripimol												1/1		
12	Mr. Nattawut Phaisalwattana														
13	Mr. Phiboon Buacham									8/8					
14	Mr. Rattanachai Namwong									8/8					
15	Ms. Naree Tantasathien					3/3		5/6							
16	Mrs. Chuensumon Niwatawong					3/3		3/6							
17	Mr. Komrasit Pakchotanon	11/12	12/12		4/4	3/3		6/6	2/2	8/8	1/1				
	Total	12	12	12	4	3	2	6	2	8	1	5	1	-	3

Remark: Some committees held meetings every month, whereas other committees held meetings as necessary.

4. Self-Assessment of EGAT Board of Directors

EGAT Board of Directors regards self-assessment as important in identifying the weak points that need improvements. The self-assessment provides an opportunity for all Board members to review their past performance as contributing to the success of EGAT in order to improve their performance in determining EGAT's strategic directions and supervise the administration of EGAT executives efficiently. The self-assessment must be conducted once a year to comply with the Principles and Guidelines of Corporate Governance for State Enterprise issued by the State Enterprise

Policy Office (SEPO), Ministry of Finance which states that the Board of Directors should conduct self-assessment regularly at least once a year so that improvement can be made based on the results of self-assessment.

In 2017, EGAT Board of Directors conducted self-assessment of both types, i.e. collective Board self-assessment and individual Board self-assessment. The results of both assessments were “excellent.”



5. Remuneration for EGAT Board of Directors

The remuneration for members of EGAT Board of Directors is within the rates approved by the Cabinet. Members of EGAT Board of Directors who are tasked with more responsibility such as being members of the Audit Committee, Executive Committee, Corporate Governance Committee, and Enterprise Risk Management Committee will receive more remuneration at the rates approved by the Cabinet. In 2017, the remuneration for EGAT Board of Directors totaled 9,154,620.76 Baht with details as follows:

No.	Name	Remuneration (Baht)	Meeting Allowance (Baht)	Bonus ¹ (Baht)	Total (Baht)
1	Mr. Areepong Bhoocha-Oom	240,000.00	137,500.00	522,737.08	900,237.08
2	Mr. Apichart Chinwanno	120,000.00	344,500.00	313,642.25	778,142.25
3	Mr. Chuan Sirinuntporn	120,000.00	305,000.00	474,511.50	899,511.50
4	Mr. Poramettee Vimolsiri	120,000.00	220,000.00	474,511.50	814,511.50
5	General Walit Rochanapakdee	120,000.00	270,000.00	474,511.50	864,511.50
6	General Kampanat Ruddit ²	-	-	458,705.05	458,705.05
7	Mr. Wittoon Kulcharoenwirat	120,000.00	292,500.00	474,511.50	887,011.50
8	Mr. Distat Hotrakitya	120,000.00	232,500.00	418,189.66	770,689.66
9	Mr. Sutat Patmasiriwat	120,000.00	292,500.00	474,511.50	887,011.50
10	Mr. Chumpol Rimsakorn	120,000.00	327,500.00	418,189.66	865,689.66
11	Mr. Khemchai Chutiwongse ³	-	-	42,241.38	42,241.38
12	Mr. Sarun Chareonsuwan ³	-	-	14,080.46	14,080.46
13	Mr. Soonchai Kumnoonsate ⁴	-	-	220,500.00	220,500.00
14	Mr. Kornrasit Pakchotanon	120,000.00	365,000.00	266,777.72	751,777.72
	Total	1,320,000.00	2,787,000.00	5,047,620.76	9,154,620.76

Remark:

¹ Bonus for the Board for the year 2016 which was paid in 2017 according to the letter of State Enterprise Policy Office (SEPO) No. KK 0818.1/1736 dated April 11, 2017

² As a director for the year 2016 and resigned from directorship on December 20, 2016

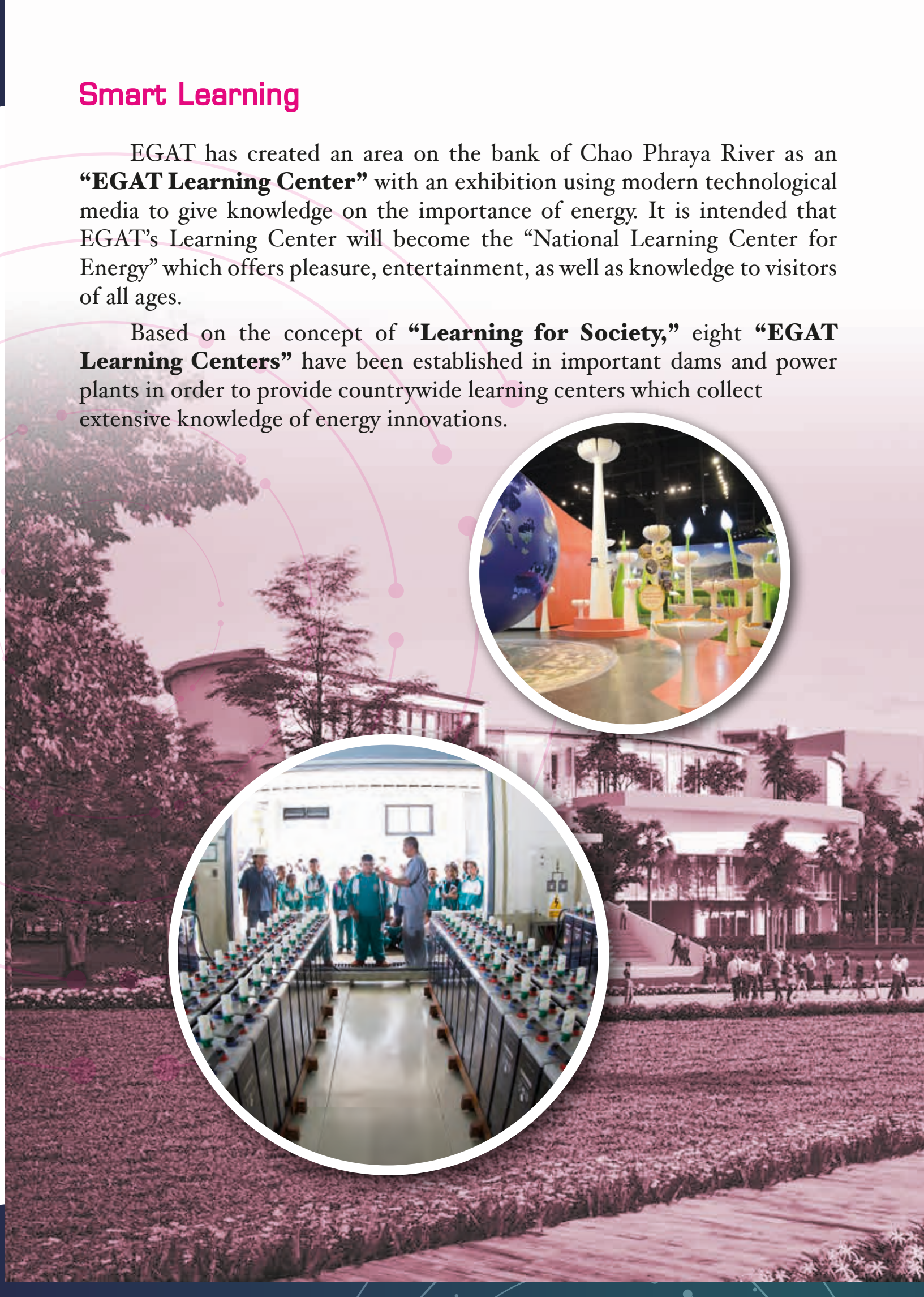
³ As a director for the year 2016 and retired by rotation on February 11, 2016

⁴ As a director for the year 2016 and retired by rotation on June 12, 2016

Smart Learning

EGAT has created an area on the bank of Chao Phraya River as an **“EGAT Learning Center”** with an exhibition using modern technological media to give knowledge on the importance of energy. It is intended that EGAT’s Learning Center will become the “National Learning Center for Energy” which offers pleasure, entertainment, as well as knowledge to visitors of all ages.

Based on the concept of **“Learning for Society,”** eight **“EGAT Learning Centers”** have been established in important dams and power plants in order to provide countrywide learning centers which collect extensive knowledge of energy innovations.





Board of Directors

Mr. Areepong Bhoocha-Oom Age 60

Chairman

Education

- Ph.D. (Finance), University of Mississippi, USA
- M.A. (Finance), Marshall University, USA
- B.A. (International Management), Boston University, USA

Training

- Director Certification Program 2000, the Thai Institute of Directors (IOD)
- Government Debt Monitoring System, World Bank
- Global Trend and Public Enterprise Reform, Harvard University, USA
- Awareness, Vision, Imagination, Responsibility, Action (AVIRA), INSEAD Business School, France
- Senior Executive Program (Class 4), Capital Market Academy (CMA)
- Senior Executive Course in Justice Administration (Class 14), the Court of Justice
- National Defense Regular Course (Class 46), Thailand National Defense College
- Senior Executive Program in Urban Management (Class 1), organized by the Urban Green Development Institute Bangkok and King Prajadhipok's Institute
- The Rule of Law and Democracy Course (Class 1), Office of the Constitutional Court
- Judicial Executive Administration Course (Class 5), the Administrative Court of Thailand
- Executive Program in Energy Literacy for a Sustainable Future (Class 1), Thailand Energy Academy



Work Experience

2017	Retired
2015 - 2017	Permanent Secretary, Ministry of Energy
2015	Permanent Secretary, Ministry of Tourism and Sports
2015	Secretary General, Office of the Public Sector Development Commission, the Prime Minister's Office
2014 - 2015	Permanent Secretary, Ministry of Energy
2013 - 2014	Secretary General, Office of the Public Sector Development Commission, the Prime Minister's Office
2010 - 2013	Permanent Secretary, Ministry of Finance
2009 - 2010	Director General, the Excise Department, Ministry of Finance

Directorship/Management Position in Other State Enterprises/Companies

- Chairman, Thai Airways International Public Company Limited (Resigned on November 1, 2017)

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

* Refers only to the shares of the companies in the same industry or business in which EGAT operates and the amount of the shares held is equal to or higher than 10 percent of the total voting rights

Mr. Apichart Chinwanno Age 61

Director

Education

- Ph.D. (International Relations), St. Antony's College, University of Oxford, UK
- M.Sc. (International Relations), London School of Economics and Political Science, University of London, UK
- B.Sc. (Economics and Politics) (Upper Second Class Honors), University of Southampton, UK

Training

- Columbia Senior Executive Program (CSEP) (Class 123/2007), Columbia Business School, USA
- National Defense Regular Course (Class 52/2009 - 2010), Thailand National Defense College
- Training programs organized by the Thai Institute of Directors (IOD)
 - Advanced Audit Committee Program (Class 25/2017)
 - Role of the Chairman Program (Class 41/2017)
 - Director Certification Program (Class 227/2016)
 - Financial Statement for Directors (Class 31/2016)



Work Experience

2016	Retired
2015 - 2016	Permanent Secretary, Ministry of Foreign Affairs
2013 - 2015	Ambassador of Thailand to France
2011 - 2013	Ambassador of Thailand to Belgium
2009 - 2011	Deputy Permanent Secretary, Ministry of Foreign Affairs

Directorship/Management Position in Other State Enterprises/Companies

- Chairman, Independent Directors, Chamni's Eye Co., Ltd.
- Independent Director, Amata City Bienhoa Joint Stock Company

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

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Mr. Chuan Sirinuntporn Age 64

Director

Education

- M.A. (Development Administration) (Honors), National Institute of Development Administration
- B.A. (Political Science), Chulalongkorn University

Training

- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Accreditation Program (DAP)
 - Ethical Leadership Program (ELP) (Class 8/2017)
- Thai Senior Executive Development Program, National Graduate Policy Studies (GRIP), Japan
- Leadership for Changes, Prince Damrong Rajanuphab Institute of Research and Development, Ministry of Interior
- Certificate Course in Public Law, Thammasat University
- Senior Governing Officers Training Program, Institute of Administration
- National Defense Regular Course, Thailand National Defense College
- Honorary Ph.D., Ubon Ratchathani Rajabhat University
- Honorary Ph.D., Ubon Ratchathani University



Work Experience

2013	Retired
2012 - 2013	Director General, Department of Provincial Administration
2011 - 2012	Governor, Nakhon Ratchasima Province
2010 - 2011	Governor, Phrae Province
2007 - 2010	Governor, Ubon Ratchathani Province
2005 - 2007	Governor, Maha Sarakham Province

Directorship/Management Position in Other State Enterprises/Companies

None

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

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Mr. Poramatee Vimolsiri Age 57

Director

Education

- Ph.D. (Economics), Carleton University, Canada
- M.A. (International Affairs), Columbia University, USA
- B.A. (Economics), Chulalongkorn University

Training

- National Defense Regular Course (Class 52/2009), Thailand National Defense College
- Chief Information Officer (CIO) Training (Class 23/2010), Office of the Civil Service Commission
- Top Executive Program in Commerce and Trade (TEP- CoT) (Class 5/2012), University of the Thai Chamber of Commerce
- Director Certification Program (Class 42/2013), the Thai Institute of Directors (IOD)
- Top Executive Program in Business, Industry, and Investment Development (Class 2/2015), Institute of Business and Industrial Development

Work Experience

- | | |
|----------------|---|
| 2015 - Present | Secretary - General, Office of the National Economic and Social Development Board, Office of the Prime Minister |
| 2009 - 2015 | Deputy Secretary - General, Office of the National Economic and Social Development Board, Office of the Prime Minister |
| 2005 - 2009 | Senior Advisor in Policy and Plan, Office of the National Economic and Social Development Board, Office of the Prime Minister |



- | | |
|-------------|--|
| 1999 - 2005 | Director, Macroeconomic Strategy and Planning Bureau, Office of the National Economic and Social Development Board, Office of the Prime Minister |
|-------------|--|

Directorship/Management Position in Other State Enterprises/Companies

- Member of the Bank of Thailand (BOT) Board and member of the Monetary Policy Committee (MPC) under the BOT Board
- Board Member, Thailand Institute of Scientific and Technological Research (TISTR)

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

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Gen. Walit Rochanapakdee Age 61

Director

Education

- M.A. (Public Administration) (Public Policy), Burapha University
- B.Sc., Chulachomklao Royal Military Academy

Training

- Director Certification Program (Class 243/2017), the Thai Institute of Directors (IOD)

Work Experience

2016	Retired
2015 - 2016	Deputy Commander in Chief, Royal Thai Army Headquarters
2014 - 2015	Deputy Chief of Staff, Royal Thai Armed Forces Headquarters
2014	Commander, the Fourth Army Area Director of the Fourth Army Area - Forward, Internal Security Operations Command
2013 - 2014	First Corps Commander, the First Army Area, Royal Thai Army
2011 - 2012	Deputy Commander, the First Army Area, Royal Thai Army



Directorship/Management Position in Other State Enterprises/Companies

None

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

* Refers only to the shares of the companies in the same industry or business in which EGAT operates and the amount of the shares held is equal to or higher than 10 percent of the total voting rights

Mr. Witoon Kulcharoenwirat Age 59

Director

Education

- M.Eng. (Safety Engineering), Kasetsart University
- M.Eng. (Transportation Engineering), Chulalongkorn University
- B.Eng. (Civil Engineering), Chiang Mai University

Training

- Senior Executive Program 1 (Class 43/2005), Civil Service Training Institute, Office of the Civil Service Commission
- National Defense Regular Course (Class 52/2009), Thailand National Defense College
- Executive Program in Energy Literacy for a Sustainable Future (Class 7/2016), Thailand Energy Academy
- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Certification Program (Class 243/2017)
 - Role of the Chairman Program (Class 41/2017)

Work Experience

2014 - Present	Director General, Department of Energy Business, Ministry of Energy
2013 - 2014	Deputy Director General, Department of Energy Business, Ministry of Energy
2008 - 2013	Director, Bureau of Natural Gas Business Safety, Department of Energy Business, Ministry of Energy
2007 - 2008	Director, Bureau of Liquefied Petroleum Gas Business Safety, Department of Energy Business, Ministry of Energy



Directorship/Management Position in Other State Enterprises/Companies

- Member of Board of Directors, Member of Human Resources and Remuneration Committee, and Member of Investment Committee, Ratchaburi Electricity Generating Holding Public Company Limited

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

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Mr. Sutat Patmasiriwat Age 64

Director

Education

- B.Eng. (Mechanical Engineering), Chulalongkorn University

Training

- Advanced Management Program, Harvard Business School, USA (2009)
- Senior Executive Development Program, Foundation for International Human Resource Development (2006)
- Masterful Coaching Workshop, Hay Group (2006)
- Creating Value through Product Management and Customer Profitability, Sasin Graduate Institute of Business Administration of Chulalongkorn University (2004)
- ASEAN Executives Development Program, Thammasat Business School (2003)
- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Certification Program
 - Role of the Chairman Program (Class 24/2010)
 - Financial Statement for Directors (Class 14/2011)
 - Chartered Director Class (Class 9/2015)
 - Boards that Make a Difference (Class 5/2017)



Work Experience

2013	Retired
2009 - 2013	EGAT Governor
2008 - 2009	EGAT Deputy Governor - Generation
2007 - 2008	EGAT Assistant Governor - Administration, Generation Area
2005 - 2007	EGAT Assistant Governor - Operation-Maintenance Business

Directorship/Management Position in Other State Enterprises/Companies

- Chairman of Board of Directors, Ratchaburi Electricity Generating Holding Public Company Limited

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

* Refers only to the shares of the companies in the same industry or business in which EGAT operates and the amount of the shares held is equal to or higher than 10 percent of the total voting rights

Mr. Chumpol Rimsakorn Age 57

Director

Education

- MPPM, National Institute of Development Administration
- LL.B., Ramkhamhaeng University

Training

- Senior Executive Program (Class 60), Office of the Civil Service Commission
- National Defense Joint Public - Private Sector Course (Class 53), Thailand National Defense College
- Good Governance for Boards of Directors and Executives of State Enterprises and Publicly-owned Establishment (Class 10), King Prajadhipok's Institute
- Senior Executive Program (Class 19), Capital Market Academy (CMA)
- Executive Program in Energy Literacy for a Sustainable Future (Class 7), Thailand Energy Academy
- Inspector General Program 2015, the Prime Minister's Office
- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Certification Program (Class 221/2016)
 - Financial Statement for Directors (Class 30/2016)
 - Role of the Chairman Program (Class 39/2016)
 - Advanced Audit Committee Program (Class 24/2016)



Work Experience

- 2015 - Present Deputy Permanent Secretary, Ministry of Finance
- 2014 - 2015 Inspector General, Ministry of Finance
- 2013 - 2014 Principal Advisor in Tax Development and Administration, the Excise Department, Ministry of Finance
- 2011 - 2013 Deputy Director General, the Excise Department, Ministry of Finance
- 2006 - 2011 Director of Legal Office, the Excise Department, Ministry of Finance

Directorship/Management Position in Other State Enterprises/Companies

- Member of Board of Directors, Thailand Tobacco Monopoly (TTM), Ministry of Finance
- Member of Board of Directors, Thai Military Bank Public Company Limited

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

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Mr. Distat Hotrakitya Age 59

Director

Education

- D.E.A. de Droits Public, Université de Strasbourg III Robert Schuman, France
- Bachelor of Law (Honors), Chulalongkorn University

Training

- Certificate in Comparative Law, Université de Strasbourg III Robert Schuman, France
- Certificate in Public Administration, École Nationale d' Administration (ENA), France
- Executive Program : Executives with Vision (Class 47/2006), Civil Service Training Institute, Office of the Civil Service Commission
- Director Certification Program (Class 94/2007), the Thai Institute of Directors (IOD)
- Good Governance for University Study Development (2010), Knowledge Network Institute of Thailand
- National Defense Regular Course (Class 53/2010), Thailand National Defense College
- Executive Program for Legal Officers (Class 1/2012), Office of the Council of State
- The Rule of Law and Democracy Course (Class 3/2015), Office of the Constitutional Court
- Administration Litigation and Supervision Program, France
- Public Administration, France



Work Experience

- | | |
|----------------|--|
| 2014 - Present | Secretary - General, Office of the Council of State |
| 2012 - 2014 | Deputy Secretary - General, Office of the Council of State |
| 2006 - 2012 | Permanent Law Councilor, Office of the Council of State |

Directorship/Management Position in Other State Enterprises/Companies

- Member of the Board of Directors, Krung Thai Bank
- Member of the Board of Directors, Thai Airways International Public Company Limited

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

* Refers only to the shares of the companies in the same industry or business in which EGAT operates and the amount of the shares held is equal to or higher than 10 percent of the total voting rights

Mr. Kornrasit Pakchotanon Age 59

Director and Secretary (Ex-Officio)

Education

- B.Eng. (Mechanical Engineering), Chulalongkorn University

Training

- E-Government for Chief Executive Officer Program (e-GCEO), Electronic Government Agency (Public Organization)
- Promotion of Peaceful Society, King Prajadhipok's Institute
- Executive Program in Energy Literacy for a Sustainable Future, Thailand Energy Academy
- Training programs organized by the Thai Institute of Directors (IOD)
 - Role of the Chairman Program
 - Financial Statement for Directors
 - Director Certification Program
 - Chartered Director Class
- Senior Executive Program, Capital Market Academy (CMA)
- Advanced Management Program, Harvard Business School, USA (2014)
- Senior Executive Program, Sasin Graduate Institute of Business Administration of Chulalongkorn University (2013)
- Public Economics Management for Executives, King Prajadhipok's Institute (2012)



Work Experience

- | | |
|----------------|---|
| 2016 - Present | EGAT Governor |
| 2015 - 2016 | EGAT Deputy Governor - Generation |
| 2013 - 2015 | EGAT Deputy Governor - Business Development |
| 2011 - 2013 | EGAT Assistant Governor - Generation 3 |

Directorship/Management Position in Other State Enterprises/Companies

- Member of Board of Directors, Electricity Generating Public Company Limited
- Chairman of Board of Directors, EGAT International Company Limited

Name of the Companies and Amount/Value of Shares Held*

None

Connected Transactions in 2017

None

* Refers only to the shares of the companies in the same industry or business in which EGAT operates and the amount of the shares held is equal to or higher than 10 percent of the total voting rights

Executives

Mr. Kornrasit Pakchotanon Age 59

Governor

Education

- Bachelor of Engineering (Mechanical Engineering), Chulalongkorn University

Training

- E-Government for Chief Executive Officer Program (e-GCEO), Electronic Government Agency (Public Organization)
- Promotion of Peaceful Society, King Prajadhipok's Institute
- Executive Program in Energy Literacy for a Sustainable Future, Thailand Energy Academy
- Training programs organized by the Thai Institute of Directors (IOD)
 - Role of the Chairman Program
 - Financial Statement for Directors
 - Director Certification Program
 - Chartered Director Class
- Senior Executive Program, Capital Market Academy (CMA)
- Advanced Management Program, Harvard Business School, USA (2014)
- Senior Executive Program, Sasin Graduate Institute of Business Administration of Chulalongkorn University (2013)
- Public Economics Management for Executives, King Prajadhipok's Institute (2012)



Work Experience

June 15, 2016	EGAT Governor
October 1, 2015	Deputy Governor - Generation
October 1, 2013	Deputy Governor - Business Development
October 1, 2011	Assistant Governor - Generation 3

Mr. Seubphong Buranasirin Age 58

Deputy Governor - Corporate Social Affairs

Education

- Doctor of Philosophy (Honorary) (Morality, Public Administration, and Social Work), International University of Morality, Florida, USA
- Master of Public Administration, National Institute of Development Administration
- Bachelor of Economics (Development Economics), Ramkhamhaeng University
- Bachelor of Law, Thammasat University

Training

- Training programs organized by the Thai Institute of Directors (IOD)
 - Role of the Chairman Program
 - Director Certification Program
 - Boards Matters & Trends
 - Boards that Make a Difference
 - Anti-Corruption : The Practical Guide
- Public Director Certification Program, King Prajadhipok's Institute
- Top Executive Program "Bhumipalung Phandin," Chulalongkorn University
- Justice Administration for Executives, Office of the Administrative Court
- National Defense Joint State-Private Sector Course, Thailand National Defense College
- Anti-Corruption Course for Executives, Office of the National Anti-Corruption Commission



Work Experience

October 1, 2017	Deputy Governor - Corporate Social Affairs
October 1, 2014	Deputy Governor - Administration
May 1, 2014	Assistant Governor - Human Resources
October 1, 2012	Assistant Governor - Human Resources Serving as Assistant Secretary of EGAT Board of Directors and Assistant Secretary of EGAT Board of Directors' Executive Committee
October 1, 2011	Assistant Governor - Office of the Governor Serving as Assistant Secretary of EGAT Board of Directors and Assistant Secretary of EGAT Board of Directors' Executive Committee

Mr. Saharath Boonpotipukde Age 59

Deputy Governor-Renewable and New Energy
Serving as EGAT Spokesman

Education

- Bachelor of Engineering (Electrical Engineering), Chulalongkorn University

Training

- The Executive Program in Energy Literacy for a Sustainable Future, Thailand Energy Academy
- ASEAN Government Leaders Program (AGLP), General Electric Management Research and Development Institute, Crotonville, New York, USA
- Advanced Management Program, Harvard Business School, USA
- Senior Executive Program, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Public Economics Management for Executives, King Prajadhipok’s Institute
- Director Certification Program, the Thai Institute of Directors (IOD)
- Basic Concept in Public Policy Management through Peaceful Means, King Prajadhipok’s Institute



Work Experience

July 1, 2017	Deputy Governor - Renewable and New Energy Serving as EGAT Spokesman
October 17, 2016	Deputy Governor to Office of the Governor Serving as EGAT Spokesman
October 1, 2016	Deputy Governor to Office of the Governor
October 1, 2014	Deputy Governor - Corporate Social Affairs Serving as EGAT Spokesman
October 1, 2013	Engineer Level 13 to the Deputy Governor - Business Development Appointed as Executive Vice President - Administration, EGAT International Company Limited

Mr. Thaworn Ngamganokwan Age 59

Deputy Governor - Fuel

Education

- Master of Public Administration, National Institute of Development Administration
- Bachelor of Engineering (Mining Engineering), Chulalongkorn University

Training

- Executive Program in Energy Literacy for a Sustainable Future, Thailand Energy Academy
- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Certification Program
 - Director Accreditation Program
- Promotion of Peaceful Society, King Prajadhipok's Institute
- Royal Thai Army War College Course, the Royal Thai Army Institute of Advanced Military Studies

Work Experience

October 1, 2015 Deputy Governor - Fuel

October 1, 2014 Assistant Governor - Mae Moh Mine

October 1, 2013 Assistant Governor - Fuel



Mr. Wanchai Hongcherdchai Age 59

Deputy Governor - Account and Finance Serving as Chief Financial Officer (CFO)

Education

- Master of Business Administration, Chulalongkorn University
- Bachelor of Accountancy (Cost Accounting), Chulalongkorn University

Training

- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Certification Program
 - Director Accreditation Program
- Strategic CFO in Capital Markets Program, the Stock Exchange of Thailand
- Anti-Corruption Course for Executives, Office of the National Anti-Corruption Commission
- Leader Program, Capital Market Academy
- Postgraduate Certificate in Finance, London School of Business and Finance, UK
- Utility Executive Course, University of Idaho, USA
- Management for Directors and Senior Executives of State Enterprises and Public Companies, Public Director Institute
- Finance Management Program, Economics and Finance Academy
- Finance Professional Program, Economics and Finance Academy



Work Experience

- October 1, 2016 Deputy Governor - Account and Finance Serving as Chief Financial Officer (CFO)
- October 1, 2013 Assistant Governor - Account

Mr. Nikul Silasuwan Age 58

Deputy Governor - Generation

Education

- Bachelor of Engineering (Mechanical Engineering), Chiang Mai University

Training

- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Certification Program
 - Director Accreditation Program
- Public Administration and Public Law, King Prajadhipok's Institute
- The Civil Service Executive Development Program, the Civil Service Training Institute
- Advanced Police Command Course, Institute of Police Administration Development

Work Experience

October 1, 2016 Deputy Governor - Generation

October 1, 2014 Assistant Governor - Generation 2



Mr. Boonyanit Wongrukmit Age 54

Deputy Governor - Business Development

Education

- Master of Business Administration (Energy Management), University of Montreal, Canada
- Master of Business Administration (Business Administration), Chiang Mai University
- Bachelor of Engineering (Mechanical Engineering), Chiang Mai University

Training

- Advanced Management Program, Harvard Business School, USA
- Leadership Succession Program, Institute of Research and Development for Public Enterprises (IRDPE)
- Director Certification Program, the Thai Institute of Directors (IOD)

Work Experience

- October 1, 2017 Deputy Governor - Business Development
- October 1, 2016 Deputy Governor - Corporate Social Affairs
- October 1, 2015 Assistant Governor - Business Administration



Mr. Viboon Rerksirathai Age 57

Deputy Governor - Transmission System Development

Education

- Master of Business Administration (Operations Management), Kasetsart University
- Bachelor of Engineering (Electrical Engineering), Chulalongkorn University

Training

- National Defense Regular Course, Thailand National Defense College
- Director Accreditation Program, the Thai Institute of Directors (IOD)
- Advanced Management Program, Harvard Business School, USA
- Anti-Corruption Course for Executives, Office of the National Anti-Corruption Commission
- Royal Thai Army War College Course, the Royal Thai Army Institute of Advanced Military Studies

Work Experience

- October 1, 2017 Deputy Governor - Transmission System Development
- October 1, 2013 Assistant Governor - Transmission System Engineering



Ms. Pranee Tangseree Age 59

Deputy Governor - Legal Affairs and Corporate Governance

Education

- Master of Law (Business Law), Thammasat University
- Graduate Diploma Program in Business Law, Thammasat University
- Graduate Diploma Program in English - Thai Translation, Thammasat University
- Barrister-at-Law, Institute of Legal Education of the Thai Bar
- Bachelor of Law, Ramkhamhaeng University
- Bachelor of Arts, 2nd Class Honors, Chulalongkorn University

Training

- Thailand and ASEAN Economic Community Course, King Prajadhipok's Institute
- Administrative Justice for Executives, Office of the Administrative Court
- RTAF & CEO Relationship, Royal Thai Armed Forces Headquarters, Institute of Security Psychology

Work Experience

- | | |
|-----------------|--|
| October 1, 2017 | Deputy Governor - Legal Affairs and Corporate Governance |
| April 1, 2017 | Assistant Governor - Legal Affairs |
| April 23, 2014 | Assistant Governor - Legal Affairs Bureau |



Mr. Adul Pitakchartiwongse Age 59

Deputy Governor - Transmission System

Education

- Bachelor of Science in Industrial Education (Electrical Engineering), 2nd Class Honors, King Mongkut's University of Technology North Bangkok

Training

- Director Accreditation Program, the Thai Institute of Directors (IOD)
- Public Administration and Public Law, King Prajadhipok's Institute
- Executive Development Program, Fiscal Policy Research Institute Foundation
- Air War College, the Royal Thai Air Force Institute of Higher Education

Work Experience

- October 1, 2017 Deputy Governor - Transmission System
- October 1, 2014 Assistant Governor - System Control



Mrs. Bhawana Aungkananuwat Age 58

Deputy Governor - Administration

Education

- Master of Marketing, Thammasat University
- Bachelor of Arts (English), 2nd Class Honors, Chulalongkorn University

Training

- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Certification Program
 - Director Accreditation Program
- Public Economics Management for Executives, King Prajadhipok's Institute
- Driving Performance through Talent Management, Harvard Business School, USA
- Global HR Practices and Strategic Leadership, Cambridge's Business School
- GE China Executive Program-Leadership Development General Electric (GE)
- Strategic Management, California State University

Work Experience

October 1, 2017 Deputy Governor - Administration

October 1, 2014 Assistant Governor - Human Resources



Mr. Kodshayut Boriboonchatuporn Age 58

Deputy Governor - Power Plant Development

Education

- Master of Business Administration (Management Science), Sukhothai Thammathirat Open University
- Bachelor of Engineering (Mechanical Engineering), Kasetsart University

Training

- The Civil Service Executive Development Program, the Civil Service Training Institute, Office of the Civil Service Commission

Work Experience

- | | |
|-----------------|---|
| October 1, 2017 | Deputy Governor - Power Plant Development |
| October 1, 2016 | Assistant Governor - Power Plant Development and Planning |
| January 1, 2016 | Assistant Governor - Power Plant Construction |



Mr. Patana Sangsriroujana Age 57

Deputy Governor - Policy and Planning

Education

- Master of Public and Private Management, National Institute of Development Administration
- Bachelor of Engineering (Electrical Engineering), 2nd Class Honors, King Mongkut's University of Technology Thonburi

Training

- Executive Energy Management Program, Ministry of Energy
- Smart Marketing for Digital Economy, Institute of Research and Development for Public Enterprise
- National Security Management for Senior Executives, National Intelligence Agency
- PURC Advanced Program, Public Utility Research Center, USA

Work Experience

- November 1, 2017 Deputy Governor - Policy and Planning
- October 1, 2016 Assistant Governor - Transmission System Maintenance



Mr. Kijja Sripatthangkura Age 57

Deputy Governor to Office of the Governor

Appointed as Chief Executive Officer,
Ratchaburi Electricity Generating Holding
Public Company Limited

Education

- Bachelor of Engineering (Electrical Engineering),
Prince of Songkhla University

Training

- Director Certification Program, the Thai Institute
of Directors (IOD)
- Executive Program in Energy Literacy for a
Sustainable Future, Thailand Energy Academy
- Public Economics Management for Executives,
King Prajadhipok's Institute
- Advanced Management Program, Harvard
Business School, USA
- Senior Executive Program, Sasin Graduate Institute
of Business Administration, Chulalongkorn
University
- Thailand and the ASEAN Economic Community,
King Prajadhipok's Institute

Work Experience

April 6, 2017	Deputy Governor to Office of the Governor Appointed as Chief Executive Officer, Ratchaburi Electricity Generating Holding Public Company Limited
October 1, 2015	Deputy Governor - Policy and Planning
October 1, 2013	Assistant Governor - Planning



Mr. Jakgrich Pibulpaibroj Age 56

Deputy Governor to Office of the Governor
Appointed as President, Electricity Generating
Public Company Limited

Education

- Bachelor of Engineering (Mechanical Engineering), Chulalongkorn University

Training

- Advanced Management Program, Harvard Business School, USA
- Training programs organized by the Thai Institute of Directors (IOD)
 - Director Certification Program
 - Director Accreditation Program
- Leadership Succession Program, Institute of Research and Development for Public Enterprises (IRDPE)
- Foreign Affairs Executive Program, Devawongse Varopakarn Institute of Foreign Affairs
- Advanced Police Command Course, Institute of Police Administration Development

Work Experience

- October 1, 2017 Deputy Governor to Office of the Governor Appointed as President, Electricity Generating Public Company Limited
- October 1, 2016 Deputy Governor - Business Development
- October 1, 2015 Assistant Governor - Operation and Maintenance Business



Executives Retired in 2017

Mr. Suthon Boonprasong

Deputy Governor - Transmission System

From October 1, 2013 - September 30, 2017

Retired on October 1, 2017

Mr. Rum Herabat

Deputy Governor to Office of the Governor

From April 6, 2017 - September 30, 2017

Retired on October 1, 2017

Mrs. Juree Somprasong

Deputy Governor - Legal Affairs and Corporate Governance

From May 1, 2017 - September 30, 2017

Retired on October 1, 2017

Mr. Chanin Chaonirattisai

Deputy Governor to Office of the Governor

Appointed as President, Electricity Generating Public Company Limited

From April 19, 2017 - September 30, 2017

Retired on October 1, 2017

Mr. Wichai Simadhamnand

Deputy Governor - Transmission System Development

From October 1, 2016 - September 30, 2017

Retired on October 1, 2017

Mr. Wiwat Chanherngpanich

Deputy Governor - Power Plant Development

From October 1, 2016 - September 30, 2017

Retired on October 1, 2017

Corporate Governance

EGAT has given importance to the corporate governance and management with transparency and accountability as a framework for every working process such as **corporate guidance and planning process, core process, and management process** in order to submit deliverables to the customers, stakeholders, trading partners, and suppliers which will promote recognition and confidence in the operation of EGAT resulting in EGAT's achievement of its mission in enhancing the energy security of the country.

Corporate Guidance and Planning Process:

In establishing the policy in corporate guidance and planning, the top executives of EGAT consisting of Board of Directors, Governor, and Deputy Governors have defined the vision of EGAT as “Innovate Power Solutions for a Better Life” taken into account the government policy, national strategy, need and expectation of stakeholders, and competitive condition as input factors. To achieve the above mentioned vision, strategies for excellence in 4 areas have been developed, namely E.G.A.T. The objective of the strategy T (Trust and Pride of the Nation) is to provide EGAT with good governance and to be the organization which is trusted by the society and the nation's pride. To mobilize this strategy, the T Committee has been established to consider the guidelines for the operation, monitor the implementation, and evaluate the result in the implementation of this strategy.

The Board of Directors has set the policy concerning EGAT's corporate governance to be consistent with the changing situation. Moreover, they have reviewed policy, rules, and regulations to take into account the 6 principles of corporate governance comprising rule of law, morality, transparency, participation, accountability, and effectiveness and efficiency. The governance will be observed by the Board of Directors, executives, permanent employees, and temporary employees. The Board of Directors and the executives must be

good examples in ethical conduct and morality, meanwhile the executives and employees should work with dedication and responsibility. Disclosure of financial and non-financial information of EGAT should be carried out correctly, reliably, completely, adequately, regularly, and timely.

Moreover, to provide transparency and efficiency to the administration of EGAT, EGAT regulation concerning the Corporate Governance and Social Responsibility Committee has been revised with the addition of the anti-corruption and overseeing complaint process under the responsibility of the Committee.

Core Process: EGAT has used the governance policy as the framework in the operation of the core process which is the main mission consisting of power development projects, electricity generation, and electricity transmission. The deliverables to the stakeholders are stability and reliability of the system, efficiency, transparency, equity, environmental friendliness, and innovation. The policy in sustainable development of EGAT and its affiliates is comprised of the administration which is based on the corporate governance; strict compliance with the law; honesty and disclosure, transparency, and anti-corruption; promoting social responsibility in all processes in accordance with the international standard throughout the value chain; human rights and labor by equitable treatment; sustainable environmental management and making use of resources, a concern on the expectation

of the stakeholders and equilibrium in economic, social, and environmental aspects; the knowledge and expertise to create innovation, and promoting competency building on a professional basis.

Corporate Management Process: The corporate management process consists of legal affairs, finance and accountancy, management, and social responsibility. The working process under the corporate governance is focused on transparency, accountability, cost-effectiveness and efficiency in the use of resource, team working, open for participation of related persons, and a concern on society, community, and environment in the legal framework.

The corporate governance implemented by the 3 important processes of EGAT as mentioned above has effectively enabled EGAT to respond to the need and expectation of the customers, stakeholders, trading partners, and suppliers resulting in the recognition and confidence in the operation of EGAT. Thus, EGAT has accomplished its mission in electricity generation and transmission and has an important role in economic, social, and environmental development in order to enhance better quality of life for the Thai people. From its commitment to carry out its mission in accordance with the corporate governance, in 2017, EGAT was awarded the following important prizes in governance:

- Outstanding State-Owned Enterprise Award 2017 in the category of outstanding management from the State Enterprise Policy Office

- Awards for a state enterprise with development toward excellent motivation of the ethics and transparency in operation in 2017: “Excellent transparency” and “Excellent accountability” from the Office of the National Anti-Corruption Commission (NACC)

- “Role Model Award” in the category of participation in the promotion of governance and anti-corruption in the organization in 2017 from the Office of the National Anti-Corruption Commission (NACC)

- Honorable Mention award in the 7th NACC Integrity Awards of the Office of the National Anti-Corruption Commission (NACC)

- Very high level of Integrity & Transparency Assessment (ITA) conducted by the Office of the National Anti-Corruption Commission (NACC).

In addition to the important operation mentioned above, other activities such as management of conflict of interest and anti-corruption have been organized to promote the corporate governance of EGAT as well as to promote the image of EGAT as a trustworthy organization and the pride of the nation.



Conflict of Interest

EGAT has a measure of preventing the conflict of interest both at the level of Board of Directors and at the Executives level. According to EGAT Regulation on Corporate Governance, EGAT Board of Directors is responsible for supervising and solving the problem regarding conflict of interest which may occur among the executives, Board of Directors, and employees, investigating the misuse of EGAT's property, and finding a preventive measure against the abusive self-dealing of the members of the Board. Every Board member has to report on other positions they are holding including committee member, management position in other state enterprises or companies as well as connected transactions, amount/value of shares in other companies in the same industry or business in which EGAT operates and the amount of the shares held

is equal to or higher than 10 percent of the total voting rights. Additionally, the qualification of the Board members shall be verified to be in compliance with the Constitution of Thailand, the Act on Qualification Standards for Directors and Employees of State Enterprises, B.E. 2518 (1975), EGAT Act B.E. 2511 (1968) and other related laws.

For EGAT executives, according to the corporate governance, the executives from the level of Deputy Governor or the equivalent and above must disclose the conflict of interest between one's personal interest and the organization's interest on the date of appointment and at the end of the year. Moreover, members of the procurement committees must also disclose the conflict of interest between one's personal interest and the organization's interest.

Anti-Corruption Policy

EGAT focuses on promoting corporate governance in the administration and participation in the inspection, watching, creating awareness, and understanding in anti-corruption in the same direction in accordance with EGAT's policy in anti-corruption which has adopted the guidelines and measures of the national strategy in anti-corruption, phase 3 (2017-2021) framework. Information on anti-corruption has been circulated for information of the employees in order to alert them of the importance and necessity in anti-corruption. Systems, measures, and guidelines on watching, inspection, and whistle blowing are available to prevent misconduct in every working process. If any corruption is found to have taken place, immediate investigation and severe punishment will be undertaken to prevent the same occurrence.

In 2017, EGAT signed a Memorandum of Understanding (MOU) on the cooperation in mobilization of national strategy in anti-corruption, phase 3, (2017- 2021) with the Office of the National Anti-Corruption Commission (NACC), State Enterprise Policy Office, and 54 state enterprises. The objective of the MOU is to upgrade the ethics and transparency in the operation of the organization based on the Integrity & Transparency Assessment (ITA). There has been the establishment of the Anti-Corruption Center and the integration of the complaint handling system and monitoring system of the complaints in anti-corruption management.

Promotion and Dissemination of Activities Concerning Corporate Governance

EGAT's Corporate Governance Master Plan (2017-2026) comprises 4 strategies, namely the strategy to promote EGAT as people's organization, the strategy to communicate to reach the target group, the strategy to create ideology for EGAT employees to hold to the governance and be ready for inspection, and the strategy to create immunity for EGAT to be strong and firm in its governance by building alliances to develop the understanding of the civil society to EGAT's operation. Moreover, the annual action plan has been prepared to support the Corporate Governance Master Plan under the supervision of the Corporate Governance Committee. EGAT employees must follow EGAT's code of conduct, corporate value, and culture which have been mobilized by representatives of every corporate unit. The progress of the action plan will

be reported to the Executive Committee and the Corporate Governance and Social Responsibility Committee every three months and to the EGAT Board of Directors every six months.

In 2017, EGAT organized several activities under the action plan which promoted participation of stakeholders in expressing their views and comments on the operation of EGAT and be informed on the implementation under EGAT's governance. For example, a forum for the civil society was held at Krabi Power Plant Project. The stakeholders with different opinions were invited to exchange their views and ideas with EGAT high level executives so that they could understand EGAT's mission and would support and cooperate with EGAT's work.



Official Information Act Compliance Report

In compliance with the Official Information Act, B.E. 2540 (1997), EGAT has appointed the Committee on EGAT Information Management to be responsible for determining policies, measures, or criteria regarding information management, permission to use information, and information services, with the approval of EGAT Deputy Governor - Corporate Social Affairs. EGAT Information Center is responsible for information service in accordance with EGAT information management policy with a commitment to provide news and information service in a fair, equitable, and transparent manner and in compliance with the Official Information Act B.E. 2540 (1997) and other relevant laws. EGAT has put in place its information disclosure system which defines clear rules, procedures, systems, and practices for the disclosure of EGAT information complying with the Official Act Information B.E. 2540 (1997). EGAT's information service is available in various forms such as documents, internet-accessible information, audio text, fax on demand, and assistance by EGAT staff. Moreover, interested persons can visit EGAT Information Center at the Building of Corporate Communications Division, EGAT Headquarters, Bang Kruai District, Nonthaburi Province.

Detailed information or documents on important topics are available at the relevant divisions with the assistance of appointed EGAT staff in each division. Interested persons can visit the required division themselves or by telephone.

Internet-Accessible Information

Information on various activities of EGAT is available at EGAT website: www.egat.co.th which is accessible on 24-hour basis. This information includes EGAT operation, power plants, transmission system, power generation, energy sales, power development plan, new power projects, etc.

Social media (Facebook/EGAT 1416 and Twitter/EGAT 1416) as well as Mobile Application EGAT 1416 in iOS and Android systems have been provided as another communication channel to give information, inquiries and complaints, and announcement of emergency to the public.

EGAT Call Center

EGAT Call Center is available to provide enquiry service regarding technical and other related information and suggestions useful to the public including emergency or situations related to the high-voltage transmission system. EGAT Call Center has provided a one-stop service to the people countrywide to contact EGAT speedily around the clock via EGAT Call Center 1416.

Activities of EGAT Information Center in 2017

1. Enquiry service through telephone, EGAT’s website, and the assistance to visitors at EGAT Information Center during office hours

2. Information service through EGAT Call Center 1416: In 2017, EGAT Information Center provided 9,349 times of service. Types of information included the following:

- Information on power generation and transmission
- EGAT’s CSR activities
- Energy sales and EGAT procurement
- Job recruitment, internship training opportunity, request for the visit of EGAT’s office, power plants, dams, and guesthouse
- Contact EGAT staff and units in EGAT
- Emergency situation and complaints

3. Information service via EGAT’s Electronic Official Information Center (www.oic.go.th/info-center6/623/) in accordance with the policy of the Office of the Official Information Commission

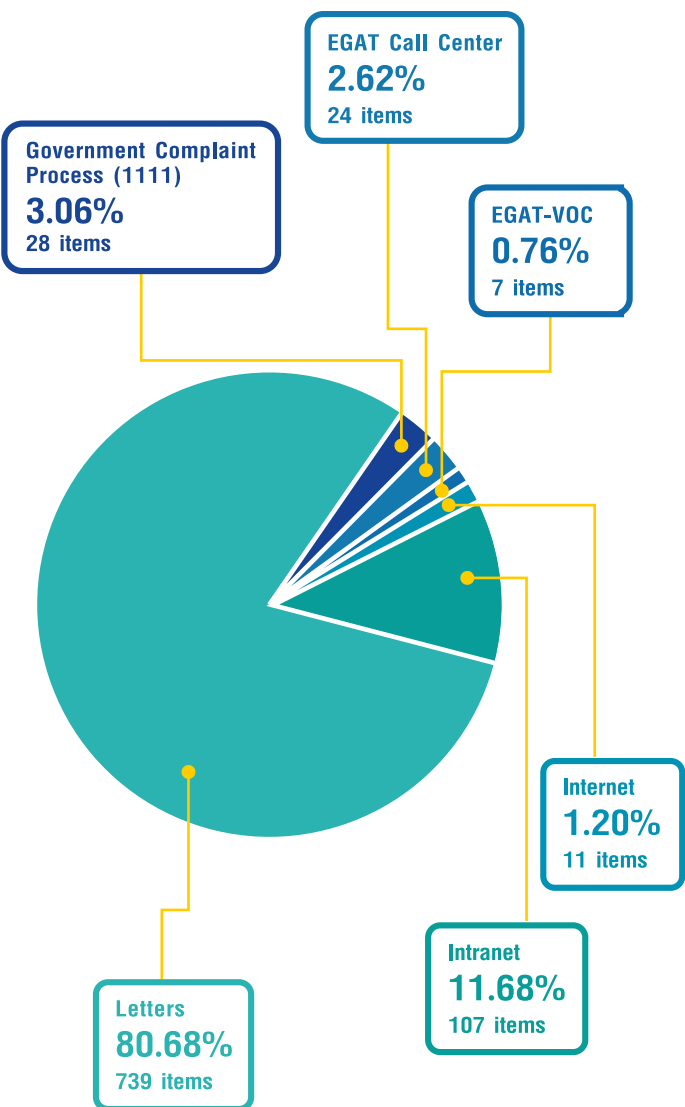
EGAT Information Management Committee

EGAT Information Management Committee is responsible for setting policy and measures on information management system, providing information service, as well as considering complaints or objection according to the Official Information Act, B.E. 2540 (1997). The resolutions of the Committee will be responsible by relevant units of EGAT. The subject considered by the Committee was the power purchase contract with the private power sector.

Public Complaint Process

EGAT has given importance to corporate governance and management with accountability, transparency, and traceability coupled with the participation of public and all groups of stakeholders. They can inform suggestions, comments, or complaints through various channels of EGAT. In 2017, EGAT Information Center received comments from the public totaling 916 items.

The chart illustrating comments received in 2017 categorized by channels



Power Development and Future Plan

Power Development Plan B.E. 2558-2579 (PDP 2015) gives importance to the following areas:

1) Power security: to increase security to the electricity generation system, power transmission, and power distribution system per area

2) Economy: appropriate electricity tariff which reflects the cost of production and distribution

3) Environment: to reduce impact on the ecosystem of the environment and the community

Moreover, PDP 2015 aims to reduce electricity generation by natural gas and to increase the proportion of electricity generation by clean coal technology, electricity generation by the renewable energy, and imported power.

The achievements of EGAT power projects, IPPs, SPPs, and imported electricity included in PDP 2015 are as follows:

EGAT's Power Plant Projects

1. Construction of New Power Plants

1.1 Replacement Project of Mae Moh Power Plant Units 4-7

The Replacement Project of Mae Moh Power Plant Units 4-7 which is located in the area of the existing Mae Moh Power Plant, Mae Moh District, Lampang Province is a base load thermal power plant with the generating capacity of 600 MW. It uses lignite from the local mine as fuel and is equipped with modern equipment and advanced technology. The project costs 36,451 million Baht. As of December 2017, the progress of the construction was 96.30 percent. The commercial operation date is scheduled for November 2018.

1.2 Replacement Project of South Bangkok Power Plant Phase 1

The Replacement Project of South Bangkok Power Plant Phase 1 with the net generating capacity of 1,234.3 MW is located in Samut Prakan Province. Being a combined cycle power plant using natural gas as the main fuel and diesel oil as the supplementary fuel, the power plant will help strengthen the power system in Bangkok and the metropolitan areas. As of December 2017, the progress of the construction was 38.20 percent. The commercial operation date is scheduled for December 2020.

2. Renewable Power Plant Development

Lamtakong Wind Turbine Power Plant Project Phase 2

Lamtakong Wind Turbine Power Plant Project Phase 2 is located in Nakhon Ratchasima Province. It uses wind hydrogen hybrid system which is a new technology to increase the electricity storage in the form of hydrogen and fuel cells for use with wind turbine. The electricity generated by the wind turbine will supply electricity to the system with stability. The total generating capacity of the 12 wind turbines, each of which is 2 MW, is 24 MW. The commercial operation date is scheduled for January 2018.

3. Power Plant Projects in the Approval Process and Projects in the Initial Stage of Development

3.1 Replacement Project of Bang Pakong Power Plant Units 1-2

The Replacement Project of Bang Pakong Power Plant Units 1-2 is located in the area of Bang Pakong Power Plant, Chachoengsao Province. It is a combined cycle power plant using natural gas as the primary fuel and diesel as the supplementary fuel with the net generating capacity of 1,408.7 MW. The power plant will help stabilize the electricity system in Bangkok and the metropolitan areas and in the Eastern region. The project received approval for construction on November 7, 2017 with the investment of 33,942.65 million Baht. It is scheduled for commercial operation in December 2020.

3.2 Krabi Coal-Fired Power Plant Project

Krabi Coal-Fired Power Plant Project aims to strengthen the power system security in the Southern region and to increase the proportion of coal used in electricity generation in accordance with the government's policy for energy security by the diversification of fuel used in power generation, reducing dependence on natural gas, and maintaining energy balance. Krabi Coal-Fired Power Plant has the net generating capacity of 800 MW using imported sub-bituminous/bituminous coal as the main fuel with pollutant control technology. Moreover, activated carbon injection (ACI) is used to increase the efficiency of mercury capture after combustion. The project is scheduled for commercial operation in 2026.

3.3 Thepha Coal-Fired Power Plant Project

Thepha Coal-Fired Power Plant Project is located in Thepha District in Songkhla Province. The project will strengthen the security of power system in the Southern region and increase energy security on a long term basis. Thepha Coal-Fired Power Plant has the net generating capacity of 2,000 MW using imported sub-bituminous/bituminous coal as the main fuel. It is scheduled for commercial operation in 2025 and 2027 respectively.

3.4 Replacement Project of Wang Noi Power Plant Blocks 1-2

The Replacement Project of Wang Noi Power Plant Blocks 1-2 with the generating capacity of 1,300 MW using natural gas as the main fuel and diesel oil as the supplementary fuel will strengthen the security of the electricity system in Northern Bangkok. The commercial operation date is scheduled for January 2023.

3.5 Replacement Project of South Bangkok Power Plant Phase 2

The Replacement Project of South Bangkok Power Plant Phase 2 is of the net generating capacity of approximately 1,300 MW using natural gas as the main fuel and diesel as the supplementary fuel. The project will reinforce the security of the power system of Southern Bangkok. The commercial operation date is scheduled for September 2023. At present, the project is in the process of consideration for approval and environmental and health impact analysis.

3.6 Replacement Project of Mae Moh Power Plant Units 8-9

The Replacement Project of Mae Moh Power Plant Units 8-9 is a base load thermal power plant with the net generating capacity of approximately 450 MW using lignite as fuel. The project aims to maintain the security of the power system of the country as a whole. The commercial operation is scheduled for January 2025.

3.7 Nuclear Power Plant Project

According to the guidelines for power allocation and proportion of fuel in PDP 2015, the share of nuclear power in electricity generation in 2036 will not exceed 5 percent of the total capacity as it is cheap and clean and contributes to the reduction of global warming. The Nuclear Power Plant Project is a thermal power plant with the generating capacity of 2,000 MW. At present, the project is under the study on technical matters, safety, and plant location. Moreover, the learning process is organized regularly to promote understanding of the public regarding nuclear power plant.

Power Purchase Project

Power Purchase from Independent Power Producers (IPPs)

During 2018-2025, the Power Purchase Agreements (PPA) between EGAT and Independent Power Producers (IPPs) have been signed on 4 projects with the total capacity of 5,000 MW. The projects are in the process of preparation for construction.

Project	Capacity (MW)	Scheduled Commercial Operation Date
1. Gulf SRC Co., Ltd.	1,250 (2 x 625)	Mar./Oct. 2021
2. Gulf SRC Co., Ltd.	1,250 (2 x 625)	Mar./Oct. 2022
3. Gulf PD Co., Ltd.	1,250 (2 x 625)	Mar./Oct. 2023
4. Gulf PD Co., Ltd.	1,250 (2 x 625)	Mar./Oct. 2024
Total	5,000	

Power Purchase from Small Power Producers (SPPs)

The projects of power purchase from Small Power Producers with the scheduled commercial operation dates during 2018-2025 have the total capacity of 1,765 MW comprising 1,720 MW of cogeneration projects and 45 MW of renewable energy projects.

Power Purchase from Neighboring Countries

At present, EGAT has purchased power from neighboring countries with a total capacity of 3,877.6 MW from 7 projects. During 2018-2020, EGAT will purchase 1,843 MW more from 3 projects.

Project	Country	Fuel	Capacity (MW)	Scheduled Commercial Operation Date
1. Xe-Pian Xe-Namnoy	Lao PDR	Hydro	354	Feb. 2019
2. Nam Ngiep 1	Lao PDR	Hydro	269	Jul. 2019
3. Xayaburi	Lao PDR	Hydro	1,220	Oct. 2019
Total			1,843	

Transmission System Development and Expansion Projects

Approved Projects

1. Bulk Power Supply for the Greater Bangkok Area Phase 2 Project (GBAS2)

Being a successive project of the Bulk Power Supply for the Greater Bangkok Area Phase 1 Project (BSB1), the project costs 9,170 million Baht and comprises the construction of new transmission lines of 89.025 circuit-kilometers and a new substation, expansion of 6 substations, installation of transformers totaling 10,600 MVA and capacitor bank of 672 MVar, and 23 other miscellaneous works relating to the transmission system expansion. As of December 2017, the progress of the project was 88.95 percent. This project is scheduled to be completed in 2019.

2. Transmission System Development Project for Power Purchase from Nam Ngum 3 and Nam Theun 1 Hydropower Plants (NNG3-NTN1)

The purpose of this transmission system development project is to accommodate the power purchase from Nam Ngum 3 and Nam Theun 1 Hydropower Plants and/or other potential projects in Lao PDR. The project costs 16,337.60 million Baht and consists of the construction of the transmission line of 1,004.832 circuit-kilometers and a new substation, expansion of 3 substations, installation of transformers of 4,000 MVA and capacitor bank of 770 MVar, and 2 other miscellaneous works relating to the transmission system expansion. As of December 2017, the progress of the project was 92.88 percent. The project is scheduled to be completed in 2018.

3. Transmission System Development Project for Power Purchase from IPPs (IPPP)

The purpose of this transmission system development project is to accommodate the power purchase from the IPP power plants under 4 sub-projects with the installed capacity of approximately 4,400 MW. The project costs 7,958 million Baht and consists of the construction of the transmission line of 169.40 circuit-kilometers and 2 new substations, expansion of 6 substations, installation of transformers of 1,000 MVA, and 4 other miscellaneous works relating to the transmission system expansion. As of December 2017, the progress of the project was 76.84 percent. The complete date of the project is pending, awaiting the clarification of the project for power purchase from the National Power Supply Co., Ltd.

The construction of 3 transmission system sub-projects has been completed except for the sub-project of the transmission system to accommodate the power purchase from the thermal power plant of the National Power Supply Co., Ltd. of which the power purchase agreement has not been signed and is awaiting the Cabinet's resolution on dispute settlement by arbitration process and approval on the new EHIA.

4. Transmission System Expansion and Renovation Project Phase 1: Substation (RSP1)

As the electricity equipment and structure of several substations are aged, deteriorated, and liable to risk in electricity availability, EGAT executives have given the policy to prepare a plan for improvement/renovation or addition of electricity transmission equipment and buildings in the aged substations so that the transmission system is complete with availability, reliability, and security. This project costs 3,815 million Baht and consists of renovation of 15 substations. As of December 2017, the progress of the project was 79.03 percent. It is scheduled to be completed in 2019.

5. Main Transmission System Expansion Project for Power Purchase from Small Cogeneration Power Plants, Based on Request for Proposal 2010 (SPPC)

The project for Power Purchase from Small Cogeneration Power Plants costs 10,610 million Baht and consists of the construction and expansion of relevant transmission system of 490 circuit-kilometers, a new substation, expansion of 72 substations, and installation of the transformers of 2,500 MVA. As of December 2017, the progress of the project was 85.62 percent. The project is scheduled to be completed in 2019.

6. Transmission System Expansion and Renovation Project Phase 1: Transmission Line (RLP1)

The project involves the expansion and renovation of the transmission lines which are aged, deteriorated, and liable to risk in electricity availability. The project costs 9,850 million Baht and

comprises the construction of 15 transmission lines of 331 circuit-kilometers and the expansion of 14 substations. As of December 2017, the progress of this project was 81.28 percent. It is scheduled to be completed in 2023.

7. Transmission System Development Project in the Area of Loei, Nong Bua Lam Phu, and Khon Kaen Provinces for Power Purchase from Lao PDR (LNKP)

The purpose of this transmission system development project is to accommodate power purchase from Xayaburi Hydroelectric Plant in Lao PDR to increase the security of electricity system. The project costs 12,060 million Baht and consists of the construction of the transmission lines of 505 circuit-kilometers, 3 substations, expansion of 4 substations, and installation of transformers of 2,400 MVA. As of December 2017, the progress of this project was 73.87 percent. It is scheduled to be completed in 2021.

8. Transmission System Expansion and Renovation Project Phase 2 (RTS2)

The project is a successive scheme of the Transmission System Renovation and Expansion Project Phase 1. This project costs 21,900 million Baht and consists of the renovation and expansion of 11 transmission lines of 1,267 circuit-kilometers and 19 substations. As of December 2017, the progress of this project was 18.65 percent. It is scheduled to be completed in 2023.

9. Transmission System Development in the Area of Ubon Ratchathani, Yasothon, and Amnat Charoen Provinces for Power Purchase from Lao PDR Project (UYAP)

This project is intended to accommodate the power purchase from Xe-Pian Xe-Namnoy Hydropower Plant Project to increase the security of the power system. The project costs 7,300 million Baht and consists of the construction of transmission lines of 440 circuit-kilometers, construction of a new substation, expansion of 6 substations, and installation of transformers of 400 MVA. As of December 2017, the progress of this project was 47.05 percent. It is scheduled to be completed in 2018.

10. Transmission System Improvement Project in Eastern Region for System Security Enhancement (TIPE)

The purpose of this transmission system improvement project is to enhance the security of the power system in the Eastern part of Thailand to continuously and sufficiently cope with the rising demand for electricity, to receive electric power from new power plants, and to promote the expansion of industry and tourism in the Eastern part of Thailand. The project costs 12,000 million Baht and consists of the construction of transmission lines of 469.664 circuit-kilometers and 3 new substations, expansion of a substation, installation of transformers of 3,000 MVA, and 8 miscellaneous works relating to the transmission system expansion. As of December 2017, the progress of this project was 19.20 percent. It is scheduled to be completed in 2022.

11. Bulk Power Supply for the Greater Bangkok Area Phase 3 (GBA3)

The project is a successive project of the Bulk Power Supply for the Greater Bangkok Area Phase 2 (GBA2) Project. The objective of this project is to respond to the increasing demand for electricity in the area of Greater Bangkok which is the most important economic center of the country and to enhance the security of the electricity system of Thailand. The project costs 12,100 million Baht and comprises the construction and improvement of the transmission lines of 176.030 circuit-kilometers and 2 new substations, expansion of a substation, installation of transformers of 10,200 MVA and capacitor bank of 96 MVar, and 10 miscellaneous works relating to the expansion of the transmission system. As of December 2017, the progress of this project was 45.01 percent. It is scheduled to be completed in 2021.

12. Transmission System Expansion Project Phase 12 (TS12)

Being a successive scheme of the Transmission System Expansion Project Phase 11 (TS11) Project, the project costs 60,000 million Baht and consists of the construction of transmission lines of 3,127.927 circuit-kilometers and 7 new substations, expansion of 75 substations, installation of transformers of 25,700 MVA, capacitor bank of 1,770 MVar, static var compensator (SVC) inductive of 50 MVar/capacitive of 100 MVar, and 182 miscellaneous works relating to the transmission system expansion. As of December 2017, the progress of this project was 13.09 percent. It is scheduled to be completed in 2022.

13. Transmission System Improvement Project in Western and Southern Regions to Enhance System Security (TIWS)

The project involves the construction of the 500 kV transmission system lines and additional improvement of the 230 kV transmission systems to cope with the increasing demand for electricity in the South of Thailand in the long run, to increase the capability of the transmission system from the West/Central of Thailand to the South, to promote the expansion of business, industry, and tourism, and to remedy the power outage problem in the South. The project costs 63,200 million Baht and consists of the construction of transmission lines of 2,192 circuit-kilometers and a new substation, expansion of 8 substations, installation of transformers of 4,000 MVA, capacitor bank of 2,120 MVar, static var compensator (SVC) inductive of 50 MVar/capacitive 250 of MVar, and 10 miscellaneous works relating to the transmission system expansion. As of December 2017, the progress of this project was 4.70 percent. It is scheduled to be completed in 2023.

14. Transmission System Development for the Replacement Project of Mae Moh Power Plant Units 4-7 (MMR1)

The transmission system development involves the construction of transmission lines to accommodate the new Mae Moh thermal power plant with the generating capacity of 600 MW to replace the former power plant which has been in operation for more than 25 years and to respond to the government's policy in making use of the local fuel for the maximum benefits. The investment cost for the transmission system is 360 million Baht which consists of the construction of 230 kV transmission

lines of 3.40 circuit-kilometers from the switchyard of the power plant to Mae Moh 3 Substation and the expansion of Mae Moh 3 Substation. As of December 2017, the progress of this project was 90.25 percent. It is scheduled to be completed in 2018.

15. Transmission System Development Project for the Northeast Region, Lower North Region, Central Region, and Bangkok Metropolitan for System Security Enhancement (TIEC)

The project will improve the security of the power system in the Northeast Region, Lower North Region, Central Region including Bangkok Metropolitan to accommodate the renewable and alternative power projects for 25 percent within 10 years (2012-2021) under the Alternative Energy Development Plan (AEDP) of the government and support the ASEAN Power Grid (APG) system. The investment cost of the project is 94,040 million Baht comprising the construction of transmission lines of 2,622 circuit-kilometers, construction of 3 new substations, expansion of 7 substations, and installation of transformers of 12,000 MVA. As of December 2017, the progress of the project was 0.38 percent. It is scheduled to be completed in 2030.

16. Transmission System Development Project for the Upper Northern Region for System Security Enhancement (TIPN)

The project will improve the security of electricity system of the upper Northern Region by the construction of additional transmission lines of 500 kV and 230 kV to supply more electricity to Chiang Mai and Lamphun Provinces. The project will strengthen the security of the transmission system to cope with the rising demand for electricity in the

long run and support power projects of neighboring countries in the future and the ASEAN Power Grid (APG) system. The project has an investment cost of 12,240 million Baht and consists of the construction of transmission lines of 420 circuit-kilometers, construction of a new substation, expansion of 7 substations, and installation of transformers of 3,350 MVA. As of December 2017, the progress of the project was 1.16 percent. It is scheduled to be completed in 2021.

17. Transmission System Development Project for the Replacement Project of South Bangkok Power Plant Phase 1 (SBR1)

The project will support the Replacement Project of South Bangkok Power Plant Units 1-5 of 1,330 MW which will be decommissioned in 2019. The project costs 1,090 million Baht and consists of the construction of transmission lines of 230 kV from the switchyard of the power plant to the South Bangkok substation and the expansion of South Bangkok substation. It is scheduled to be completed in 2020.

18. Transmission System Improvement Project in Lower Southern Region to Enhance System Security (TILS)

The project involves the construction of transmission system of 500 kV from Surat Thani Province to Songkhla Province and the improvement of transmission system of 230/115 kV to increase the security of the power system of the South in a long term and support the electricity demand of the household, business, industry, and tourism from the creation of the ASEAN Economic Community (AEC). The project will also support the linking with the main power plants or renewable power plants

in line with the government's policy responding to fuel diversification scheme, cope with the power failure and the annual overhaul of natural gas pipelines, and support the ASEAN Power Grid (APG) and the power purchase from neighboring countries. The project costs 35,400 million Baht and consists of the construction of 1,409 circuit-kilometers, construction of 2 new substations, expansion of 9 substations, and installation of transformers of 4,000 MVA. It is scheduled to be completed in 2024.

19. Transmission System Development Project for the Replacement Project of Bang Pakong Power Plant Units 1-2 (BRP1)

The project will support the Replacement Project of Bang Pakong Power Plant Units 1-2 of 1,300 MW. The transmission system project costs 784.40 million Baht and consists of the construction of transmission lines of 230 kV of 2.0 circuit-kilometers from the switchyard of the power plant to Bang Pakong substation. It is scheduled to be completed in 2020.

20. Transmission System Development Project for Pha Chuk Hydropower Plant (PCHP)

The objective of the Pha Chuk Hydropower Plant Project is to promote the use of renewable energy and to reduce the proportion of energy import. The project costs 211.50 million Baht and consists of the construction of transmission lines of 115 kV from Pha Chuk substation to T-Tap, 115 kV from Sirikit - Uttaradit of 7 circuit-kilometers, construction of Pha Chuk substation, and expansion of 2 substations. It is scheduled to be completed in 2020.

Transmission System Projects under Approval Process

1. Transmission System Development for Thepha Coal-Fired Power Plant (TPPP)

According to the Power Development Plan of Thailand B.E. 2558-2579 (PDP 2015), a clean coal power plant will be established to respond to the electricity demand of the country, to strengthen the security of the electricity system in the South, and to reduce the risk of dependency on any kind of fuel (Thepha Coal-Fired Power Plant Units 1-2, each of which has the generating capacity of 1,000 MW). As the South of Thailand is increasingly important in economic and tourism aspect, it is necessary to plan for a self-dependent electricity system which is sufficient for the demand and to prevent a blackout in a wide area in the future. The transmission system development project costs 7,480 million Baht comprising the construction of transmission lines of 150 circuit-kilometers, construction of a new substation, and expansion of 5 substations. The project is scheduled to be completed in 2024.

2. Transmission System Development Project for Special Economic Zone Phase 1 (SEZ1)

The objective of the project is to cope with the rising demand for electricity from the operation of the ASEAN Economic Community (AEC) and the government's policy concerning promotion of renewable power plants in the Special Economic Zone in which there is no other power distribution system to support. The project involves the construction/improvement of additional transmission lines and substations of 230 kV and 115 kV in Tak and Mukdahan Provinces so that more electricity can be supplied to the mentioned area,

and long term power security can be achieved. The project costs 2,150 million Baht and consists of the construction of transmission lines of 171 circuit-kilometers and expansion of 5 substations. The project is scheduled to be completed in 2024.

3. Transmission System Development Project for Power Purchase from Independent Power Producers (IPPs) Phase 3 (IPP3)

The objective of the project is to relate the project for Power Purchase from Independent Power Producers (IPPs) with the EGAT power system to respond to the demand for electricity in the Eastern and Central Regions. The project adds to the dynamism in the operation concerning the control and supply of electricity in the Eastern Region including the case of decommissioning of the power plants and the power plants under maintenance. According to the Power Development Plan of Thailand B.E. 2553-2573 (PDP 2010: Revision 3), in which the government has a policy to purchase electricity from the Independent Power Producers (IPPs) of combined cycle power plants, the selected companies are Gulf SRC Company Limited with the generating capacity of 4x625 MW (to be completed in 2020) and Gulf PD Company Limited with the generating capacity of 4x625 MW (to be completed in 2022).

Development Project for EGAT Headquarters' Area

EGAT has an administration policy to have all offices of the headquarters located in the Office Zone which will enhance more efficiency in coordination and make maximum use of available space. Parking lots will be provided for the traffic safety. The master plan of EGAT Headquarters with the concept of an eco forest park will better the employees' quality of life and support the Environmental Management Plan of North Bangkok Combined Cycle Power Plant Project Block 2.

The construction of EGAT Headquarters and parking lots costs 2,180 million Baht and will be completed in 2018. The project consists of the construction of a 20-floor building based on the United States Standard of Green Building of the Leadership in Energy and Environmental Design (LEED) which has the architectural composition as follows:

- Building design of EGAT Headquarters with the total area of 36,367 square meters comprises executive office area, office area, and public area.
- Interior design uses recycled materials, paint, and glue which are environmentally friendly. The design takes into account the pleasant atmosphere.

- For landscape architecture design, there are a retention pond to receive treated water from the building and rainwater for plant watering and water saving, septic tanks to receive water from the retention pond and seeping through natural area, and various plants to reduce the use of grass planting. Many varieties of grass will be planted to save water.



The engineering composition in energy saving and increasing efficiency of the building is as follows:

- For the lighting system, LED lamps are used throughout the building. Daylight sensor is installed along the walls.
- Solar cells with the generating capacity of 50 kW are installed on the rooftop of the auditorium.
- Destination lifts are used.
- Building automatic system (BAS) is used in energy management in the building for maximum benefit.
- Chilled beam air conditioning system is used on floors 4-14 to reduce the energy used in chilling. For other floors, chilled water system is used to save energy and for high efficiency.
- For sanitary system, the water used from the hand washing basin will be designed for reuse in the restrooms of the auditorium.

Research and Development

In 2017, EGAT funded various educational institutions, research institutes, and internal units of EGAT in their research works under 48 projects. Since 2006, a total of 304 projects amounting to more than 2,609 million Baht have been funded. Among 24 completed research works in 2017, a research work in electricity system development and future plans which intends to strengthen the security of power system of the country is as follows:

Development of Self-Starting Vertical Axis Wind Turbine for Electricity Generation of the National Metal and Materials Technology Center (MTEC)

As wind power is among the renewable energy which has a role in electricity generation, EGAT has realized its importance and has installed wind turbines to test the performance of wind power and to implement the demonstration project continuously.

In 1983 and 2009, EGAT installed wind turbines at 2 locations, namely Promthep Cape Power Station in Phuket Province and the upper reservoir of Lamtakong Jolabha Vadhana Power Plant in Nakhon Ratchasima Province respectively.



Wind turbines at Lamtakong Jolabha Vadhana Power Plant

The wind power obtained has been able to substitute the use of oil of 1.1 million liters per year or equivalent to the reduction of greenhouse gas emissions of 2,300 tons per year which is the cause of global warming.



Wind turbines at Promthep Cape

Most of the horizontal axis wind turbines which have been widely used are designed to face the wind. However, the vertical axis wind turbines which have been developed later on have become popular due to their advantages as they can work although there is no device to control the turbines to face the wind.

Therefore, EGAT has supported the research project with the objective of development of the model of self-starting vertical axis wind turbine at the low rate of wind speed during 3-8 meters per second. The turbine will start at the wind speed of 3 meters per second with the generating capacity of 500 W at the wind speed of 8 meters per second.

The development of wind turbine consists of 3 components, namely propeller development, electricity generator development, and control system development to control the turbine at the desirable capacity.

From the installation and testing, the torque of the propeller developed in the project is better than the former propeller. The turbine which consists of the propeller and the electricity generator starts at the wind speed of 3.6 meters per second. The control system does not generate the spark until the turbine reaches 120 rounds per minute which is the point where the turbine can create adequate torque to overcome the electric resistance. From the field testing of the generating capacity, it was found that the turbine had the generating capacity of 400 W at the wind speed of 8 meters per second and the power coefficient of 0.24. Therefore, the research has resulted in the development of a model of self-starting vertical axis wind turbine and has promoted the knowledge in the development of the turbines as a whole.



Organization and Human Resources Development

Human Resources Management

EGAT gives high importance to its employees as a valuable resource which is vital for the growth of the organization. Its human resources management has focused on promoting good, professionally competent, and happy employees with loyalty to the organization. In 2017, EGAT changed its corporate value and culture to SPEED, “Sense of Belonging, Performance Excellence, Ethic and Integrity, Enthusiasm for Innovation, and Devotion to Society.” The new corporate value and culture aims to motivate the employees to have their working behavior supportive of the accomplishment of EGAT’s vision of being an organization which “innovates power solutions for a better life.” Moreover, EGAT has supported the recruitment of competent employees and education by providing scholarships to potential students for bachelor’s degree education. When they work with EGAT, scholarships will be offered for further study.

Human Resources Development

As employees are valuable resources and essential for the sustainable growth of the organization, EGAT has a policy to develop employees to be professionally competent for their mission. They should be moral, happy and have good quality of life and loyalty to the organization.

In 2017, EGAT designed human resources development programs to support the mobilization of EGAT’s new vision of being an organization which “innovates power solutions for a better life.” The human resources management is under 4 strategic dimensions of EGAT comprising electricity innovation (E), growth for sustainability (G), administration excellence (A), and trust and pride of the nation (T). EGAT has introduced the role of innovation in motivating the organization to achieve the goal. The role of human resources development is to support the new business and disruptive technology such as LNG business development, development of renewable and alternative energy, and development of the experts in smart grid, etc.

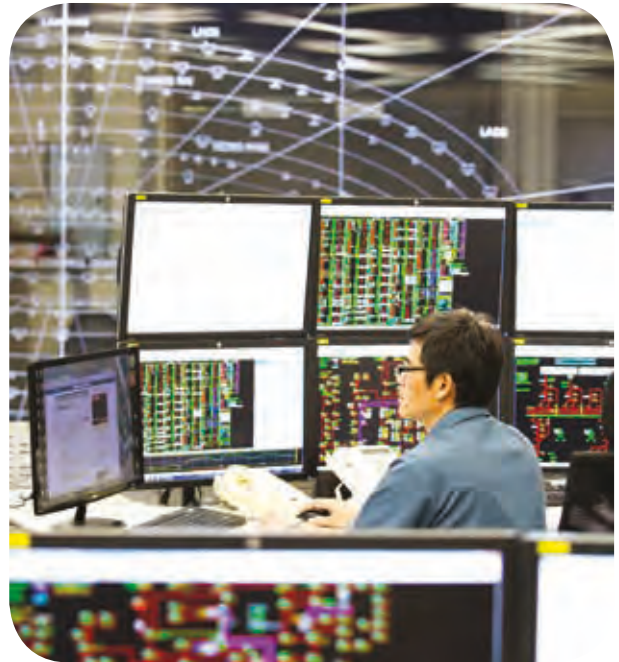
Moreover, EGAT has promoted the use of digital technology in the improvement of human resources development so that the employees will be able to learn anywhere, anytime, and through any tool. Several learning methods have been designed to be suitable for each target group with a focus on adaptability, convenience, self-learning environment, and the applicability to the actual working. The human resources development promotes EGAT as an organization with high proficiency with competent employees who are ready to cope with the growth and changes of the organization.



Information Technology Management

EGAT has given importance to the use of digital technology in mobilizing its business and in every important working process. EGAT aims to become an information-driven organization which is operated by the digital strategy in accordance with EGAT digital development plan which supports changes in business, government's policy, and technology. With the assistance of different technologies coupled with the information control in accordance with the corporate governance and the efficient working processes, EGAT has been able to adapt itself successfully to the changes in electricity business and has been certified by the important international standards such as ISO/IEC 27001: 2013 Information Security Management, ISO/ IEC 29110 Systems and Software Engineering, and Customer Center of Expertise (CCOE). In 2017, EGAT was certified by ISO/IEC 20000: 2011 Information Technology Service Management. The certification provides a standard working process for the transformation of EGAT into a complete digital organization.

During the past year, EGAT applied more digital technology such as Internet of Things (IoT) and in-depth information analysis in its business operation to obtain innovations in the electricity generation and transmission system as well as the mine operation. EGAT has developed the system of EGAT IEC 61850 Substation Automation System (SAS) to support the smart substation system. The system has been used for the first time in Ayutthaya 2 substation and will be extended to other substations to increase their capability to support smart grid system in the future. Moreover, the development of the capital project management system (phase 1)



which will reduce the construction time of the transmission system and control the operation cost in the appropriate limit has been completed. A plan to develop a digital power plant to increase the efficiency and reduce the cost in the power generation process has been initiated. The power plant will help increase the competitiveness and provide cyber and information security as the system will analyze the information and monitor the situation so as to respond timely to the attack or threat.

The dam safety management system which has been developed during the past years has been developed further with the mobile application to be equipped with an early warning system of the occurrence which may have an impact on EGAT's dams. The general public will be informed in time without panic. The system which is easily accessible anywhere, anytime, and with any device helps promote the confidence in the strength and safety of EGAT dams in the critical time.

Corporate Social Responsibility

EGAT regards that the development of society, community, and environment is as important as the development of power source and transmission system. EGAT's activities in social responsibility constitute a part of the business operation and contribute to the sustainable growth of EGAT. Both CSR in process and CSR after process of EGAT are in line with the international standards. EGAT has implemented CSR activities with participation of all sectors to achieve their recognition and sustainable development of quality of life of the community and environment.

Community Relations in the Power Development Areas

Based on the participatory process, EGAT has carried out its activities in accordance with the development principle of His Majesty King Bhumibol Adulyadej “to understand, to reach, and to develop” as follows:

- **Raising awareness and promoting understanding and participation in activities of power development:** The objective of this activity is to raise awareness among the people of the increasing demand for electricity due to the economic growth and social expansion which result in the need of more power plants. EGAT has promoted participatory process in various projects including Replacement Project of South Bangkok Power Plant Phases 1-2, Replacement Project of

Bang Pakong Power Plant Units 1-2, Replacement Project of Wang Noi Power Plant Units 1-2, Expansion of Replacement Project of Mae Moh Power Plant Units 4-7, Expansion of Krabi Power Plant Project, Thepha Coal-Fired Power Plant Project in Songkhla Province, as well as areas for renewable power development projects in Thap Sakae District, Prachuap Khiri Khan Province, and in Sikhio District, Nakhon Ratchasima Province.



- **Development of the quality of life of the community with participation with all sectors:** The objective of the activity is to participate with all sectors in upgrading the quality of life of communities around the existing power plants and in the areas of new power development projects through various activities to achieve sustainable development with participatory process. Such activities include education, sports, arts and culture, local tradition, health and sanitation, occupational promotion of both primary job and part-time job, public utilities, and assistance to disaster victims and the needy people.

- **Promotion of natural resource conservation:** EGAT has raised awareness of the community about natural resource conservation and promoted environmental protection through several projects including reforestation of the land forest and mangrove forest in Thepha District of Songkhla Province, Ubon Ratchathani Province, and Bang Pakong District of Chachoengsao Province as well as environmental conservation through the use of Effective Microorganisms (EM) in the areas around North Bangkok Power Plant, Bang Pakong Power Plant, and in Thepha District of Songkhla Province.



Study of Environmental Impact of Power Development Projects

In 2017, EGAT conducted 5 types of environmental impact assessment, namely Environmental Health Impact Assessment (EHIA) for the projects or activities which may cause severe impact on the community in the quality of environment, natural resources, and health; Environmental Health Impact Assessment (EIA); Initial Environmental Examination (IEE); Environmental Site Assessment (ESA); and Coefficient of Performance (CoP). The assessment has been conducted on the following power development projects:

Project approved by the National Environment Board

- Replacement Project of Bang Pakong Power Plant Project Units 1-2 (construction project of a combined cycle power plant with the gross capacity of approximately 1,450 MW using natural gas as primary fuel and diesel oil as supplementary fuel)

Projects awaiting approval

- Expansion of Replacement Project of Mae Moh Power Plant Units 4-7 (construction project of a thermal power plant with the gross capacity of approximately 655 MW using lignite from Mae Moh Mine as fuel)
- Project on Construction of Electricity Network System of 500 kV between Chombueng - Bang Saphan 2 (under the project on the electricity transmission system improvement for the western and southern regions of Thailand)
- Project on Construction of Electricity Network System of 500 kV between Bang Saphan 2 - Surat Thani 2 (under the project on the electricity transmission system improvement for the western and southern regions of Thailand)

Projects under study and preparation of report of environmental impact assessment

- Replacement Project of Wang Noi Power Plant Blocks 1-2 (construction project of a combined cycle power plant with the gross capacity of approximately 1,470 MW using natural gas as primary fuel and diesel oil as supplementary fuel)
- Replacement Project of South Bangkok Power Plant Project Phase 2 (construction project of a combined cycle power plant with the gross capacity of approximately 1,470 MW using natural gas as primary fuel and diesel oil as supplementary fuel)
- Project on Floating Storage and Regasification Unit (FSRU) (a project concerning provision of fuel storage to enhance security for the long-term acquisition of natural gas)

Environmental Protection

Environmental Quality Monitoring

EGAT has continuously monitored the quality of the environment resulting from the operation in electricity generation in terms of water quality, aquatic ecosystem, ambient air quality, air quality emitted from the stack, noise level and electromagnetic field, as well as garbage and waste disposal. The objective is to prevent various impacts which may occur from the operation and to control every step of the operation to strictly comply with the limits specified in the standards which are enforced by the law and to improve the environmental quality as a whole.

Greenhouse Gas Management

To become an organization with sustainable development and social responsibility through environmental conservation, EGAT has given importance to the activity to reduce the impact of climate change in accordance with EGAT's long-term plan in greenhouse gas management B.E. 2561-2573 (2018-2030) which has been aligned with the national policy and strategy and supports the Nationally Determined Contribution (NDC) in greenhouse gas reduction.

In 2017, the following 12 EGAT units prepared the Carbon Footprint for Organization (CFO) according to ISO International Standard 14064-1 leading to the determination of guidance to reduce greenhouse gas emissions: Mae Moh Power Plant, Bang Pakong Power Plant, South Bangkok Power Plant, Wang Noi Power Plant, Chana Power Plant, North Bangkok Power Plant, Nam Phong Power Plant, Krabi Power Plant, Mae Moh Mine, EGAT Workshop and Spare Parts Center at Nong Chok Office, EGAT Headquarters, and EGAT Operation and Maintenance Center at Sai Noi Office.

EGAT has a strong determination to achieve its target of greenhouse gas reduction of 4 million tons of carbon dioxide (MtCO₂) in 2020. In 2017, EGAT reported on the assessment of the greenhouse gas reduction which was a result of EGAT's measures in power generation from renewable energy, in efficiency improvement of its power plants, in power generation by clean technology, and in standard requirements and No.5 labeling in 2016. According to the report, the amount of greenhouse gases reduced was 3,959,171 tCO₂.

Moreover, EGAT has made an attempt to reduce greenhouse gas through national and international projects. In 2017, through the Clean Development Mechanism (CDM), the CDM Executive Board issued Certified Emission Reduction Units (CERs) to EGAT for the following projects: Energy Efficiency Improvement of Mae Moh Power Plant Project Units 10-11, Downstream Hydropower Plant of Mae Klong Dam Project, and Downstream Hydropower Plant of Pasak Jolasid Dam Project, which could reduce the amount of greenhouse gas of 377,982 tCO₂. For the national project in greenhouse gas reduction, EGAT has carried out the voluntary greenhouse gas reduction in accordance with the Thailand Voluntary Emission Reduction Program (T-VER) of the Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) which has issued T-VER of 807 tCO₂ for EGAT's project of greenhouse gas reduction from improving the lighting system of the substations.



Environmental Network Activities

EGAT has organized activities concerning environmental network to develop its relationship with communities and stakeholders. The theoretical and practical activities and exchange of views between EGAT and communities have promoted the environmental awareness and the understanding of the importance of environment and their involvement in environmental protection which will constitute an important part in monitoring the quality of environment of their community. The activities were organized in the areas around the power plants and the areas of power development projects as follows:

- Wang Noi Power Plant, Wang Noi District, Ayutthaya Province
- Chana Power Plant, Chana District, Songkhla Province
- South Bangkok Power Plant, Mueang District, Samut Prakan Province
- Thap Sakae Solar Power Plant, Thap Sakae District, Prachuap Khiri Khan Province

Social Activities

EGAT ENGLISH CAMP 1/2017

EGAT organized an activity “EGAT English Camp 1/2017: Devotion to Society & Environment” during June 17-18, 2017 at Bang Pakong Power Plant, Bang Pakong District, Chachoengsao Province. The participants in the activity were 99 students and 14 teachers from 5 secondary schools in Bang Pakong District.

The activity was opened for students to use their creative idea in inventing new tools to reduce the use of energy based on the information provided by EGAT.



EGAT ENGLISH CAMP 2/2017

EGAT organized an activity “EGAT English Camp 2/2017” during August 22-23, 2017 to develop the English language skill for the students of upper secondary schools in the area around Krabi Power Plant. The activity took place at Mueang Krabi School, Mueang District, Krabi Province and was attended by 100 students from 4 schools.

Apart from the knowledge in English communication, the students also obtained knowledge and understanding in electricity. They would become a member of the communication network of EGAT in disseminating information on electricity to their family, friends, and community.



Voluntary Parentage Project for Children in the Border Areas

EGAT has provided scholarships to students of 5 secondary schools and universities in Chiang Mai Province. The schools to which scholarships were offered comprised Wiang Haeng Wittayakom School, Ban Namon School, Ban Piang Luang School, and Ban Pang Po School which are located in Wiang Haeng District, and Fang Chanupathum School in Fang District. As of today, 27 scholarships with the amount of more than 11,000,000 Baht were given by EGAT.

For the university students, additional 9 students who received continuous scholarship under the project and graduated from university (bachelor's/master's degree) have returned to work in their native towns or nearby areas. Presently, the total number of graduates is 88.



Reforestation Project

In 2017, EGAT implemented the reforestation project of “Protection of forest and water to follow in the royal footsteps.” The reforestation project covers an area of 6,000 rai in Nan and Phrae Provinces and mangrove forest of 3,000 rai in Chanthaburi Province. The project was implemented in collaboration with various departments under the Ministry of Natural Resource and Environment, namely Royal Forest Department, Department of National Parks, Wildlife and Plant Conservation, and Department of Marine and Coastal Resources. The above mentioned departments are responsible for supervising the reforestation and forest conservation according to the forestry principles with the financial support of EGAT.

EGAT's Reforestation Project also supports rural economic development such as income distribution and generating local employment for tree planting etc. Today, the reforestation covers an area of more than 460,000 rai.



EGAT Biological Way of Life for Sustainable Development Project

During February 1-6, 2017, EGAT organized an exhibition on EGAT Biological Way of Life for Sustainable Development Project in the 38th National Conference of the Future Farmers of Thailand (F.F.T.) under the Patronage of Her Royal Highness Princess Maha Chakri Sirindhorn in Uthai Thani Province. EGAT also participated in welcoming Her Royal Highness Princess Maha Chakri Sirindhorn to preside over the conference. On August 21, 2017, EGAT also organized an activity “Planting on Mother’s Day, Harvesting on Father’s Day” at the demonstration paddy field of an area of 1 rai in the Learning Center on the Royal Philosophy in Nam Phrathai Park at EGAT Headquarters, Nonthaburi Province. The community nearby EGAT Headquarters also participated in the activity. The demonstration of an organic rice planting procedure according to EGAT Biological Way of Life for Sustainable Development Project was conducted from the steps of plot preparation to harvesting. The harvesting was carried out on December 8, 2017.

In 2017, EGAT conducted lectures, demonstration, exhibitions, and seminars under EGAT Biological Way of Life for Sustainable Development Project on a continuous basis in several areas. Moreover, EGAT extended cooperation concerning the project with the Office of Vocational Education Commission. Additional 34 educational institutions expressed their interest to participate in the project. The joint committee between EGAT and Office of Vocational Education Commission conducted assessment of the work in 8 categories of the successful candidates from 4 regions. The winning candidates at the regional level submitted 32 works for assessment.

Moreover, the assessment of the social return on investment (SROI) was conducted by ERM Siam Co., Ltd., a consultant in SROI assessment.

The company collected information from many communities, namely None Yao Community in Nong Bua Lam Phu Province, Ban Dong Rueng Community and San Ton Fan Community in Udon Thani Province, Ban Ongthi in Kanchanaburi Province, and Ban Pa Mai in Kanchanaburi Province.



Waen Kaew Project in Honor of Her Royal Highness Princess Maha Chakri Sirindhorn

In 2017, the implementation of Waen Kaew Project was on the provision of medical service to the poor people with eye problem. The 14 mobile units provided eye examination service to 7,820 people. The project received a donation of 50,425.50 Baht.

The project has continued to organize campaigns to seek financial support for eyeglasses and medical devices relating to eye examination on a long term basis. The total financial support received was 118,800 Baht.



Demand Side Management (DSM)

EGAT has implemented the Demand Side Management Project by promoting energy and environment conservation through several measures and guidelines to reduce the unnecessary use of electricity, fuel import, and carbon dioxide (CO₂) emissions and to maintain the overall stability of the electricity generation during the peak period. The implementation of several measures are as follows:

1. Energy Saving Equipment

1.1 No. 5 Labelling

In 2017, EGAT implemented the project on energy saving by No.5 Labeling by promoting the energy efficiency labeling for 30 products comprising 23.3 million labels making the total labels of 338.7 million. In 2017, the demand for electricity was reduced by 261 MW, and the electricity of 1,530 million kWh was saved. The carbon dioxide emissions with the amount of 798,000 tons was reduced.

In 2017, to promote the energy saving shirt among the people, No.5 labeling was used with No.5 shirt (shirt produced from the material which, according to the standard, does not wrinkle after being washed and does not require ironing). The project has been implemented with the cooperation of the Thailand Textile Institute and 22 manufacturers. The Memorandum of Understanding was signed on September 20, 2017. The labeling would start in January 2018. It is expected that the sale of 1.7 million shirts per year would save energy of 7.2 million kWh per year.

Moreover, the standard requirements have been developed for the top-loading twin tub washing machine, and the No.5 labeling was started in September 2017.

1.2 Promotion of the use of light-emitting diode (LED)

- EGAT has promoted the market of LEDs to be accessible by consumers with lower market price. The producers of LEDs of E 27 of 5-8 W certified with No.5 label were invited to put their products in EGAT package and sell through the sale channels throughout the country at the affordable price. In this connection,

EGAT organized “Thailand Energy Efficiency Week 2017” during May 11-13, 2017 to promote the use of LEDs among consumers and to expand the LEDs market in the country.

- The project on the study and research of the use of LEDs in relation with the ecosystem conservation was conducted by using the LEDs with cold weather plants instead of incandescent lamps. On September 6, 2017, EGAT signed a Memorandum of Understanding with 4 organizations comprising the Royal Project Foundation, Department of National Parks, Wildlife and Plant Conservation, Chiang Mai University, and the National Astronomical Research Institute of Thailand (Public Organization) to conduct a research on the reduction of the impact of the light pollution on the ecosystem in the Intanon National Park which is an area where a lot of light is used in planting chrysanthemums. The excess of light from the compact fluorescent lamps (CFLs) made a spread reflection to the sky resulting in a wide light pollution in the sky.

EGAT has experimented in substituting the compact fluorescent lamps for the LEDs of which the lighting property is downward to direction in use. The use of LEDs has reduced the spread reflection to the sky and saved more than 50 percent of electricity. From the experiment, the spread reflection to the sky has been reduced tremendously. From the survey of agriculturalists’ satisfaction, it has been found that they have great satisfaction as the plant still grows normally and gives the same productivity, whereas the cost in electricity can be reduced more than half of the original cost.

2. Energy Saving Building

EGAT has supported and promoted the efficient use of electricity in buildings which include housing, business building, and factory that require a large amount of electricity. EGAT intends to increase awareness of the people about the efficient use of electricity and the need for improvement of the building to be energy saving, to promote the design and use of energy efficiency construction materials for new buildings so that the users can benefit from the energy reduction.

2.1 Specifying requirements for energy efficiency for each type of building

- In 2017, EGAT, in cooperation with King Mongkut's Institute of Technology Ladkrabang, conducted a study on the principles and requirements for energy efficiency buildings of different types in order to promote the development of design and construction materials for energy efficiency buildings.

- EGAT conducted a pilot project on the study of measures/technologies for energy conservation in the industrial premises by analyzing the use of energy in the industrial premises and recommending the improvement of energy efficiency. The objective of the study is to make preparation for the enforcement of Energy Efficiency Resources Standards (EERs) in 2018.



2.2 Cooperation with the National Housing Authority on the development of No. 5 housing

- EGAT cooperated with the National Housing Authority in the implementation of the project on energy efficiency housing and signed the Memorandum of Understanding with the National Housing Authority on the development of design and construction of energy efficiency housing (No.5 housing) on May 2, 2017 at the United Nations Conference Center.

- In the implementation of the pilot project of the National Housing Authority, EGAT conducted assessment of the energy efficiency and gave recommendations concerning the improvement of the design and construction materials to meet the requirements of EGAT's standards for the low-income and middle-income housing. It is expected that the improvement of the design and construction materials of Rangsit, Rayong, and Si Sa Ket Housing Projects which would be completed in 2018 would result in the energy saving of around 0.9 million kWh, reduction in electricity charge of around 3.6 million Baht per year, and the carbon dioxide emission more than 489 tCO₂.

3. Energy Saving Habit

Under the Green Learning Room Project, EGAT has incorporated the energy reduction activity in the learning process of 414 schools in every province to transfer the knowledge and develop the energy efficiency habit and environmental conservation to the youth. The activity has been conducted to achieve more tangible result and to extend the result to the students' families and communities. The project comprises the following activities:

- The activity of upgrading “Green Learning Room” to the standard of “Green Learning School” (model school in energy and environmental conservation) has been conducted on a continuous basis since 2009. At present, a total number of 177 schools have achieved EGAT’s “Green Learning School” standards.

- The activities of “Low Carbon Schools” (reduction of energy in school) and “From Low Carbon Schools to Low Carbon Community” (reduction of energy in students' houses) could reduce the use of electricity more than 1.7 million kWh, the expense of more than 6 million Baht, and carbon dioxide emissions from electrical appliances of more than 900 tCO₂e.

- The activity of “No.5 Energy-Saving Community” was organized at the Ban Klong Yang Community, Krabi Province. Ban Klong Yang Community which comprises 47 households is the first model energy-saving community in the South of Thailand. The activity focused on the energy reduction planning. If the community could achieve its target in energy reduction, it would be able to save electricity of approximately 16,920 kWh per year or approximately 67,700 Baht and reduce carbon dioxide emissions of 9.8 tCO₂e.

- EGAT cooperated with the Department of General Education in the establishment of a learning center in energy and environmental conservation at the Primary Educational Service Area Office, Area 3, Khon Kaen Province to promote the learning process and transfer knowledge through the youth to the local people.

- EGAT has developed the activity “Energy Reduction in Schools” to the project “Low Emission Support Scheme (LESS)” to apply for certification of greenhouse gas reduction from the Thailand Greenhouse Gas Management Organization (Public Organization) in order to include the school activities such as replacement of energy saving lamps in schools under the Green Learning Room Project and “Low Carbon Schools” activities to reduce electricity consumption in the schools and students' houses etc. to be a part of CO₂ reduction of the country.



3.1 Implementation of promotional measures in energy conservation

RAC NAMA Project

EGAT signed a Memorandum of Understanding with the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) to implement the project on Refrigeration and Air Conditioning Nationally Appropriate Mitigation Actions (RAC NAMA) on December 20, 2017. The project provides financial support to promote the development and use of cooling equipment such as air conditioner, refrigerator, freezer, and chiller using the environmentally-friendly and energy-saving refrigerant. The project responds to the mission of the Thai government represented by Thailand's National Climate Change Committee which has committed to participating in the Nationally Determined Contributions (NDCs) concerning the climate change of Thailand with the target of greenhouse gas reduction of 20-25 percent by 2030.

Promotion of electric vehicles (EVs)

- **Management of EV charging by smart grid:** In 2017, four EV charging stations were installed at EGAT Learning Center of EGAT Headquarters. The EV charging station by smart grid technology is a part of the central management system (CMS) which analyzes data from the charging stations throughout the country according to the increasing trend of electric vehicles based on the promotion plan of electric vehicles in Thailand. According to the plan, in 2036, there will be 1.2 million electric vehicles in Thailand which will have a direct impact on the electricity system of the country.

- **Electric motorcycle and minibus:** In 2017, EGAT made a trial use on 5 electric motorcycles and a minibus. The trial use aimed to make a demonstration as a leader in the electricity business and to study the behavior of using electric vehicles and electricity, in order to prepare a national plan to cope with the wide use of electric vehicles.



Promotion of No.5 brown rice

EGAT provided rice mills to 9 community enterprises around the dams, power plants, and along the transmission lines. Moreover, EGAT has implemented 2 pilot projects, namely Ban Khok Thieng Farmers Enterprise, Sirindhorn Dam in Ubon Ratchathani Province and EGAT Organic Agricultural Community Enterprise, Sangkha Substation in Surin Province. The opening ceremony was held to grant the rice mills for these two enterprises. Furthermore, to help the farmers who had encountered the problem of price, EGAT has given support in the sale of rice. A campaign was made to promote the preference of No.5 brown rice through the activity "Tasty Menu, No.5 Brown Rice."



EGAT Learning Centers

EGAT learning centers have been established to serve as the centers of knowledge and information on energy for the youth, students, and the general public and as a media in public relations on the mission of EGAT. EGAT learning centers are as follows:

EGAT Learning Center	Schedule	Budget (Million Baht)	Project Cost (Million Baht)	Status in 2017
1. Mae Moh Mine Museum in Honor of King Prajadhipok	2014 - 2016	125.000	96.626	Completed
2. EGAT Learning Center: Srinagarind Dam	2012 - 2013	40.000	39.698	Completed
3. EGAT Learning Center: Chana	2008 - 2013 (Extend to 2018)	700.000	124.502	Completed
4. EGAT Learning Center: Headquarters			447.048	Construction
5. EGAT Learning Center: Thap Sakae	2014 - 2015	137.000	86.877	Completed
6. EGAT Learning Center: Lamtakong	2016 - 2017	263.000	-	Bidding
7. EGAT Learning Center: San Kamphaeng	2019 - 2020			Design
8. EGAT Learning Center: Pha Bong	2017 - 2019	79.500	-	Planning



EGAT Learning Center: Headquarters

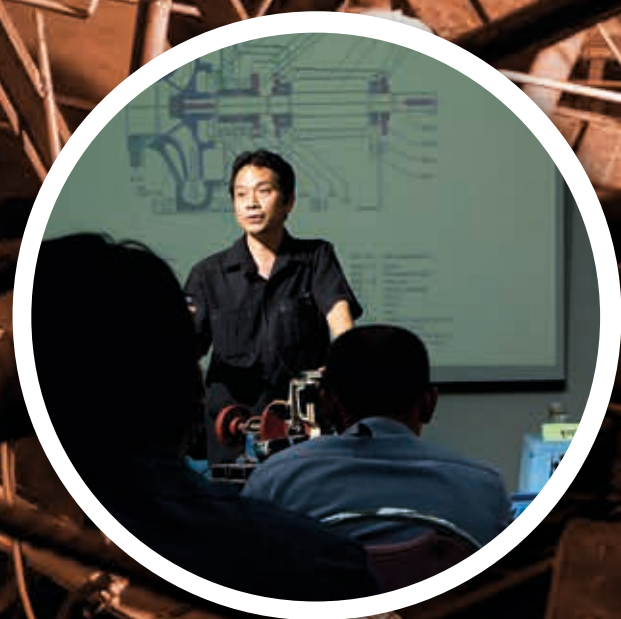
Smart Innovation

EGAT's support of researches, inventions, and innovations has led to the continuous achievements and rewards of more than 200 projects at the national and international levels. Among these are 60 projects which were nominated for international contests. The result of the researches have been further developed to increase the efficiency and stability for the electricity system of the country.

With smart innovation, EGAT will move forward in strengthening its power stability for the sustainable and good living condition of the Thai people.

“Innovate Power Solutions for a Better Life”





Events



Her Royal Highness Princess Maha Chakri Sirindhorn presided over the 38th National Conference of the Future Farmers of Thailand (F.F.T.) under the Patronage of Her Royal Highness Princess Maha Chakri Sirindhorn. The Princess observed the EGAT exhibition on “Continuing the Royal Initiatives of His Majesty King Bhumibol Adulyadej” at Uthai Thani Agricultural and Technology College at Nong Kae Sub-district, Mueang District in Uthai Thani Province on February 3, 2017.



Her Royal Highness Princess Maha Chakri Sirindhorn presided over the 3rd technical seminar of the project “Nan Forest Conservation.” The Princess observed the EGAT exhibition on “Decoding the Royal Philosophy to Solve the Problem of Forest and Water in Nan Province” organized at the Learning and Service Center, the affiliate of Chulalongkorn University of Nan Province at Pha Sing Sub-district, Mueang District, Nan Province on March 6, 2017.



Her Royal Highness Princess Maha Chakri Sirindhorn presided over the launching of the project “Restoration of Mangrove Forest” of the Department of Marine and Coastal Natural Resources in cooperation with the National Legislative Assembly at Ban Samed Ngarm Community, Nong Bua Sub-district, Mueang District, Chanthaburi Province on May 19, 2017. On this occasion, EGAT reported the restoration of degraded forest by EGAT’s Reforestation Project of Watershed Forest and Mangrove Forest.

EGAT organized the religious ceremony in memory of His Majesty King Bhumibol Adulyadej after 1 year of His Majesty's passing. The ceremony was held on October 11, 2017 at Kamthon Sindhvananda Sports Complex, EGAT Headquarters in Bang Kruai District, Nonthaburi Province.



EGAT together with Electricity Generating Public Company Limited and Ratchaburi Electricity Generating Holding Public Company Limited donated 20 million Baht to help the flood victims in the southern provinces through the television program “Pracharath (Public-Private Collaboration) Helps the Southern Flood Victims” at Santi Maitri Building of the Government House on January 15, 2017.



EGAT received two Thailand Quality Class (TQC) awards in the 15th Thailand Quality Award 2016 for its quality management system of Bang Pakong Power Plant in Chachoengsao Province and Nam Phong Power Plant in Khon Kaen Province. The award presentation was organized by the National Productivity Institute, a network of the Ministry of Industry and held at the small auditorium of Thailand Cultural Center in Bangkok on March 23, 2017.



EGAT Governor, Mr. Kornrasit Pakchotanon, and Governor of Prachuap Khiri Khan Province, Mr. Thavee Narissirikul, co-presided over the opening of Thap Sakae Power Plant and EGAT Learning Center at Thap Sakae District in Prachuap Khiri Khan Province. The power plant and the learning center, the pride of Thap Sakae Community, serve as the place for research and development of electricity generation by solar power and a learning center in energy, as part of EGAT's operation.





EGAT Governor, Mr. Kornrasit Pakchotanon received the Outstanding State Enterprise Award in the category of outstanding state enterprise management in the Presentation of Outstanding State Enterprise Awards 2017. The presentation was organized by the Office of the State Enterprise Policy at Centara Grand and Bangkok Convention Center at Central World, Bangkok on August 18, 2017.



EGAT was presented the award of outstanding promotion of conservation of energy and renewable energy in the category of associations, organizations, and government agencies for the 6th consecutive year in the Thailand Energy Awards 2017. The award presentation was organized by the Department of Renewable Energy Development and Energy Conservation, Ministry of Energy, at Sirikit National Convention Center in Bangkok on August 21, 2017.



EGAT in cooperation with the Office of the Non-Formal and Informal Education opened the exhibition zone entitled “Electric City” on the 3rd floor of Science Museum Building, the Science Center for Education (Bangkok Planetarium) on September 5, 2017. The exhibition serves as a place for learning and experiencing about electricity including electricity conservation to the youth.



EGAT organized the event “Sparking DSM” to present the prizes to successful contestants in the wrinkled clothing contest at the university level. EGAT also signed a memorandum of understanding with the manufacturers of No.5 clothing or the clothing which does not require ironing. The plaques of energy saving No.5 for 2017 were presented to the private sector participating in the project. The event was held at Centara Grand at Central Plaza Ladprao in Bangkok on September 20, 2017.

EGAT received the first prize of ASEAN Coal Awards 2017 for Best Practice for Surface Coal Mining Category for the work “Mae Moh Lignite Mine” and the first runner up prize for Corporate Social Responsibility (CSR) Category for the work “The Community Collaboration for Sustainable Development in Mae Moh District.” The award presentation was held in the ASEAN Energy Business Forum 2017 at Conrad Hotel in Manila, the Philippines on September 27, 2017.



The Ministry of Energy together with EGAT and its affiliates and the community in Nonthaburi Province participated in rice harvesting at the demonstration paddy field of EGAT Biological Way of Life under the Royal Philosophy at EGAT Headquarters, Nonthaburi Province on December 8, 2017. This was the second phase of the activity “Planting on Mother’s Day, Harvesting on Father’s Day.” The harvested rice was planted since August 2017.



EGAT received the Award for Outstanding Sustainable Report 2017 for the 4th consecutive year since 2014. The award presentation took place on December 14, 2017 in the CSR Club Conference 2017 organized by the CSR Club of the Thai Listed Companies Association, Office of Securities and Exchange Commission, and Thaipat Institute, at Professor Sangwien Intrawichai Auditorium of the Stock Exchange of Thailand, Bangkok.



Key Statistical Data

System Installed Generating Capacity

Type of Power Plant	2017		2016		Increase/ (Decrease)
	MW	Percentage	MW	Percentage	Percentage
EGAT's Power Plants					
Thermal	3,647.00	8.59	3,647.00	8.78	-
Combined cycle	8,896.00	20.96	9,210.00	22.16	(3.41)
Hydropower	2,952.40	6.96	2,952.40	7.11	-
Renewable energy	45.33	0.11	45.33	0.11	-
Diesel	30.40	0.07	30.40	0.07	-
Other	500.00	1.18	500.00	1.20	-
Subtotal	16,071.13	37.87	16,385.13	39.43	(1.92)
Purchase from					
<u>Domestic Private Power Plants</u>					
IPPs (including EGAT affiliates)	14,948.50	35.23	14,948.50	35.97	-
SPPs	7,536.02	17.76	6,345.02	15.27	18.77
<u>Neighboring Countries</u>					
Laos	3,577.60	8.43	3,577.60	8.61	-
EGAT-TNB Interconnection System	300.00	0.71	300.00	0.72	-
Subtotal	26,362.12	62.13	25,171.12	60.57	4.73
Grand Total	42,433.25	100.00	41,556.25	100.00	2.11

Monthly Peak Generation Requirement

Month	Monthly Peak Generation Requirement (MW)		Increase/(Decrease)	
	2017	2016	MW	Percentage
January	25,390.40	25,312.30	78.10	0.31
February	26,240.10	25,103.51	1,136.59	4.53
March	27,326.30	27,242.00	84.30	0.31
April	27,708.00	29,403.70	(1,695.70)	(5.77)
May*	28,578.40	29,618.80	(1,040.40)	(3.51)
June	26,747.20	26,471.20	276.00	1.04
July	26,129.80	25,475.10	654.70	2.57
August	26,974.50	26,329.05	645.45	2.45
September	27,500.30	25,790.60	1,709.70	6.63
October	26,074.60	26,013.20	61.40	0.24
November	26,749.40	26,145.30	604.10	2.31
December	26,553.70	25,272.40	1,281.30	5.07
Yearly Peak Generation Requirement	28,578.40	29,618.80	(1,040.40)	(3.51)

* 2017 peak generation requirement occurred on Thursday, May 4, 2017 at 14.20 hours

* 2016 peak generation requirement occurred on Wednesday, May 11, 2016 at 22.28 hours

Monthly Energy Generation Requirement

Month	Monthly Energy Generation Requirement (Million kWh)		Increase/(Decrease)	
	2017	2016	Million kWh	Percentage
January	14,466.93	14,547.62	(80.69)	(0.55)
February	13,942.11	13,830.54	111.58	0.81
March	16,981.62	16,771.04	210.58	1.26
April	15,807.21	16,627.68	(820.47)	(4.93)
May	16,869.85	17,576.34	(706.49)	(4.02)
June	16,259.52	15,906.46	353.06	2.22
July	16,030.58	15,816.37	214.21	1.35
August	16,706.06	16,388.48	317.58	1.94
September	16,417.80	15,673.83	743.97	4.75
October	15,848.00	15,913.70	(65.71)	(0.41)
November	15,331.01	15,478.38	(147.37)	(0.95)
December	14,274.27	14,469.20	(194.93)	(1.35)
Total	188,934.97	188,999.64	(64.68)	(0.03)

Gross Energy Generation and Purchase (by Type of Fuel)

Source	2017		2016		Increase/ (Decrease)
	Million kWh	Percentage	Million kWh	Percentage	Percentage
EGAT's Power Plants					
Natural gas	38,916.80	20.60	46,727.46	24.72	(16.72)
Coal (lignite)	16,925.69	8.96	17,078.44	9.04	(0.89)
Renewable energy (hydropower and others)	4,593.22	2.42	3,300.48	1.75	39.17
Fuel oil and palm oil	93.33	0.05	267.45	0.14	(65.10)
Diesel oil	188.46	0.10	164.02	0.09	14.90
Other	105.81	0.06	228.07	0.12	(53.61)
EGAT's Total Generation	60,823.31	32.19	67,765.92	35.86	(10.24)
Purchase from					
Domestic Private Power Plants					
<u>IPPs</u>					
(including EGAT affiliates)					
Natural gas	48,453.64	25.65	51,241.49	27.11	(5.44)
Coal (bituminous)	15,112.63	8.00	16,138.07	8.54	(6.35)
Fuel oil	98.91	0.05	388.90	0.20	(74.57)
Diesel oil	3.82	-	69.50	0.04	(94.51)
Subtotal	63,669.00	33.70	67,837.96	35.89	(6.15)
<u>SPPs</u>					
Natural gas	32,644.34	17.27	26,792.21	14.17	21.84
Coal	1,695.51	0.90	1,882.31	1.00	(9.92)
Hydropower	22.33	0.01	18.92	0.01	18.04
Fuel oil	201.26	0.11	185.54	0.10	8.47
Biomass	3,620.41	1.92	3,398.24	1.80	6.54
Solar power and wind power	1,930.27	1.02	1,287.07	0.68	49.97
Subtotal	40,114.12	21.23	33,564.29	17.76	19.51
Neighboring Countries					
Laos	24,196.64	12.81	19,716.86	10.43	22.72
Malaysia	131.90	0.07	114.61	0.06	15.08
Subtotal	24,328.54	12.88	19,831.47	10.49	22.68
Total Energy Purchase	128,111.66	67.81	121,233.72	64.14	5.67
Grand Total	188,934.97	100.00	188,999.64	100.00	(0.03)

Energy Sale

Customer	2017		2016		Increase/ (Decrease)
	Million kWh	Percentage	Million kWh	Percentage	Percentage
Metropolitan Electricity Authority (MEA)	52,646.13	28.44	56,585.63	30.58	(6.96)
Provincial Electricity Authority (PEA)	130,237.60	70.35	125,798.07	67.98	3.53
Direct customers	1,282.80	0.69	1,591.85	0.86	(19.41)
Standby power supply	175.79	0.09	162.65	0.09	8.08
Electricité du Laos (EDL)	365.27	0.20	595.02	0.32	(38.61)
Tenaga Nasional Berhad (TNB) - Malaysia	132.69	0.07	157.84	0.09	(15.93)
Electricité du Cambodge (EDC)	86.80	0.05	146.89	0.08	(40.91)
Other minor customers	203.81	0.11	8.56	-	2,280.91
Total	185,130.89	100.00	185,046.51	100.00	0.05

Average Energy Sales Price

Customer	2017	2016	Increase/ (Decrease)
	Baht/kWh	Baht/kWh	Percentage
Metropolitan Electricity Authority (MEA)	2.63	2.65	(0.75)
Provincial Electricity Authority (PEA)	2.62	2.67	(1.87)
Direct customers	2.88	2.88	-
Standby power supply	5.76	6.04	(4.64)
Electricité du Laos (EDL)	1.69	1.64	3.05
Tenaga Nasional Berhad (TNB) - Malaysia	2.47	2.09	18.18
Electricité du Cambodge (EDC)	3.43	3.47	(1.15)
Overseas independent power producers	4.92	7.19	(31.57)
Other minor customers	3.35	4.34	(22.81)
Overall Average Sales Price	2.63	2.67	(1.50)

Transmission System

Voltage Level (kV)	2017			2016		
	Line Length (Circuit-Kilometers)	Number of Substations	Transformer Capacity (MVA)	Line Length (Circuit-Kilometers)	Number of Substations	Transformer Capacity (MVA)
500	5,830.836	17	32,199.78	5,025.341	13	24,199.99
230	14,423.134	79	59,500.01	14,793.652	78	56,960.04
132	8.705	-	133.40	8.705	-	133.40
115	13,088.645	127	14,668.16	13,497.315	127	14,524.99
69	18.800	-	-	18.800	-	-
300 (HVDC)	23.066	-	388.02	23.066	-	388.02
Total	33,393.186	223	106,889.37	33,366.879	218	96,206.44

Fuel Consumption

Type of Fuel	Consumption		Increase/(Decrease) Percentage
	2017	2016	
Natural gas (million cubic feet)			
- EGAT	305,735.35	370,981.58	(17.59)
- IPPs	388,177.66	428,353.71	(9.38)
Total	693,913.01	799,335.29	(13.19)
Fuel oil (million liters)			
- EGAT	25.05	73.73	(66.02)
- IPPs	26.70	104.97	(74.57)
Total	51.75	178.70	(71.04)
Coal (million tons)			
- EGAT	15.90	16.41	(3.09)
- IPPs	18.43	16.54	11.44
Total	34.33	32.95	4.21
Diesel oil (million liters)			
- EGAT	42.73	11.95	257.55
- IPPs	0.90	2.02	(55.32)
Total	43.63	13.97	212.36

Reservoir Operation

Operation	2017	2016	Increase/(Decrease) Percentage
Total reservoir capacity (million cubic meters) *	62,447	62,447	-
Total storage at year end (million cubic meters) *	51,169	43,692	17.11
Total water inflow (million cubic meters) *	39,404	30,067	31.05
Total water release (million cubic meters) *			
- Passed through generators	26,617	19,664	35.36
- Extra release through spillways	1,767	60	2,835.69
- Extra release for irrigation	619	336	84.03
- Evaporation	3,038	2,701	12.46
Total water release	32,040	22,761	40.77
Water pumped up into the upper reservoir (million cubic meters) **	560	486	15.08
Generated energy (million kWh) ***	4,133	2,957	39.78
Water used for energy generation (cubic meters/kWh)	6.44	6.65	(3.16)

* Excluding Pak Mun Dam, Lamtakong Jolabha Vadhana Hydropower Plant, and other mini hydropower plants

** Water pumped up into Bhumibol Dam, Srinagarind Dam, and Lamtakong Jolabha Vadhana Hydropower Plant

*** Generated energy from EGAT hydropower plants



Environmental Quality Monitoring

Emissions from EGAT Power Plants in 2017

Power Plant	Generation Unit	Fuel	SO ₂ (ppm)		NO _x (ppm)		Dust (mg/m ³)	
			Concentration	Standard	Concentration	Standard	Concentration	Standard
Mae Moh	Thermal, Unit 4	Lignite	29-180	320	224-341	500	7.5-9.8	180
	Thermal, Unit 5	Lignite	29-180	320	224-341	500	7.5-9.8	180
	Thermal, Unit 6	Lignite	6-164	320	229-376	500	8.4-10.1	180
	Thermal, Unit 7	Lignite	6-164	320	229-376	500	8.4-10.1	180
	Thermal, Unit 8	Lignite	21-157	320	134-329	500	7.3-8.8	180
	Thermal, Unit 9	Lignite	25-141	320	174-303	500	8.2-10.2	180
	Thermal, Unit 10	Lignite	21-155	320	129-270	500	8.4-9.7	180
	Thermal, Unit 11	Lignite	9-181	320	174-288	500	9.9-10.0	180
	Thermal, Unit 12	Lignite	26-202	320	153-311	500	8.7-9.5	180
	Thermal, Unit 13	Lignite	11-171	320	153-318	500	6.7-8.4	180
Nam Phong	Combined Cycle, Block 1	Natural gas	3.3-7.7	60	213.6-226.5	250	6.8-11.6	60
	Combined Cycle, Block 2	Natural gas	0.8-8.4	60	209.7-222.4	250	8.0-28.7	60
Wang Noi	Combined Cycle, Block 1	Natural gas	0.5-0.8	60	113.1-131.4	175	4.3-9.2	60
	Combined Cycle, Block 2	Natural gas	0.5-0.7	60	98.8-131.3	175	5.9-13.2	60
	Combined Cycle, Block 3	Natural gas	0.3-0.5	60	61.6-103.2	175	9.1-19.8	60
	Combined Cycle, Block 4	Natural gas	0.3-0.6	10	11.5-20.3	70	2.0-2.5	20
North Bangkok	Combined Cycle, Block 1	Natural gas	0.2-0.9	20	27.7-34.1	120	1.6-13.5	54
	Combined Cycle, Block 2	Natural gas	0.2-0.9	20	5.8-9.4	120	4.7-10.5	54
South Bangkok	Combined Cycle, Block 1	Natural gas	0.8-2.9	60	220.7-240.7	250	6.5-35.1	60
	Combined Cycle, Block 2	Natural gas	0.3-0.8	60	30.6-33.5	175	2.6-11.0	60
	Combined Cycle, Block 3	Natural gas	0.7-1.4	20	55.1-65.9	120	2.9-5.6	60
Bang Pakong	Thermal, Unit 1	Natural gas/fuel oil	0.1-0.4	320	50.1-95.5	200	4.6-14.7	120
	Thermal, Unit 2	Natural gas/fuel oil	0.4-0.5	320	41.8-87.2	200	3.6-15.4	120
	Thermal, Unit 3	Natural gas/fuel oil	0.7-0.8	320	124.1-131.8	200	4.8-6.4	120
	Thermal, Unit 4	Natural gas/fuel oil	0.2-0.8	320	105.9-133.0	200	6.8-10.2	120
	Combined Cycle, Block 3	Natural gas	0.6-0.7	60	151.8-209.8	230	7.8-11.1	60
	Combined Cycle, Block 4	Natural gas	0.6-1.0	60	157.6-194.2	230	5.8-9.5	60
	Combined Cycle, Block 5	Natural gas	0.5-0.6	20	34.7-51.7	120	3.3-8.1	60
Krabi	Thermal, Unit 1	Fuel oil	10.3-12.1	450	121.2-121.8	180	26.3-26.8	120
Chana	Combined Cycle, Block 1	Natural gas	<0.1-0.4	20	30.5-39.7	120	3.5-10.2	60
	Combined Cycle, Block 2	Natural gas	0.1-0.6	20	11.5-14.0	120	1.6-4.5	60

Remark: mg/m³ = concentration of pollutant in unit weight per volume (mg/m³)

ppm = concentration of pollutant in unit volume per volume (part per million)

Greenhouse Gas Management

Greenhouse Gas Emissions Reduction By EGAT's Measures in 2016

Measure	Greenhouse Gas Emissions Reduction (tCO ₂ e)
Electricity generation by renewable energy	1,837,045
Efficiency improvement for electricity generation	120,910
Electricity generation from clean technology	1,372,061
Standard criteria and the attachment of Label No.5 for energy efficiency	629,155
Total	3,959,171

Remark: As of December 2017

Workforce

Educational Level	at December 2017		at December 2016		Increase/ (Decrease) Percentage
	Number of Persons	Percentage	Number of Persons	Percentage	
Bachelor's Degree and Higher	8,518	39.01	8,455	37.74	0.75
Diploma/Higher Vocational Certificate	8,611	39.43	8,646	38.59	(0.40)
Vocational Certificate	2,167	9.92	2,425	10.82	(10.64)
Others	2,541	11.64	2,877	12.84	(11.68)
Total	21,837	100.00	22,403	100.00	(2.53)



Auditor's Report

(Translation)

To The Board of Directors of Electricity Generating Authority of Thailand

Opinion

The Office of the Auditor General of Thailand has audited the accompanying consolidated financial statements of Electricity Generating Authority of Thailand and its subsidiaries (the Group) and separate financial statements of Electricity Generating Authority of Thailand (the Company), which comprise the consolidated and separate statements of financial position as at December 31, 2017, the consolidated and separate statements of income, the consolidated and separate statements of comprehensive income, the consolidated and separate statements of changes in equity and the consolidated and separate statements of cash flows for the year then ended, and notes to the consolidated and separate financial statements, including a summary of significant accounting policies.

In the Office of the Auditor General of Thailand's opinion, the above mentioned consolidated and separate financial statements present fairly, in all material respects, the consolidated financial position of Electricity Generating Authority of Thailand and its subsidiaries and separate financial position of Electricity Generating Authority of Thailand as at December 31, 2017, and their consolidated and separate financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

The Office of the Auditor General of Thailand conducted the audit in accordance with Thai Standard on Auditing (TSAs). The Office of the Auditor General of Thailand's responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements section of the Office of the Auditor General of Thailand's report. The Office of the Auditor General of Thailand is independent of the Group and the Company in accordance with the ethical requirements set out in the State Audit Standards issued by the State Audit Commission and the Federation of Accounting Professions' Code of Ethics for Professional Accountants that are relevant to the Office of the Auditor General of Thailand's audit of the consolidated and separate financial statements, and has fulfilled other ethical responsibilities in accordance with these requirements. The Office of the Auditor General of Thailand believes that the audit evidence the Office of the Auditor General of Thailand has obtained is sufficient and appropriate to provide a basis for the Office of the Auditor General of Thailand's opinion.

Other Information

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and auditor's report thereon. The annual report is expected to be made available to the Office of the Auditor General of Thailand after the date of this auditor's report.

The Office of the Auditor General of Thailand's opinion on the consolidated and separate financial statements does not cover the other information and the Office of the Auditor General of Thailand will not express any form of assurance conclusion thereon.

In connection with the audit of the consolidated and separate financial statements, the Office of the Auditor General of Thailand's responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or the Office of the Auditor General of Thailand's knowledge obtained in the audit, or otherwise appears to be materially misstated.

When the Office of the Auditor General of Thailand reads the annual report, if the Office of the Auditor General of Thailand concludes that there is a material misstatement therein, the Office of the Auditor General of Thailand is required to communicate the matter to those charged with governance.

Responsibilities of Management and Those Charged with Governance for the Consolidated and Separate Financial Statements

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

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

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

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

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

As part of an audit in accordance with TSAs, the Office of the Auditor General of Thailand exercises professional judgment and maintains professional skepticism throughout the audit. The Office of the Auditor General of Thailand also:

- Identifies and assesses the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence that is sufficient and appropriate to provide a basis for the Office of the Auditor General of Thailand's 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.

- Obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.

- Evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Concludes on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If the Office of the Auditor General of Thailand concludes that a material uncertainty exists, the Office of the Auditor General of Thailand is required to draw attention in the auditor's report of the Office of the Auditor General of Thailand to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify the Office of the Auditor General of Thailand's opinion. The Office of the Auditor General of Thailand's conclusions are based on the audit evidence obtained up to the date of the auditor's report of the Office of the Auditor General of Thailand. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.

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

- Obtains 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. The Office of the Auditor General of Thailand is responsible for the direction, supervision and performance of the Group audit. The Office of the Auditor General of Thailand remains solely responsible for the Office of the Auditor General of Thailand's audit opinion.

The Office of the Auditor General of Thailand communicates 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 the Office of the Auditor General of Thailand identifies during the Office of the Auditor General of Thailand's audit.

(Signed) Pongchomnad Jariyajinda
(Pongchomnad Jariyajinda)
Deputy Auditor General

(Signed) Prawit Tantrajin
(Prawit Tantrajin)
Director of Financial Audit Office No.8

Office of the Auditor General of Thailand
March 16, 2018

Financial Statements

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF FINANCIAL POSITION

AS AT DECEMBER 31, 2017

Unit : Baht

		Notes	Consolidated financial statements		
			Dec 31, 17	Dec 31, 16	Jan 1, 16
				(Restated)	(Restated)
ASSETS					
CURRENT ASSETS					
Cash and cash equivalents	6.1	70,955,110,045	66,485,706,823	72,647,548,544	
Current investments	6.2	37,198,862,379	34,154,123,660	30,403,119,804	
Trade accounts receivable-others	6.3	55,687,934,578	56,668,024,045	63,056,150,509	
Trade accounts receivable-related parties	6.4.1	107,769,569	47,306,832	1,807,499,712	
Other accounts receivable	6.6	12,348,303,190	8,555,174,876	10,161,918,321	
Materials and supplies	6.7	11,653,921,900	11,987,362,289	12,092,490,602	
Other current assets	6.8	682,698,698	1,263,855,164	1,797,736,815	
Total current assets		188,634,600,359	179,161,553,689	191,966,464,307	
NON-CURRENT ASSETS					
Investments held as available for sale		8,722,102,324	9,152,580,429	9,640,355,927	
Investments in associates	6.9.3	33,896,778,439	34,282,649,985	20,930,866,940	
Investments in joint ventures	6.9.3	25,377,475,382	24,667,230,538	16,755,326,356	
Other long-term investments		1,149,221,608	496,599,584	459,630,532	
Advance payment for investment		692,253,784	-	-	
Long-term loans to related parties	6.4.2	42,813,144	46,947,120	47,294,940	
Finance lease assets-power plants	6.10	315,246,846,052	333,377,204,060	285,827,182,772	
Property, plant and equipment	6.11	277,485,578,881	276,496,240,370	273,251,440,038	
Work under construction	6.12	87,882,218,312	59,565,516,325	35,674,128,851	
Goodwill	6.13	230,340,735	297,329,455	299,469,555	
Intangible assets	6.14	33,698,233,620	30,561,788,006	28,858,624,653	
Deferred tax assets	6.16.2	133,852,055	53,463,264	107,382,133	
Deposit for deferred revenue for electricity compensation	6.5	5,413,098,633	7,991,250,720	7,383,135,509	
Project development cost for collection		496,209,771	493,987,722	473,754,681	
Land awaiting development	6.15	2,125,289,755	2,125,289,755	2,125,289,755	
Other non-current assets	6.17	5,079,317,359	4,250,249,480	3,447,538,395	
Total non-current assets		797,671,629,854	783,858,326,813	685,281,421,037	
TOTAL ASSETS		986,306,230,213	963,019,880,502	877,247,885,344	

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF FINANCIAL POSITION

AS AT DECEMBER 31, 2017

Unit : Baht

	Notes	Consolidated financial statements		
		Dec 31, 17	Dec 31, 16 (Restated)	Jan 1, 16 (Restated)
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Short-term loans from financial institutions		-	3,800,000,000	1,900,000,000
Trade accounts payable-others	6.18	50,253,323,164	45,964,236,270	52,698,139,594
Trade accounts payable-related parties	6.4.3	11,300,897,094	11,749,855,545	8,285,578,968
Other accounts payable		14,293,083,657	11,156,807,276	10,717,727,170
Surplus revenue from electric energy sales				
according to automatic tariff adjustment (Ft)	6.5	14,572,191,919	14,525,610,887	7,022,818,454
Accrued interest expenses		1,460,487,317	1,495,083,996	1,514,231,946
Accrued remittance to the Ministry of Finance	6.19	11,890,711,826	8,100,393,438	6,213,985,440
Accrued expenses		5,561,793,622	5,416,923,578	5,725,683,555
Current portion of long-term loans	6.20	10,210,288,594	3,148,789,930	6,814,543,369
Current portion of loan from infrastructure fund	12	716,105,266	570,298,669	414,476,205
Current portion of finance lease liabilities-power plants	6.22	16,543,714,447	16,551,588,090	14,439,364,172
Current portion of finance lease liabilities-others		198,007,753	91,588,983	10,608,887
Other current liabilities		48,050,426	31,167,876	42,419,509
Total current liabilities		137,048,655,085	122,602,344,538	115,799,577,269
NON-CURRENT LIABILITIES				
Long-term loans	6.20	80,244,482,348	71,728,448,909	67,930,136,853
Long-term loans from related parties	6.4.4	1,013,802,834	1,029,085,384	1,071,599,090
Loan from infrastructure fund	12	19,235,447,737	19,709,830,022	20,440,523,795
Other non-current accounts payable		150,379,622	78,046,285	-
Deferred tax liabilities	6.16.2	1,700,465,565	1,804,033,782	1,958,311,454
Non-current provisions for employee benefits	6.21	16,661,453,862	15,593,217,581	15,396,261,912
Deferred revenue for electricity compensation	6.5	5,413,098,633	7,991,250,720	7,552,733,132
Finance lease liabilities-power plants	6.22	266,482,286,917	295,223,958,079	248,696,454,919
Finance lease liabilities-others		588,714,575	327,768,057	42,765,175
Provision liabilities for mine reclamation	6.23	2,225,773,065	2,189,672,181	2,169,269,052
Account payable-related party	6.4.5	5,304,822,800	5,814,403,750	-
Other non-current liabilities	6.24	19,222,590,239	15,872,731,253	12,961,444,366
Total non-current liabilities		418,243,318,197	437,362,446,003	378,219,499,748
TOTAL LIABILITIES		555,291,973,282	559,964,790,541	494,019,077,017

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF FINANCIAL POSITION

AS AT DECEMBER 31, 2017

Unit : Baht

	<u>Notes</u>	<u>Consolidated financial statements</u>		
		<u>Dec 31, 17</u>	<u>Dec 31, 16</u>	<u>Jan 1, 16</u>
			<u>(Restated)</u>	<u>(Restated)</u>
LIABILITIES AND EQUITY				
EQUITY				
Contribution from the government	6.25	8,752,646,764	8,814,979,527	8,877,312,290
Surplus from royalty on state property service		194,873,609	201,210,965	207,548,321
Retained earnings				
Appropriated				
Capital expenditure appropriation		80,186,366,913	80,186,366,913	80,186,366,913
Unappropriated		305,654,487,387	276,125,147,779	257,180,669,247
Other components of equity		1,095,250,918	3,044,151,440	3,205,974,707
TOTAL EQUITY ATTRIBUTABLE TO EGAT		<u>395,883,625,591</u>	<u>368,371,856,624</u>	<u>349,657,871,478</u>
NON-CONTROLLING INTERESTS		<u>35,130,631,340</u>	<u>34,683,233,337</u>	<u>33,570,936,849</u>
TOTAL EQUITY		<u>431,014,256,931</u>	<u>403,055,089,961</u>	<u>383,228,808,327</u>
TOTAL LIABILITIES AND EQUITY		<u>986,306,230,213</u>	<u>963,019,880,502</u>	<u>877,247,885,344</u>

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

(Signed) *Saharath Boonpotipukdee*
(Mr. Saharath Boonpotipukdee)
Deputy Governor-Renewable and New Energy
Acting Governor

(Signed) *Wanchai Hongcherdchai*
(Mr. Wanchai Hongcherdchai)
Deputy Governor-Account and Finance

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF FINANCIAL POSITION

AS AT DECEMBER 31, 2017

Unit : Baht

	<u>Notes</u>	<u>Separate financial statements</u>		
		<u>Dec 31, 17</u>	<u>Dec 31, 16</u>	<u>Jan 1, 16</u>
			<u>(Restated)</u>	<u>(Restated)</u>
ASSETS				
CURRENT ASSETS				
Cash and cash equivalents	6.1	61,299,255,927	56,897,490,871	64,932,129,035
Current investments	6.2	32,009,237,392	28,401,604,186	23,869,298,227
Trade accounts receivable-others	6.3	55,100,235,938	56,224,948,877	62,517,522,610
Trade accounts receivable-related parties	6.4.1	537,150,453	368,862,314	2,303,805,798
Other accounts receivable	6.6	10,980,427,165	7,891,642,661	9,360,823,027
Materials and supplies	6.7	9,478,364,546	9,886,860,869	10,141,786,762
Other current assets	6.8	110,969,346	80,418,989	39,468,042
Total current assets		<u>169,515,640,767</u>	<u>159,751,828,767</u>	<u>173,164,833,501</u>
NON-CURRENT ASSETS				
Investments held as available for sale		5,526,575,000	5,422,300,000	5,370,162,500
Investments in associates	6.9.4	1,587,550,233	1,587,550,233	1,587,550,233
Investments in subsidiaries	6.9.4	19,002,750,000	18,900,850,000	12,913,350,000
Investments in joint ventures	6.9.4	584,500,000	584,500,000	584,500,000
Finance lease assets-power plants	6.10	315,246,846,052	333,377,204,060	285,827,182,772
Property, plant and equipment	6.11	265,157,528,422	263,436,065,638	259,366,264,470
Work under construction	6.12	82,700,465,472	58,444,785,824	35,671,208,851
Intangible assets	6.14	30,148,486,492	26,625,508,557	24,770,216,511
Deposit for deferred revenue for electricity compensation	6.5	5,413,098,633	7,991,250,720	7,383,135,509
Land awaiting development	6.15	1,816,082,185	1,816,082,185	1,816,082,185
Other non-current assets	6.17	4,404,782,967	3,489,289,245	2,438,484,685
Total non-current assets		<u>731,588,665,456</u>	<u>721,675,386,462</u>	<u>637,728,137,716</u>
TOTAL ASSETS		<u>901,104,306,223</u>	<u>881,427,215,229</u>	<u>810,892,971,217</u>

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF FINANCIAL POSITION

AS AT DECEMBER 31, 2017

Unit : Baht

	Notes	Separate financial statements		
		Dec 31, 17	Dec 31, 16 (Restated)	Jan 1, 16 (Restated)
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Trade accounts payable-others	6.18	45,003,712,892	40,392,521,549	45,716,636,792
Trade accounts payable-related parties	6.4.3	17,714,813,591	18,958,934,334	16,559,695,125
Other accounts payable		12,977,491,945	10,057,725,363	9,666,654,151
Surplus revenue from electric energy sales				
according to automatic tariff adjustment (Ft)	6.5	14,572,191,919	14,525,610,887	7,022,818,454
Accrued interest expenses		1,147,028,254	1,169,559,394	1,128,913,791
Accrued remittance to the Ministry of Finance	6.19	11,890,711,826	8,100,393,438	6,213,985,440
Accrued expenses		5,526,142,690	5,368,211,956	5,710,022,905
Current portion of long-term loans	6.20	7,552,007,512	3,118,844,470	5,584,598,046
Current portion of loan from infrastructure fund	12	716,105,266	570,298,669	414,476,205
Current portion of finance lease liabilities-power plants	6.22	20,098,397,162	20,321,636,038	17,634,913,589
Current portion of finance lease liabilities-others		196,489,871	90,156,647	9,831,130
Total current liabilities		137,395,092,928	122,673,892,745	115,662,545,628
NON-CURRENT LIABILITIES				
Long-term loans	6.20	61,987,486,566	51,824,269,556	50,607,867,530
Loan from infrastructure fund	12	19,235,447,737	19,709,830,022	20,440,523,795
Non-current provisions for employee benefits	6.21	16,478,108,185	15,428,834,122	15,269,984,842
Deferred revenue for electricity compensation	6.5	5,413,098,633	7,991,250,720	7,552,733,132
Finance lease liabilities-power plants	6.22	284,152,801,797	316,449,155,674	273,691,700,462
Finance lease liabilities-others		586,906,291	324,437,342	41,430,378
Provision liabilities for mine reclamation	6.23	2,225,773,065	2,189,672,181	2,169,269,052
Other non-current liabilities	6.24	19,427,382,527	15,940,901,163	12,918,151,932
Total non-current liabilities		409,507,004,801	429,858,350,780	382,691,661,123
TOTAL LIABILITIES		546,902,097,729	552,532,243,525	498,354,206,751

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF FINANCIAL POSITION

AS AT DECEMBER 31, 2017

Unit : Baht

	<u>Notes</u>	<u>Separate financial statements</u>		
		Dec 31, 17	Dec 31, 16	Jan 1, 16
			(Restated)	(Restated)
LIABILITIES AND EQUITY				
EQUITY				
Contribution from the government	6.25	8,752,646,764	8,814,979,527	8,877,312,290
Surplus from royalty on state property service		194,873,609	201,210,965	207,548,321
Retained earnings				
Appropriated				
Capital expenditure appropriation		80,186,366,913	80,186,366,913	80,186,366,913
Unappropriated		264,608,468,458	239,336,836,549	223,111,124,442
Other components of equity		459,852,750	355,577,750	156,412,500
TOTAL EQUITY ATTRIBUTABLE TO EGAT		<u>354,202,208,494</u>	<u>328,894,971,704</u>	<u>312,538,764,466</u>
TOTAL EQUITY		<u>354,202,208,494</u>	<u>328,894,971,704</u>	<u>312,538,764,466</u>
TOTAL LIABILITIES AND EQUITY		<u>901,104,306,223</u>	<u>881,427,215,229</u>	<u>810,892,971,217</u>

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

(Signed) *Saharath Boonpotipukdee*
(Mr. Saharath Boonpotipukdee)

Deputy Governor-Renewable and New Energy
Acting Governor

(Signed) *Wanchai Hongcherdchai*
(Mr. Wanchai Hongcherdchai)

Deputy Governor-Account and Finance

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF INCOME

FOR THE YEAR ENDED DECEMBER 31, 2017

Unit : Baht

	Notes	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
			(Restated)		(Restated)
REVENUES					
Revenue from electric energy sales		490,826,013,485	489,536,079,840	488,706,558,599	487,400,143,071
Revenue from sales of other goods and services	6.26	3,293,461,801	7,346,920,875	4,443,353,838	7,879,985,507
Total revenue from sales and services		494,119,475,286	496,883,000,715	493,149,912,437	495,280,128,578
COST OF SALES					
Cost of electric energy sales	6.27	400,005,643,809	395,636,628,325	399,661,892,384	395,115,737,165
Cost of sales of other goods and services	6.28	1,656,258,484	5,623,184,239	2,767,440,704	6,390,095,632
Total cost of sales and services		401,661,902,293	401,259,812,564	402,429,333,088	401,505,832,797
Gross profit		92,457,572,993	95,623,188,151	90,720,579,349	93,774,295,781
Other income	6.29	17,621,639,898	4,762,238,011	18,820,641,536	6,472,807,316
Profit before expenses		110,079,212,891	100,385,426,162	109,541,220,885	100,247,103,097
Selling expenses		216,695,709	201,427,307	216,695,709	201,427,307
Administrative expenses		16,091,473,413	16,237,634,391	14,270,959,551	14,524,586,215
Other expenses	6.30	87,659,355	18,540,308	46,744,377	17,525,724
Total expenses		16,395,828,477	16,457,602,006	14,534,399,637	14,743,539,246
Finance costs	6.31	41,130,021,104	41,703,957,875	43,515,120,137	44,792,578,603
Profit before share of profit from investments		52,553,363,310	42,223,866,281	51,491,701,111	40,710,985,248
Share of profit from investments in associates	6.32	4,568,137,187	2,728,673,511	-	-
Share of profit from investments in joint ventures		3,419,575,146	2,706,753,477	-	-
Profit before income taxes		60,541,075,643	47,659,293,269	51,491,701,111	40,710,985,248
Income tax expenses	6.16.1	1,498,310,516	879,900,170	-	-
PROFIT FOR THE YEAR		59,042,765,127	46,779,393,099	51,491,701,111	40,710,985,248
PROFIT ATTRIBUTABLE TO:					
Owners of EGAT		55,763,297,885	43,442,668,957	51,491,701,111	40,710,985,248
Non-controlling interests		3,279,467,242	3,336,724,142	-	-
		59,042,765,127	46,779,393,099	51,491,701,111	40,710,985,248

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

(Signed) *Saharath Boonpotipukdee*
(Mr. Saharath Boonpotipukdee)
 Deputy Governor-Renewable and New Energy
 Acting Governor

(Signed) *Wanchai Hongcherdchai*
(Mr. Wanchai Hongcherdchai)
 Deputy Governor-Account and Finance

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES
STATEMENTS OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED DECEMBER 31, 2017

	Unit : Baht			
	Consolidated financial statements		Separate financial statements	
	2017	2016 (Restated)	2017	2016 (Restated)
PROFIT FOR THE YEAR	59,042,765,127	46,779,393,099	51,491,701,111	40,710,985,248
OTHER COMPREHENSIVE INCOME (EXPENSE)				
Items that will be reclassified subsequently to profit or loss				
Exchange differences on translating financial statement	(1,629,512,071)	(125,319,883)	-	-
Gain (loss) on remeasuring investments held as available for sale	(283,336,588)	(439,106,260)	104,275,000	199,165,250
Share of other comprehensive income (expense) of associates	(954,348,366)	5,416,264	-	-
Share of other comprehensive income of joint ventures	737,164	357,511	-	-
Total items that will be reclassified subsequently to profit or loss	(2,866,459,861)	(558,652,368)	104,275,000	199,165,250
Items that will not be reclassified subsequently to profit or loss				
Loss on remeasurements of defined benefit plans	(534,034)	(23,180,839)	-	-
Share of other comprehensive income (expense) of associates	(12,937,850)	1,215,623	-	-
Share of other comprehensive expense of joint ventures	(927,091)	(8,225,621)	-	-
Total items that will not be reclassified subsequently to profit or loss	(14,398,975)	(30,190,837)	-	-
Other comprehensive income (expense) for the year-net of tax	(2,880,858,836)	(588,843,205)	104,275,000	199,165,250
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	56,161,906,291	46,190,549,894	51,595,976,111	40,910,150,498
PROFIT ATTRIBUTABLE TO:				
Owners of EGAT	53,800,508,288	43,267,928,406	51,595,976,111	40,910,150,498
Non-controlling interests	2,361,398,003	2,922,621,488	-	-
	56,161,906,291	46,190,549,894	51,595,976,111	40,910,150,498

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

(Signed) *Saharath Boonpotipukdee*

(Mr. Saharath Boonpotipukdee)

Deputy Governor-Renewable and New Energy

Acting Governor

(Signed) *Wanchai Hongcherdchai*

(Mr. Wanchai Hongcherdchai)

Deputy Governor-Account and Finance

**STATEMENTS OF CHANGES IN EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2017**

Consolidated financial statements

	Notes	Attributable to Owners of EGAT										Unit : Baht
		Contribution from the government	Surplus from royalty on state property service	Retained earnings		Other components of equity						Total equity
				Appropriated	Unappropriated	Exchange differences on translating financial statement	Gain (loss) on remeasuring investments held as available for sale	Loss on remeasurements of defined benefit plans	Surplus on subsidiaries and associates using equity method	Share of other comprehensive income (expense) of associates	Share of other comprehensive income (expense) of joint ventures	
Balance as at January 1, 2016 (Before adjustment)		8,977,312,290	207,548,321	80,186,366,913	256,530,520,956	(1,181,585,548)	528,484,241	(1,886,535,972)	2,886,909,938	952,484,447	743,740	347,102,249,326
Cumulative effect of the adjustment	5	-	-	-	2,555,622,152	-	-	-	-	-	-	-
Cumulative effect of the reclassification	5	-	-	-	(1,905,473,861)	156,351,595	-	1,886,535,972	-	(136,624,426)	(789,280)	2,555,622,152
Balance as at January 1, 2016 (Adjusted)		8,977,312,290	207,548,321	80,186,366,913	257,180,669,247	(1,025,233,953)	528,484,241	-	2,886,909,938	815,860,021	(45,540)	349,657,871,478
Depreciation of assets for irrigation	6.25	(62,332,763)	-	-	-	-	-	-	-	-	-	(62,332,763)
Remittance to the Ministry of Finance		-	-	-	-	-	-	-	-	-	-	-
Increase of the year 2015		-	-	-	(3,786,014,560)	-	-	-	-	-	-	(3,786,014,560)
The year 2016 (Jan 1 - Jun 30, 2016)		-	-	-	(12,607,244,974)	-	-	-	-	-	-	(12,607,244,974)
Provision for remittance to the Ministry of Finance		-	-	-	(8,100,393,438)	-	-	-	-	-	-	(8,100,393,438)
The year 2016 (Jul 1 - Dec 31, 2016)		-	-	-	(24,493,652,972)	-	-	-	-	-	-	(24,493,652,972)
Changes in equity for the year		-	-	-	-	-	-	-	-	-	-	-
Dividends paid		-	-	-	-	-	-	-	-	-	-	-
Amortization of surplus from royalty on state property service	6.14	-	(6,337,356)	-	6,337,356	-	-	-	-	-	-	-
Adjustment of bonus reserve last year		-	-	-	2,042,475	-	-	-	-	-	-	2,042,475
Profit for the year		-	-	-	43,442,668,957	-	-	-	-	-	-	43,442,668,957
Other comprehensive income (expense)		-	-	-	(12,917,284)	(79,411,579)	(88,056,929)	-	-	5,416,264	228,977	2,922,621,488
Total comprehensive income (expense) for the year		-	-	-	43,429,751,673	(79,411,579)	(88,056,929)	-	-	5,416,264	228,977	43,267,928,406
Balance as at December 31, 2016		8,814,979,527	201,210,965	80,186,366,913	276,125,147,779	(1,104,645,532)	440,427,312	-	2,886,909,938	821,276,285	183,437	346,883,233,337

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES
STATEMENTS OF CHANGES IN EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2017

Consolidated financial statements

Notes	Attributable to Owners of EGAT										Non-controlling interests	Total equity	Unit : Baht	
	Contribution from the government	Surplus from royalty on state property service	Retained earnings		Other components of equity					Total EGAT's equity				
			Appropriated	Unappropriated	Other comprehensive income (expense)									
					Exchange differences on translating financial statement	Gain (loss) on remeasuring investments held as available for sale	Loss on remeasurements of defined benefit plans	Surplus on subsidiaries and associates using equity method	Share of other comprehensive income (expense) of joint ventures					Share of other comprehensive income (expense) of joint ventures
	8,814,979,527	201,210,965	80,186,366,913	275,911,926,541	(1,214,356,358)	440,427,312	(1,896,967,349)	2,886,909,938	912,475,565	1,125,760,296	366,240,244,242	34,683,233,337	400,923,477,579	
5		-	-	2,131,612,382	-	-	-	-	-	-	2,131,612,382	-	2,131,612,382	
5		-	-	(1,918,391,144)	-	-	-	-	-	-	-	-	-	
6.25	Balance as at January 1, 2017 (Adjusted)	8,814,979,527	201,210,965	80,186,366,913	276,125,147,775	(1,104,645,532)	440,427,312	2,886,909,938	821,276,285	1,918,391,144	368,371,856,624	34,683,233,337	403,055,089,961	
	Depreciation of assets for irrigation	(62,332,763)	-	-	-	-	-	-	-	3,044,151,440	(62,332,763)	-	(62,332,763)	
	Remittance to the Ministry of Finance	-	-	-	-	-	-	-	-	-	-	-	-	
	Increase of the year 2016	-	-	-	-	-	-	-	-	-	(952,471,587)	-	(952,471,587)	
	The year 2017 (Jan 1 - Jun 30, 2017)	-	-	-	-	-	-	-	-	-	(13,384,054,726)	-	(13,384,054,726)	
	Provision for remittance to the Ministry of Finance	-	-	-	-	-	-	-	-	-	-	-	-	
	The year 2017 (Jul 1 - Dec 31, 2017)	-	-	-	-	-	-	-	-	-	(11,890,711,826)	-	(11,890,711,826)	
	Changes in equity for the year	-	-	-	-	-	-	-	-	-	(26,227,238,139)	-	(26,227,238,139)	
	Dividends paid	-	-	-	-	-	-	-	-	-	-	-	-	
6.14	Amortization of surplus from royalty on state property service	-	(6,337,356)	-	6,337,356	-	-	-	-	-	-	(1,914,000,000)	(1,914,000,000)	
	Adjustment of bonus reserve last year	-	-	-	831,581	-	-	-	-	-	831,581	-	831,581	
	Profit for the year	-	-	-	55,763,297,885	-	-	-	-	-	55,763,297,885	-	55,763,297,885	
	Other comprehensive income (expense)	-	-	-	(13,889,075)	(924,762,327)	(70,150,215)	-	(954,348,366)	(1,948,900,522)	(1,962,789,597)	2,361,398,003	398,608,406	
	Total comprehensive income (expense) for the year	-	-	-	55,749,408,810	(924,762,327)	(70,150,215)	-	(954,348,366)	(1,948,900,522)	53,886,508,288	2,361,398,003	56,161,906,291	
	Balance as at December 31, 2017	8,752,646,764	194,873,609	80,186,366,913	305,654,487,385	(2,029,407,859)	370,277,097	-	2,886,909,938	1,095,250,918	395,883,625,591	35,130,631,340	431,014,256,931	

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES
STATEMENTS OF CHANGES IN EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2017

Separate financial statements								Unit : Baht	
	Notes	Contribution from the government	Surplus from royalty on state property service	Retained earnings		Other components of equity		Total equity	
				Appropriated	Unappropriated	Other comprehensive income (expense)			Total other components of equity
						Gain (loss) on remeasuring investments held as available for sale	Loss on remeasurements of defined benefit plans		
Balance as at January 1, 2016 (Before adjustment)		8,877,312,290	207,548,321	80,186,366,913	222,445,202,213	156,412,500	(1,889,699,923)	309,983,142,314	
Cumulative effect of the adjustment	5	-	-	-	2,555,622,152	-	-	2,555,622,152	
Cumulative effect of the reclassification	5	-	-	-	(1,889,699,923)	-	1,889,699,923	-	
Balance as at January 1, 2016 (Adjusted)		8,877,312,290	207,548,321	80,186,366,913	223,111,124,442	156,412,500	-	312,538,764,466	
Depreciation of assets for irrigation	6.25	(62,332,763)	-	-	-	-	-	(62,332,763)	
Remittance to the Ministry of Finance		-	-	-	-	-	-	-	
Increase of the year 2015		-	-	-	(3,786,014,560)	-	-	(3,786,014,560)	
The year 2016 (Jan 1 - Jun 30, 2016)		-	-	-	(12,607,244,974)	-	-	(12,607,244,974)	
Provision for remittance to the Ministry of Finance		-	-	-	-	-	-	-	
The year 2016 (Jul 1 - Dec 31, 2016)		-	-	-	(8,100,393,438)	-	-	(8,100,393,438)	
Changes in equity for the year		-	-	-	(24,493,652,972)	-	-	(24,493,652,972)	
Amortization of surplus from royalty on state property service	6.14	-	(6,337,356)	-	6,337,356	-	-	-	
Adjustment of bonus reserve last year		-	-	-	2,042,475	-	-	2,042,475	
Profit for the year		-	-	-	40,710,985,248	-	-	40,710,985,248	
Other comprehensive income		-	-	-	-	199,165,250	-	199,165,250	
Total comprehensive income for the year		-	-	-	40,710,985,248	199,165,250	-	40,910,150,498	
Balance as at December 31, 2016		8,814,979,527	201,210,965	80,186,366,913	239,336,836,549	355,577,750	-	328,894,971,704	

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES
STATEMENTS OF CHANGES IN EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2017

Separate financial statements							Unit : Baht	
Notes	Contribution from the government	Surplus from royalty on state property service	Retained earnings		Other components of equity			Total equity
			Appropriated	Unappropriated	Other comprehensive income	(expense)	Total other components of equity	
					Gain (loss) on remeasuring investments held as available for sale	Loss on remeasurements of defined benefit plans		
Balance as at January 1, 2017 (Before adjustment)	8,814,979,527	201,210,965	80,186,366,913	239,032,876,951	355,577,750	(1,889,699,923)	(1,534,122,173)	326,701,312,183
Cumulative effect of the adjustment	-	-	-	2,193,659,521	-	-	-	2,193,659,521
Cumulative effect of the reclassification	-	-	-	(1,889,699,923)	-	1,889,699,923	1,889,699,923	-
Balance as at January 1, 2017 (Adjusted)	8,814,979,527	201,210,965	80,186,366,913	239,336,836,549	355,577,750	-	355,577,750	328,894,971,704
Depreciation of assets for irrigation	(62,332,763)	-	-	-	-	-	-	(62,332,763)
Remittance to the Ministry of Finance								
Increase of the year 2016	-	-	-	(952,471,587)	-	-	-	(952,471,587)
The year 2017 (Jan 1 - Jun 30, 2017)	-	-	-	(13,384,054,726)	-	-	-	(13,384,054,726)
Provision for remittance to the Ministry of Finance								
The year 2017 (Jul 1 - Dec 31, 2017)	-	-	-	(11,890,711,826)	-	-	-	(11,890,711,826)
Changes in equity for the year	-	-	-	(26,227,238,139)	-	-	-	(26,227,238,139)
Amortization of surplus from royalty on state property service	-	(6,337,356)	-	6,337,356	-	-	-	-
Adjustment of bonus reserve last year	-	-	-	831,581	-	-	-	831,581
Profit for the year	-	-	-	51,491,701,111	-	-	-	51,491,701,111
Other comprehensive income	-	-	-	-	104,275,000	-	104,275,000	104,275,000
Total comprehensive income for the year	-	-	-	51,491,701,111	104,275,000	-	104,275,000	51,595,976,111
Balance as at December 31, 2017	8,752,646,764	194,873,609	80,186,366,913	264,608,468,458	459,852,750	-	459,852,750	354,202,208,494

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2017

		Unit : Baht			
	Notes	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
			(Restated)		(Restated)
Cash flows from operating activities					
Profit before income taxes for the year		60,541,075,643	47,659,293,269	51,491,701,111	40,710,985,248
Adjustments to reconcile profit before income taxes for the year to cash provide by (use in) operating activities					
Depreciation	6.34	25,950,047,192	26,252,997,792	24,914,358,066	25,222,334,976
Depreciation of finance lease assets-power plants	6.34	18,130,358,008	17,739,586,726	18,130,358,008	17,739,586,726
Donation assets	a.	(44,000)	(155,090)	(44,000)	(155,090)
Loss on donated assets		2,484,117	997,239	2,484,117	997,239
Amortization of land rights and project development rights		292,011,832	293,224,541	853,727	874,894
Amortization of computer software rights		145,539,486	249,908,642	133,125,809	232,349,691
Amortization of royalty on state property service	6.14	6,337,356	6,337,356	6,337,356	6,337,356
Allowance for diminution in value of inventories, materials and supplies		37,211,791	251,033,307	33,480,519	400,131,361
Loss on impairment of goodwill		40,851,125	-	-	-
Amortization of deferred charges of the lignite mine	6.17	5,914,388,008	5,781,620,431	5,914,388,008	5,781,620,431
Doubtful debts		(4,586,332)	171,142	(4,586,332)	171,142
Bad debts		1,194,307	657,984	1,194,307	657,984
(Gain) loss on remeasurement of securities held for trading		(2,856,048)	4,765,275	-	-
Gain on disposal of investments		(27,874,453)	-	-	-
(Gain) loss on disposal of assets		11,835,570	(210,626,067)	11,777,842	(210,765,917)
Revenue from contribution income	6.29	(457,214,159)	(421,600,612)	(457,214,159)	(421,600,612)
Employee benefit expense realized from estimates	6.21	2,041,888,022	1,150,476,167	2,015,987,089	1,124,782,738
Gain on exchange rates	6.29	(1,267,506,879)	(289,385,312)	(570,348,292)	(209,065,513)
Gain on exchange rates under finance leases-power plants	6.29	(12,668,725,435)	(660,461,132)	(12,772,240,373)	(676,396,102)
Gain on changes in the fair value of derivatives	6.29	(136,606,676)	(75,803,108)	(136,606,676)	(75,803,108)
Dividends income from associate	6.9.4	-	-	(902,972,219)	(869,528,803)
Dividends income from subsidiary	6.9.4	-	-	(1,566,000,000)	(1,481,175,000)
Dividends income from joint venture	6.9.4	-	-	(21,350,000)	(15,400,000)
Dividends income from other investments		(564,286,940)	(473,227,542)	(375,390,000)	(268,508,125)
Share of profit from investments in associates	6.32	(4,568,137,187)	(2,728,673,511)	-	-
Share of profit from investments in joint ventures		(3,419,575,146)	(2,706,753,477)	-	-
Interest income		(1,190,517,216)	(1,477,475,544)	(950,063,166)	(1,260,494,000)
Finance costs	6.31	4,373,877,880	4,195,902,576	2,870,050,903	2,790,773,447
Interest expenses under finance leases-power plants	6.31	36,756,143,224	37,508,055,299	40,645,069,234	42,001,805,156
Reversal of provision liabilities and others		6,895,458	24,714,897	-	-
Profit from operating activities before changes in operating assets and liabilities		129,944,208,548	132,075,581,248	128,414,350,879	130,524,516,119
Changes in operating assets (increase) decrease					
Trade accounts receivable		922,365,439	8,146,467,020	959,163,508	8,228,448,032
Other accounts receivable		(752,871,903)	640,028,937	(130,521,741)	(14,220,166)
Materials and supplies		356,649,385	(112,583,255)	440,093,793	(83,172,294)
Other current assets		505,736,628	510,482,741	(30,550,357)	(40,950,947)

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES

STATEMENTS OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2017

Unit : Baht

	Notes	Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
			(Restated)		(Restated)
Cash flows from operating activities (Continue)					
Deposit for deferred revenue for electricity compensation		2,578,152,086	(608,115,210)	2,578,152,086	(608,115,210)
Other non-current assets		(810,705,008)	(873,853,934)	(914,709,139)	(1,124,115,470)
Deferred charges of the lignite mine		(5,915,172,592)	(5,708,309,521)	(5,915,172,592)	(5,708,309,521)
Changes in operating liabilities increase (decrease)					
Trade accounts payable		4,642,651,602	4,297,490,708	3,669,830,568	4,708,095,719
Other accounts payable		3,088,890,018	934,679,039	984,893,540	(551,284,162)
Other current liabilities		16,882,550	(11,251,633)	-	-
Accrued expenses		155,925,024	(313,692,690)	157,930,735	(341,810,949)
Other non-current liabilities		(838,931,526)	(453,769,415)	92,175,229	20,437,644
Actual payment on employee benefits		(1,024,908,914)	(1,022,266,776)	(1,017,293,008)	(1,011,579,359)
Deferred revenue for electricity compensation		(2,578,152,086)	438,517,587	(2,578,152,086)	438,517,587
Provision liabilities for mine reclamation		53,394,380	31,244,301	53,394,380	31,244,301
		399,905,083	5,895,067,899	(1,650,765,084)	3,943,185,205
Cash receipts from operating		130,344,113,631	137,970,649,147	126,763,585,795	134,467,701,324
Cash receipts on interest		696,604,281	851,881,433	690,761,527	843,996,417
Cash payment on income taxes		(1,761,297,052)	(938,044,323)	-	-
Net cash flows provided by operating activities		129,279,420,860	137,884,486,257	127,454,347,322	135,311,697,741
Cash flows from investing activities					
Net cash inflow in current investments		(3,087,749,169)	(3,685,467,254)	(3,541,676,451)	(4,425,469,859)
Cash receipts (payment) on other long-term investments		(683,000,000)	29,713,583	-	147,027,750
Advance payment for investment		(708,033,340)	-	-	-
Cash payment on deposits of financial institutions used as collateral		(57,012)	-	-	-
Cash receipts on disposal of assets		57,613,995	384,072,430	57,459,360	383,484,483
Cash payment on property, plant, equipment, work under construction and intangible assets	b.	(54,931,385,536)	(49,012,632,916)	(50,183,779,892)	(47,466,099,391)
Cash payment on finance costs for work under construction	b.	(1,041,585,256)	(997,301,167)	(1,041,585,256)	(997,301,167)
Cash payment on project development cost for collection		(21,014,703)	(47,528,970)	-	-
Cash receipts from short-term loans to related party		-	7,600,000	-	-
Cash receipts on deferred income		358,869,333	328,163,765	358,869,333	328,163,765
Cash payment on investments in associates		(621,464,692)	(6,435,264,266)	-	-
Cash payment on investments in subsidiaries		-	-	(101,900,000)	(5,987,500,000)
Cash payment on investments in joint ventures		(1,004,837,127)	(7,708,753,399)	-	-
Cash receipts from disposal of investments in joint ventures		334,595,926	-	-	-
Cash receipts on interest		465,193,042	714,319,482	250,199,914	497,621,608
Dividends received from associates		4,181,316,854	1,095,726,385	902,972,219	869,528,803
Dividends received from subsidiary		-	-	1,566,000,000	1,481,175,000
Dividends received from joint ventures		1,973,651,450	2,882,894,800	21,350,000	15,400,000
Dividends received from other investments		564,286,940	473,227,542	375,390,000	268,508,125
Net cash flows used in investing activities		(54,163,599,295)	(61,971,229,985)	(51,336,700,773)	(54,885,460,883)

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES
STATEMENTS OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2017

		Unit : Baht			
	<u>Notes</u>	<u>Consolidated financial statements</u>		<u>Separate financial statements</u>	
		<u>2017</u>	<u>2016</u>	<u>2017</u>	<u>2016</u>
			(Restated)		(Restated)
Cash flows from financing activities					
Remittance to the Ministry of Finance		(22,436,919,751)	(22,607,244,974)	(22,436,919,751)	(22,607,244,974)
Cash receipts from short-term loans from financial institutions		-	12,390,000,000	-	-
Cash payment on short-term loans from financial institutions		(3,800,000,000)	(10,490,000,000)	-	-
Cash receipts from long-term loans	6.20	20,247,613,118	6,989,162,213	18,000,000,000	4,400,000,000
Cash payment on long-term loans from infrastructure fund		(328,575,688)	(574,871,309)	(328,575,688)	(574,871,309)
Cash payment on long-term loans from related party		-	(26,177,235)	-	-
Decrease in finance lease liabilities-others		(161,679,463)	(60,028,158)	(160,294,017)	(58,921,544)
Decrease in finance lease liabilities-power plants		(16,080,819,370)	(15,989,419,804)	(19,747,352,380)	(19,169,034,251)
Cash payment on long-term loans		(3,460,534,324)	(6,842,936,022)	(3,420,534,324)	(5,617,010,847)
Cash payment on finance costs		(4,288,221,387)	(4,138,399,809)	(2,892,697,709)	(2,750,238,752)
Cash payment on interest under finance leases-power plants	6.31	(36,756,143,224)	(37,508,055,299)	(40,645,069,234)	(42,001,805,157)
Dividends paid to non-controlling interests of subsidiaries		(3,478,901,111)	(3,290,934,621)	-	-
Net cash flows used in financing activities		(70,544,181,200)	(82,148,905,018)	(71,631,443,103)	(88,379,126,834)
Net increase (decrease) in cash and cash equivalents,					
before effect of exchange rate changes		4,571,640,365	(6,235,648,746)	4,486,203,446	(7,952,889,976)
Effect of exchange rate changes on cash and cash equivalents		(102,237,143)	73,807,025	(84,438,390)	(81,748,188)
Net increase (decrease) in cash and cash equivalents		4,469,403,222	(6,161,841,721)	4,401,765,056	(8,034,638,164)
Cash and cash equivalents at the beginning of the year		66,485,706,823	72,647,548,544	56,897,490,871	64,932,129,035
Cash and cash equivalents at the end of the year	6.1	70,955,110,045	66,485,706,823	61,299,255,927	56,897,490,871

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES
STATEMENTS OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2017

Notes to the statements of cash flows

a. Donation assets

EGAT had non-monetary donation assets during the year 2017 and 2016 amounted to Baht 0.04 million and Baht 0.15 million respectively.

b. Property, plant and equipment, work under construction and intangible assets

Consolidated financial statements

During the year 2017, EGAT and its subsidiaries purchased property, plant and equipment, work under construction, intangible assets and finance costs for work under construction which total costs were Baht 58,150.39 million. The purchase was paid in cash amounted to Baht 55,972.97 million and was not paid in cash amounted to Baht 2,160.43 million (Beginning and Ending balance of accounts payable amounted to Baht 3,873.74 million and Baht 6,034.17 million respectively). The remaining amounted to Baht 16.99 million was net revenues from first synchronization of power plants which would deduct the cost of property, plant and equipment, work under construction and intangible assets.

During the year 2016, EGAT and its subsidiaries purchased property, plant and equipment, work under construction, intangible assets and finance costs for work under construction which total costs were Baht 50,988.65 million. The purchase was paid in cash amounted to Baht 50,009.93 million, and was not paid in cash amounted to Baht 947.60 million (Beginning and Ending balance of accounts payable amounted to Baht 2,926.14 million and Baht 3,873.74 million respectively). The remaining amounted to Baht 31.12 million was net revenues from first synchronization of power plants which would deduct the cost of property, plant and equipment, work under construction and intangible assets.

Separate financial statements

During the year 2017, EGAT purchased property, plant and equipment, work under construction, intangible assets and finance costs for work under construction which total costs were Baht 53,402.79 million. The purchase was paid in cash amounted to Baht 51,225.37 million and was not paid in cash amounted to Baht 2,160.43 million (Beginning and Ending balance of accounts payable amounted to Baht 3,873.74 million and Baht 6,034.17 million respectively). The remaining amounted to Baht 16.99 million was net revenues from first synchronization of power plants which would deduct the cost of property, plant and equipment, work under construction and intangible assets.

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

During the year 2016, EGAT purchased property, plant and equipment, work under construction, intangible assets and finance costs for work under construction which total costs were Baht 49,442.12 million. The purchase was paid in cash amounted to Baht 48,463.40 million and was not paid in cash amounted to Baht 947.60 million (Beginning and Ending balance of accounts payable amounted to Baht 2,926.14 million and Baht 3,873.74 million respectively). The remaining amounted to Baht 31.12 million was net revenues from first synchronization of power plants which would deduct the cost of property, plant and equipment, work under construction and intangible assets.

c. Finance lease assets-power plants

EGAT and its subsidiaries had the finance lease assets-power plants increased by Baht 65,289.61 million during the year 2016 which were equivalent to finance lease liabilities-power plants increased during the year.

d. Project development cost for collection

Subsidiary of EGAT had unpaid project development cost for collection during the year 2017 and 2016 amounted to Baht 2.41 million and Baht 7.61 million respectively.

e. Investments in associates

Subsidiary of EGAT had unpaid investments in associates during the year 2016 amounted to Baht 5,758.54 million.

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND AND ITS SUBSIDIARIES
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2017

1. General information

Electricity Generating Authority of Thailand (EGAT), which is a juristic person, was established by Electricity Generating Authority of Thailand Act, B.E. 2511 (1968) and subsequent amendments. EGAT's main business objectives are generating, acquiring, transmission or distribution electric energy, the operation of electric energy business and energy sources deriving from natural resources and undertaking business concerning electric energy and other businesses concerning or related to the activities of EGAT, or collaborate with other persons for the said activities. Besides, its businesses include production and selling lignite or any chemicals derived from lignite. The head office of EGAT is located at 53 Moo 2, Charansanitwong Road, Bang Kruai, Nonthaburi.

2. Basis of financial statements presentations

2.1 Principles of financial statements preparation

The consolidated and separate financial statements have been prepared in accordance with Thai Financial Reporting Standards under the Accounting Profession Act, B.E. 2547, including interpretations and guidelines promulgated by the Federation of Accounting Professions (FAP). EGAT has presented the financial statements in compliance with the notification of the Department of Business Development "Definition of the abbreviated components required in the financial statements (No. 2) B.E. 2559", dated October 11, B.E. 2559, under the third paragraph of section 11 of the Accounting Act, B.E. 2543.

These accompanying consolidated and separate financial statements are prepared based on the assumption that users of these financial statements have an understanding of generally accepted accounting principles and practices used in Thailand. In any case, these accounting principles may differ, in certain aspects, from generally accepted accounting principles used in other countries.

The mentioned financial statements have been prepared under the historical cost convention, except explained otherwise as disclosed in Note 3, Significant Accounting Policies.

In the consolidated financial statements, the significant transactions arising between EGAT and subsidiaries are eliminated. Investments in subsidiaries, associates and joint ventures have been presented in the separate financial statements under the cost method. Non-controlling interests are separately disclosed in equity. When materiality, accounting policies of its subsidiaries, associates and joint ventures have been changed to ensure consistency with the accounting policies adopted by EGAT.

An English language version of the financial statements has been prepared from the statutory financial statements that were issued in Thai language. In case of conflict or difference in the interpretation between the two languages, the financial statements in Thai language shall prevail.

2.2 Use of estimates

The consolidated and separate financial statements are prepared in conformity with Thai Financial Reporting Standards, which require management to make estimates and assumptions that affect the book value of assets and liabilities in the consolidated and separate financial statements. Actual results may differ from those estimates and assumptions.

3. Significant accounting policies

3.1 Cash and cash equivalents

Cash and cash equivalents include cash on hand, cash in current accounts, saving accounts and short term fixed deposits not more than 3 months including promissory notes or bills of exchange with maturity of 3 months or less which EGAT has fully accessed without commitment.

3.2 Trade accounts receivable and other accounts receivable

Accounts receivable are stated at net realizable value. The allowance for doubtful accounts is estimated by percentage of the overdue, which have been based on historical results of collection and the present events pertaining to accounts receivable at the statements of financial position date. According to the regulations of the Ministry of Finance regarding accounting and finance of state owned enterprise B.E. 2548, which amended the regulations of the Ministry of Finance regarding accounting and finance of state owned enterprise B.E. 2520, the allowance for doubtful accounts are stated as follows:

3.2.1 Trade accounts receivable exclude of government agencies and state enterprises

Overdue period	Percentage of allowance for doubtful accounts
Over 6 months - 1 year	50
Over 1 year	100

3.2.2 Other accounts receivable (exclude accrued revenues and prepaid expenses), which the overdue period is over 1 year, the percentage of allowance for doubtful accounts is 100.

Doubtful accounts are recognized to the statements of income as part of administrative expenses.

3.3 Materials and supplies

3.3.1 Fuel oil for each power plant is stated at the weighted average cost method.

3.3.2 Lignite is stated at the weighted average cost method.

3.3.3 Spare parts for each power plant and mine equipment are stated at the weighted average cost method less allowance for obsolescence of stocks designed to write off the parts on a straight-line method over the useful lives of the main equipment.

Spare parts for each power plant under materials and supplies item are namely the spare parts and equipment which are used in power plants maintenance. The portion of main spare parts and equipment for power plants, which has useful life over 1 year, is stated in equipment for power plants under property, plant and equipment item.

Spare parts for mine equipment are namely component, spare parts and supplies for mine equipment maintenance such as spare parts for 85 ton truck, excavator and engine belt system. However, useful lives over 1 year and reserved spare parts for mine equipment are stated under property, plant and equipment item.

3.3.4 General materials and supplies are stated at the weighted average cost method less allowance for obsolescence of stocks designed, which have not moved for 6 months and above. The allowance for obsolescence of stocks are stated as follows:

No movement within	Percentage of allowance for obsolescence of stocks
6 - 18 months	10
Over 18 - 30 months	30
Over 30 - 48 months	50
Over 48 - 60 months	75
Over 60 months	100

General materials and supplies consist of fuel oil for vehicle and machine, general spare parts and office suppliers for operation.

3.4 Derivative assets and derivative liabilities

Derivatives have initially realized based on the fair value at the statements of financial position date. Gain or loss from the change of fair value are realized in the statements of income of that period.

At the statements of financial position date, the fair value of forward foreign exchange contracts, cross currency and interest rate swap contracts are calculated by financial institutions, which are the contractors of EGAT.

3.5 Investments in subsidiaries, associates and joint ventures

3.5.1 Investments in subsidiaries

Subsidiaries are those entities in which were directly or indirectly controlled by EGAT. Control exists when EGAT has the power over the subsidiaries and has an exposure or rights to variable returns from its involvement with the subsidiaries, and also has the ability to affect those returns through the power over the subsidiaries. In case of EGAT has voting rights less than half of total voting rights in subsidiaries, EGAT will reconsider the related facts and circumstances in order to determine whether EGAT has the power to control over such subsidiaries or not.

The financial statements of subsidiaries are included in the consolidated financial statements from the date on which the control commences until the date on which the control ceases.

Investments in subsidiaries of EGAT have been presented in the separate financial statements under the cost method. Investments in subsidiaries of EGAT and its subsidiaries have been eliminated together with the equity interests in the consolidated financial statements preparation.

3.5.2 Investments in associates and joint ventures

Associates are those entities in which EGAT has significant influence, but not control or joint control, over the financial and operating policies.

Joint ventures are joint arrangement whereby EGAT has joint control of the arrangement and has rights to the net assets of the arrangement. The joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

Investments in associates and joint ventures of EGAT have been presented in the separate financial statements under the cost method. Investments in associates and joint ventures of EGAT and its subsidiaries have been presented in the consolidated financial statements under the equity method.

3.6 Investments in financial securities

Investments other than investments in subsidiaries, associates and joint ventures are classified into the following three categories: trading investments, held-to-maturity investments and available-for-sale investments. The classification is dependent on the purpose for which the investments were acquired. Management determines the appropriate classification of its investments at the time of the purchase and re-evaluates such designation on a regular basis.

Investments in financial securities of EGAT is in compliance with the regulations of the Ministry of Finance about Accounting and Finance of state owned enterprise, B.E. 2548 section 2 which defined state owned enterprise to deposit its money with commercial banks that also are state owned following to the budgeting law. If there is remaining liquidity or desire to manage remaining liquidity to gain higher reward than deposit with state owned banks following to the budgeting law of state owned enterprise, it is possible to invest in short term financial instruments issued by the Ministry of Finance, financial institutions of government or state owned enterprise following to the budgeting law.

3.6.1 Trading investments are investments that acquired principally for the purpose of generating a profit from short-term fluctuations in price and included in current assets.

3.6.2 Held-to-maturity investments are investments with fixed maturity that the management has the intent and ability to hold to maturity. They are included in non-current assets, except those with maturities within 12 months from the end of the reporting period, which are classified as current assets.

3.6.3 Available-for-sale investments are investments that the management intends to hold for an indefinite period of time, which may be sold in response to liquidity needs or changes in interest rates. They are included in non-current assets unless management has expressed the intention of holding the investment for less than 12 months from the end of the reporting period or unless they will need to be sold to raise operating capital, in which case they are included in current assets.

All categories of investments are initially recognized at cost which is equal to the fair value of consideration paid plus transaction costs.

Trading and available-for-sale investments are subsequently carried at fair value. The fair value of investments is based on the quoted bid prices at the close of business on the financial position date by reference to the Stock Exchange of Thailand. The unrealized gains and losses of trading investments are recognized in the statements of income. The unrealized gains and losses of available-for-sale investments are recognized in other comprehensive income.

Held-to-maturity investments are carried at amortized cost using the effective yield method less impairment loss. The difference between purchased prices and maturity value will be amortized using the effective rate of interest method over the maturity of the investments.

On disposal of an investment, the difference between the net disposal proceeds and the carrying amount is recognized in the statements of income. When disposing of part of the Group's holding of a particular investment in debt or equity securities, the carrying amount of the disposed part is determined by the weighted average carrying amount of the total holding of the investment.

3.7 Property, plant and equipment

Property, plant and equipment are stated at cost on the date of acquisition or completion of construction less accumulated depreciation and allowance for impairment.

Depreciation is calculated on the straight-line method in order to reduce the book value of each type of assets over the estimated useful lives with residual value of one Baht except the land which has infinite useful lives.

The estimates of useful lives of EGAT's assets are as follows:

	Years	
Structures	3 years	- 40 years
Reservoirs and dams	5 years	- 75 years
Power plants	5 years	- 30 years
Equipment for power plants	3 years	- 25 years
Control system	3 years	- 25 years
Transmission system	3 years	- 40 years
Communication system	5 years	- 25 years
Coal handling system	10 years	- 25 years
Machinery	5 years	- 10 years
Large-sized spare parts for mine equipment	8 years	
Vehicles	5 years	- 12 years
Others	3 years	- 10 years

The estimate of useful lives for power plants of subsidiaries is stated according to the power purchase agreement.

Depreciation of the Srinagarind, Bang Lang, Vajiralongkorn, Rajjaprabha and Pak Mun dams are included in the statements of income only to the extent that they relate to power generation. The remaining portion relating to irrigation is deducted from capital contribution for supporting construction of those dams.

When the asset was disposed, EGAT recorded to write off the asset with accumulated depreciation and recognized gain (loss) on disposal of asset in the statements of income.

The cost of major inspection was recognized as the part of property, plant and equipment and was amortized according to the estimated useful lives. The useful lives of major inspection fee are estimated under type of major inspection fee and power plants as follows:

Type of power plants	Type of major inspection fee	
	Major overhaul : MO	Minor inspection : MI
	Useful lives (Year)	Useful lives (Year)
- Hydro power plants	6 - 12	2 - 4
- Thermal power plants	4 - 6	2
- Combined cycle power plants	2 - 6	2 - 3
- Gas turbine power plants	4 - 8	1 - 4
- Lignite power plants	8	2

Besides, cost of power plants commissioning after deduction of revenue from electric energy during power plants commissioning are recorded as the part of property, plant and equipment in work under construction item.

3.8 Lease agreements

3.8.1 Finance lease agreements

Assets and liabilities under finance lease agreements are stated at the lower of fair values at inception or present values of the minimum lease payments less accumulated depreciation. A portion of lease payments is recognized as financial expenses and the remainder is deducted from the principle over the lease periods. Depreciations of those leased assets are calculated on the straight-line method over the estimated useful lives of each type of assets. In case the ownership of the assets is not transferred to the lessee at the end of the lease periods, depreciations are based on the shorter of the useful lives of the assets or the lease period.

3.8.2 Operating lease agreements

Payments made under operating lease agreements are recognized as expenses in the statements of income in the period in which they are incurred on a straight-line basis over the term of the lease or on an actual occurrence in that period basis. Contingent lease payments are accounted for by revising the minimum lease payments over the remaining term of the lease when the lease adjustment is confirmed.

3.9 Intangible assets

3.9.1 Land rights

The land rights under transmission line have infinite useful lives, so they will not be amortized. Other land rights will be amortized according to the certain useful lives.

3.9.2 Computer software rights and software license

Computer software rights of EGAT are amortized as expenses over the expected useful lives within 5-10 years. The software license is amortized over the useful life of the rights granted.

3.9.3 Royalty on state property service

In 1990, with the approval of the Ministry of Finance, EGAT has been entitled to use land and building surrounding the Sirikit dam, which are state property without charge and EGAT recognized cost of dam in portion that use for generating electric power and surplus from Royalty on State Property Service as a Royalty on State Property Service account. It is recognized as expenses and written off from the Royalty on State Property Service. The balance has been amortized within 59 years which is the remainder estimated useful life of the Sirikit dam.

3.9.4 Transmission system connection rights

Transmission system connection rights are amortized based on a straight-line method over the expected useful lives in 8 years.

3.9.5 Project development rights

The incurred costs on development projects are recognized as intangible assets when there are obvious possibilities that the projects will be succeeded. The cost on development projects that has been capitalized is amortized from commencement of the commercial operation based on a straight-line method over the period of its expected benefit.

3.9.6 Research and development expenditure

Research and development expenditure is divided into 2 phases according to phase of activities as below:

1. Expenditure on research phase includes the expenditure of experiment to acquire new knowledge and understanding on scientific or technical. Gain or loss will be recognized when it is occurred.
2. Expenditure on development phase is related to a new product and process work plan, design or improvement. It will be recognized as an asset when the development cost can be reliably measured or the product or process has the commercial and technological feasibility as well as generate economic benefits. However, EGAT must have the intention and adequate resource to apply the gained knowledge to achieve the development so that the asset can be utilized or sold.

The development expenditure which will be recognized as an asset consists of cost of materials, labor and others which directly attributed to the preparation of asset for its intended use and borrowing cost.

The development expenditure, recognized as asset, is stated at cost less accumulated amortization. In case the prototype asset can be used for operation, EGAT will separate cost of tangible asset from intangible asset in order to classify tangible asset as property, plant and equipment according to type of asset.

In case that research phase and development phase cannot be classified separately, the payments are recognized as expenses in the statements of income as incurred.

3.10 Goodwill

Goodwill represents the excess of the cost of acquisition of the group of subsidiaries over the fair value of the Group's share of the identified net assets of the acquired subsidiary, associate or joint venture at the acquisition date.

Goodwill is measured at cost less accumulated impairment losses. Goodwill has been tested for impairment where the carrying amount of the Group's assets is reviewed at reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets recoverable amounts are estimated. For goodwill, the recoverable amount is estimated at reporting date, when indicators of impairment are identified.

3.11 Project development cost for collection

Project development cost for collection of subsidiary will record as an asset when the Ministry of energy approved the principle of investment project. In any case, if Board of Directors consider and approve the termination of the project, the entity will write off the project development cost for collection which was recognized as an asset and recognize it immediately as an expense in that period.

3.12 Deferred charges of the lignite mine

3.12.1 Overburden removal costs

The costs of overburden removal expended in each year are calculated by multiply the quantity of lignite extracted from the mine in that period by 6.09 (the stripping ratio is 6.09 : 1, which is the ratio of the overburden bears to the total economically lignite) and multiply by the average cost per cubic metre of overburden removed. In case the actual stripping ratio in each period is more than 6.09, the excess is recorded as the deferred charges. However, the overburden removal costs must not exceed the actual expenses.

3.12.2 Minerals resource exploration and preliminary development costs

Minerals resource exploration and preliminary development costs are recognized as expenses for the year in which they are incurred. However, any exploration done as a part of a power development plan or an area to expand the mine is recognized as deferred charges and amortization is calculated based on the ratio of deferred charges to the total volume of lignite that can be utilized and multiplied by the quantity of lignite extracted in that period.

3.12.3 Resettlement costs

Resettlement costs expended in each year are calculated based on the total actual resettlement costs divided by the total lignite mineable reserves over the useful lives of the power plants and multiplied by the quantity of lignite extracted during the year. The resettlement costs in areas which are not mined for lignite will be recognized as expenses in the period as incurred.

3.12.4 Mineral patent costs

Mineral patent costs paid as an extra to the government are calculated by 0.1% of the total mineral value, each of them has value exceeding Baht 50 million. (Mineral fields which are less than or equivalent to value Baht 50 million are exempted from such patent costs.)

Each patent is granted a period of 25 years. Mineral patent costs are recognized as deferred charges and amortized over the period of patent.

3.13 Foreign currency

Foreign currency transactions are translated into Thai Baht using the Bank of Thailand's reference exchange rate prevailing at the transaction date. Assets and liabilities which are monetary items and dominated in foreign currency are translated into Thai Baht using the Bank of Thailand's reference exchange rate prevailing at the end of accounting period. Gain or loss on foreign exchange is recognized as either revenues or expenses for all amounts in that accounting period.

3.14 Employee benefits

Employee benefit obligations of EGAT and its subsidiaries are measured and recognized as follows:

1. Short-term employee benefits are recognized as expenses in the statements of income when incurred. However, short-term employee benefits in case of leave with accumulated compensation are recognized when the services are rendered.

2. Post-employee benefits-defined contribution plans of EGAT and its subsidiaries have jointly established a provident fund which is legally separated from EGAT and its subsidiaries. The fund is monthly contributed by employees, EGAT and its subsidiaries. The contributions will not be recognized as provision liabilities but will be recognized as expenses in the statements of income when incurred.

3. Post-employee benefits-defined benefit plans are determined based on actuarial techniques, using the project unit credit method, in order to determine present value of the obligation, current service cost, past service cost, and net interest which are recognized as liabilities in the statements of financial position and expenses in the statements of income.

In case of EGAT has the differences between actual employee benefits payment and actuarial estimation, EGAT will not recognized the differences until the assumptions revision of actuarial estimation are reviewed every 3 years or whether there is any indication. Any actuarial gains and losses are recognized in other comprehensive income. The accumulated amounts are recognized in retained earnings in equity.

In case of changing in employees benefit plan, past service costs will be recognized as expenses in the statements of income immediately.

4. Other long-term employee benefits are determined based on actuarial techniques, using the project unit credit method, in order to determine present value of the obligation, current service cost, past service cost, and net interest which are recognized as liabilities in the statements of financial position and expenses in the statements of income.

In case of EGAT has the differences between actual employee benefits payment and actuarial estimation, EGAT will not recognized the differences until the assumptions revision of actuarial estimation are reviewed every 3 years or whether there is any indication. Any actuarial gains and losses are recognized in the statements of income immediately.

3.15 Provision liabilities for mine reclamation

EGAT recognizes provision liabilities for mine reclamation in accordance with the law after EGAT stopped lignite mining in Mae Moh District, Lampang, which will arise in the future. EGAT would estimate mine reclamation expenses based on estimation of total reclamation costs, divided by total expected quantity of extracted lignite over the mining life, multiplied by the quantity of extracted lignite for each period which the estimation of mine reclamation expenses is recognized as expenses in each accounting period.

3.16 Staff AID fund and provident fund

EGAT has established the Staff AID Fund to provide welfare for employees after leaving EGAT by contributing to the fund on a monthly basis at the rate of 10% of salaries of its employees being the fund's members. Contributions are recognized as expense in EGAT's statements of income in full amount and the accounting transactions of the fund have been consolidated in EGAT's financial statements.

On January 1, 1995, EGAT has set up the Provident Fund in accordance with the Provident Fund Act, B.E. 2530, which the Ministry of Finance prescribed the policy that the state owned enterprises contribute to the Provident Fund at the rate approved by the Ministry of Finance. The employees have the privilege to contribute to the Fund at the minimum rate of 3% of salaries but not more than 15% of salaries. EGAT recognizes contributions paid to the provident fund as expenses in the accounting period. In addition, the provident fund is an entity that is legally separated from EGAT.

3.17 Deferred Income

3.17.1 Contributions for construction

In case cash contributions toward project construction are received from EGAT's parties such as independent power producers and EGAT's direct customers, these contributions will be recognized as assets and deferred contributions transferred to revenues over the period of the power purchase contracts or the useful lives of the related assets.

3.17.2 Income from donation

Income from donation is assets and cash received from governments and foreign financial institutions in forms of discount of interest or grants to be used for project development of EGAT as identified by donors, is recorded as deferred income under liabilities. Deferred income is recognized as revenue over the useful lives of fixed assets. In case of cash from donation for normal operation is recognized as revenue according to actual expenditures incurred.

3.18 Revenue from electric energy sales

Revenue from electric energy sales is recognized according to metered delivery units at the selling point under the power purchase agreement. Revenue from automatic tariff adjustment (Ft) is recognized according to the occurred Ft revenue in that period which comprised of the actual collected Ft revenue in accordance with the approval of the Energy Regulatory Commission (ERC) and recognized the accrued or surplus Ft revenue, which came from the difference of the calculated Ft price under the formula Ft with the collected Ft price in that period.

Deferred revenue for electricity compensation has been occurred from receiving fuel costs or electricity compensation from fuel suppliers or power producers. However, such compensation has not been approved by the ERC to be included in the tariff structure. EGAT will recognize that compensation as electricity revenue in the period that the ERC has approved it.

3.19 Revenue from sales of other goods and services

3.19.1 Revenue from sales of other goods such as the revenue from fuel providing to affiliates of EGAT and revenue from sales of Hydrogen gas, distilled water, chemicals and by products from generating electricity. It is recognized as income upon the delivery of products and when the significant risks and rewards of ownership are transferred to the customers.

3.19.2 Revenue from services such as revenue from operation and maintenance services for power plants, communications system and telecommunication services are recognized as income by percentage of completion at the statements of financial position date.

3.20 Interest income

Interest income is recognized based on proportion of time basis and the effective rate of return on assets.

3.21 Dividend income

Dividend income is recognized when EGAT's right to receive the dividend payment is established.

3.22 Finance costs

Finance costs include interest expenses, commitment charges and other expenses on long term loans. Interest expenses of long term loans for acquisition of non-current assets that are under construction are recognized as capitalized, while after the completion of construction period are recognized as expenses. Interest expenses on loans for working capital are recognized as expenses in the period in which they are incurred.

3.23 Related parties

Related parties refer to individuals or enterprises, which directly or indirectly manage or control EGAT or are controlled by EGAT or are under common control, including subsidiaries and fellow subsidiaries. Besides, related parties refer to individuals or enterprises, including associate and shareholder which have directly or indirectly vote and significant influence to EGAT, directors, management or employees of the EGAT.

In considering each possible related parties relationship, EGAT attends to the substance of the relationship and not merely the legal form.

3.24 Financial instruments

Financial assets presented in the financial statements include cash and cash equivalents, current investments, trade accounts receivable-others and trade accounts receivable-related parties. Financial liabilities presented in the financial statements include trade accounts payable-others, trade accounts payable-related parties, other accounts payable and loans. The accounting policies applied to those particular items are separately disclosed in the individual policy statements associated with them.

EGAT uses the financial instruments to reduce foreign currency risk and fluctuations in interest rate. The main derivative financial instruments consisted of forward foreign exchange contracts, cross currency and interest rate swap contracts and cash flow hedge.

Forward foreign exchange contracts

The forward foreign exchange contracts are financial instruments to protect against the risk of exchange rate fluctuations which are agreements enabling EGAT to buy a specific amount of foreign currency at a pre-agreed rate on a specified date. Accounts receivable and payable from the forward foreign exchange contracts are translated into functional currency at the exchange rate ruling on the statements of financial position date. Unrealized gain or loss on foreign currency translation will be recorded as gain or loss on changes in the fair value of derivatives in the statements of income and recognized differences that occurred in the statements of income when the forward foreign exchange contracts are due.

Cross currency and interest rate swap contracts

The cross currency and interest rate swap contracts are financial instruments to protect against the risk of fluctuations in foreign exchange rate and interest rate associated with foreign currency borrowings. The swap contracts are not recognized in the financial statements at contracts date but recognized differences in the statements of income on any due date that specified in the contracts.

Cash flow hedge

Cash flow hedge is a hedging instrument of the exposure to variability in cash flows that is attributable to a particular risk associated with assets or liabilities. The effective gain or loss on the hedging instrument shall be recognized in other comprehensive income, and the ineffective gain or loss on the hedging instrument shall be recognized as other incomes or expenses in the statements of income.

3.25 Capital risk management

The subsidiary's objectives of capital management are to safeguard its ability to continue operating to provide returns for shareholders, to be beneficial for other stakeholders and to maintain proper capital structure to reduce the cost of capital.

3.26 Operating segments disclosure

EGAT and its subsidiaries have adopted Thai Financial Reporting Standard No. 8, Operating Segments. The Operating Segments Disclosure is reported on the basis of internal reports of EGAT and its subsidiaries that are received and regularly reviewed by Chief Operating Decision Maker (CODM) in order to allocate resources to the segment and assess its performance. In addition, CODM of EGAT is board of directors of EGAT.

EGAT and its subsidiaries engage in the single operating segment which is generating, acquiring, transmission or distribution electric energy, including other business concerning or related to the main activities of EGAT or joint arrangements with other parties to operate such activities. Thus, overall revenues, income from operations and assets presented in the financial statements are considered as operating segment reporting.

4. Revised Thai Accounting Standards (TASs), Thai Financial Reporting Standards (TFRSs), Thai Standing Interpretations and Thai Financial Reporting Interpretations which are published in the Government Gazette are as follow:

Effective for accounting periods beginning on or after January 1, 2018

-Thai Accounting Standard No. 1 (Revised 2017)	Presentation of Financial Statements
-Thai Accounting Standard No. 2 (Revised 2017)	Inventories
-Thai Accounting Standard No. 7 (Revised 2017)	Statement of Cash Flows
-Thai Accounting Standard No. 8 (Revised 2017)	Accounting Policies, Changes in Accounting Estimates and Errors
-Thai Accounting Standard No. 10 (Revised 2017)	Events after the Reporting Period
-Thai Accounting Standard No. 11 (Revised 2017)	Construction Contracts
-Thai Accounting Standard No. 12 (Revised 2017)	Income Taxes

-Thai Accounting Standard No. 16 (Revised 2017)	Property, Plant and Equipment
-Thai Accounting Standard No. 17 (Revised 2017)	Leases
-Thai Accounting Standard No. 18 (Revised 2017)	Revenue
-Thai Accounting Standard No. 19 (Revised 2017)	Employee Benefits
-Thai Accounting Standard No. 20 (Revised 2017)	Accounting for Government Grants and Disclosure of Government Assistance
-Thai Accounting Standard No. 21 (Revised 2017)	The Effects of Changes in Foreign Exchange Rates
-Thai Accounting Standard No. 23 (Revised 2017)	Borrowing Costs
-Thai Accounting Standard No. 24 (Revised 2017)	Related Party Disclosures
-Thai Accounting Standard No. 26 (Revised 2017)	Accounting and Reporting by Retirement Benefit Plans
-Thai Accounting Standard No. 27 (Revised 2017)	Separate Financial Statements
-Thai Accounting Standard No. 28 (Revised 2017)	Investments in Associates and Joint Ventures
-Thai Accounting Standard No. 29 (Revised 2017)	Financial Reporting in Hyperinflationary Economies
-Thai Accounting Standard No. 33 (Revised 2017)	Earnings per Share
-Thai Accounting Standard No. 34 (Revised 2017)	Interim Financial Reporting
-Thai Accounting Standard No. 36 (Revised 2017)	Impairment of Assets
-Thai Accounting Standard No. 37 (Revised 2017)	Provisions, Contingent Liabilities and Contingent Assets
-Thai Accounting Standard No. 38 (Revised 2017)	Intangible Assets
-Thai Accounting Standard No. 40 (Revised 2017)	Investment Property
-Thai Accounting Standard No. 41 (Revised 2017)	Agriculture
-Thai Financial Reporting Standard No. 2 (Revised 2017)	Share-based Payment
-Thai Financial Reporting Standard No. 3 (Revised 2017)	Business Combinations
-Thai Financial Reporting Standard No. 4 (Revised 2017)	Insurance Contracts
-Thai Financial Reporting Standard No. 5 (Revised 2017)	Non-current Assets Held for Sale and Discontinued Operations
-Thai Financial Reporting Standard No. 6 (Revised 2017)	Exploration for and Evaluation of Mineral Resources
-Thai Financial Reporting Standard No. 8 (Revised 2017)	Operating Segments
-Thai Financial Reporting Standard No. 10 (Revised 2017)	Consolidated Financial Statements
-Thai Financial Reporting Standard No. 11 (Revised 2017)	Joint Arrangements

-Thai Financial Reporting Standard No. 12 (Revised 2017)	Disclosure of Interests in Other Entities
-Thai Financial Reporting Standard No. 13 (Revised 2017)	Fair Value Measurement
-Thai Standing Interpretation No. 10 (Revised 2017)	Government Assistance-No Specific Relation to Operating Activities
-Thai Standing Interpretation No. 15 (Revised 2017)	Operating Leases-Incentives
-Thai Standing Interpretation No. 25 (Revised 2017)	Income Taxes-Changes in the Tax Status of an Entity or its Shareholders
-Thai Standing Interpretation No. 27 (Revised 2017)	Evaluating the Substance of Transactions Involving the Legal Form of a Lease
-Thai Standing Interpretation No. 29 (Revised 2017)	Service Concession Arrangements: Disclosures
-Thai Standing Interpretation No. 31 (Revised 2017)	Revenue-Barter Transactions Involving Advertising Services
-Thai Standing Interpretation No. 32 (Revised 2017)	Intangible Assets-Web Site Costs
-Thai Financial Reporting Interpretation No. 1 (Revised 2017)	Changes in Existing Decommissioning, Restoration and Similar Liabilities
-Thai Financial Reporting Interpretation No. 4 (Revised 2017)	Determining Whether an Arrangement Contains a Lease
-Thai Financial Reporting Interpretation No. 5 (Revised 2017)	Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds
-Thai Financial Reporting Interpretation No. 7 (Revised 2017)	Applying the Restatement Approach under TAS 29 (Revised 2017) Financial Reporting in Hyperinflationary Economies
-Thai Financial Reporting Interpretation No. 10 (Revised 2017)	Interim Financial Reporting and Impairment
-Thai Financial Reporting Interpretation No. 12 (Revised 2017)	Service Concession Arrangements
-Thai Financial Reporting Interpretation No. 13 (Revised 2017)	Customer Loyalty Programmes
-Thai Financial Reporting Interpretation No. 14 (Revised 2017)	TAS 19 (Revised 2017) Employee Benefits - The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction

-Thai Financial Reporting Interpretation No. 15 (Revised 2017)	Agreements for the Construction of Real Estate
-Thai Financial Reporting Interpretation No. 17 (Revised 2017)	Distributions of Non-cash Assets to Owners
-Thai Financial Reporting Interpretation No. 18 (Revised 2017)	Transfers of Assets from Customers
-Thai Financial Reporting Interpretation No. 20 (Revised 2017)	Stripping Costs in the Production Phase of a Surface Mine
-Thai Financial Reporting Interpretation No. 21 (Revised 2017)	Levies

The Management of EGAT has assessed and determined the potential impact of adopting Thai Accounting Standards (TASs), Thai Financial Reporting Standards (TFRSs), Thai Standing Interpretations and Thai Financial Reporting Interpretations and has concluded that there will not have material impact on the financial statements.

5. The effects of adjustments and reclassifications on the financial statements of EGAT and its subsidiaries

5.1 Adjustments on the consolidated and separate financial statements are as follows:

5.1.1 Adjustment of finance lease assets-power plants and finance lease liabilities-power plants of EGAT.

5.1.2 Adjustment due to the error correction of the investment in associate of subsidiary from recognition the amount that has been paid to full amount that signed in Subscription Agreement include related direct cost. The obligation that has not been paid is recognized as liabilities.

5.1.3 Adjustment of share of profit from investment in associate of subsidiary due to fair value measurement. This has been made in the financial statement in which the equity method is applied.

5.1.4 Adjustment of income tax expenses because investment in associate of subsidiary and gain (loss) on foreign exchange rate from recognition its liabilities are revised.

5.2 Reclassifications on the consolidated and separate financial statements are as follow:

5.2.1 Reclassification of exchange differences on translating financial statement and share of other comprehensive income (expense) of associates of subsidiary.

5.2.2 Reclassification of other components of equity - loss on remeasurements of defined benefit plans, share of other comprehensive income (expense) of associates of subsidiary and share of other comprehensive income (expense) of joint ventures in items that will not be reclassified subsequently to profit or loss and retained earnings-unappropriated.

5.2.3 Reclassification of other accounts receivable and other current assets and other non-current assets, investments held as available for sale and other long-term investments, trade accounts payable-others and other accounts payable, accrued interest expenses and other non-current accounts payable, selling expenses and administrative expenses in order to comply with the manner of presentation in financial statements for the year ended December 31, 2017.

The effects on the statements of financial position, statements of income, statements of comprehensive income and statements of changes in equity are as follows:

Unit : Million Baht

	Consolidated financial statements			
	Before			As adjusted
	adjusted and	Adjusted	Reclassified	and
	reclassified			reclassified
Statements of financial position				
As at December 31, 2016				
Other accounts receivable	8,565.33	-	(10.16)	8,555.17
Other current assets	1,263.11	-	0.75	1,263.86
Investments held as available for sale	-	-	9,152.58	9,152.58
Investments in associates	28,530.29	5,752.36	-	34,282.65
Other long-term investments	9,649.18	-	(9,152.58)	496.60
Finance lease assets-power plants	332,656.99	720.21	-	333,377.20
Other non-current assets	4,240.84	-	9.41	4,250.25
Trade accounts payable-others	45,967.89	-	(3.65)	45,964.24
Other accounts payable	11,153.15	-	3.65	11,156.80
Accrued interest expenses	1,573.13	-	(78.05)	1,495.08
Current portion of finance lease liabilities				
-power plants	16,661.29	(109.70)	-	16,551.59
Other non-current accounts payable	-	-	78.05	78.05
Finance lease liabilities-power plants	296,587.70	(1,363.75)	-	295,223.95
Accounts payable-related party	-	5,814.40	-	5,814.40
Retained earnings-unappropriated	275,911.92	2,131.62	(1,918.39)	276,125.15
Other components of equity	1,125.76	-	1,918.39	3,044.15

Unit : Million Baht

	Consolidated financial statements			
	Before adjusted and reclassified	Adjusted	Reclassified	As adjusted and reclassified
Statements of income				
For the year ended December 31, 2016				
<u>Revenues</u>				
Other income	5,014.38	(252.14)	-	4,762.24
Share of profit from investments in associates	2,749.78	(21.11)	-	2,728.67
<u>Expenses</u>				
Cost of electric energy sales	395,474.20	162.43	-	395,636.63
Selling expenses	205.43	-	(4.01)	201.42
Administrative expenses	16,241.51	(7.89)	4.01	16,237.63
Finance costs	41,700.70	3.26	-	41,703.96
Income tax expenses	886.94	(7.04)	-	879.90
<u>Profit for the year</u>				
Profit for the year	47,203.40	(424.01)	-	46,779.39
Statements of comprehensive income				
For the year ended December 31, 2016				
Exchange differences on translating financial statement	(78.68)	-	(46.64)	(125.32)
Share of other comprehensive income (expense) of associates that will be reclassified subsequently to profit or loss	(41.22)	-	46.64	5.42

Unit : Million Baht

	Consolidated financial statements			
	Before adjusted and reclassified	Adjusted	Reclassified	As adjusted and reclassified
Statements of changes in equity				
As at January 1, 2017				
Retained earnings-unappropriated	275,911.92	2,131.62	(1,918.39)	276,125.15
Exchange differences on translating financial statement	(1,214.36)	-	109.71	(1,104.65)
Loss on remeasurements of defined benefit plans	(1,896.97)	-	1,896.97	-
Share of other comprehensive income (expense) of associates	912.47	-	(91.20)	821.27
Share of other comprehensive income (expense) of joint ventures	(2.73)	-	2.91	0.18
Total equity	400,923.47	2,131.62	-	403,055.09
Statements of financial position				
As at December 31, 2015				
Other accounts receivable	10,190.15	-	(28.23)	10,161.92
Other current assets	1,789.13	-	8.61	1,797.74
Investments held as available for sale	-	-	9,640.36	9,640.36
Other long-term investments	10,099.99	-	(9,640.36)	459.63
Finance lease assets-power plants	285,072.13	755.05	-	285,827.18
Other non-current assets	3,427.92	-	19.62	3,447.54
Current portion of finance lease liabilities				
-power plants	14,561.18	(121.82)	-	14,439.36
Finance lease liabilities-power plants	250,375.20	(1,678.75)	-	248,696.45
Retained earnings-unappropriated	256,530.52	2,555.62	(1,905.47)	257,180.67
Other components of equity	1,300.50	-	1,905.47	3,205.97

Unit : Million Baht

Consolidated financial statements

	Before adjusted and reclassified	Adjusted	Reclassified	As adjusted and reclassified
Statements of changes in equity				
As at January 1, 2016				
Retained earnings-unappropriated	256,530.52	2,555.62	(1,905.47)	257,180.67
Exchange differences on translating financial statement	(1,181.58)	-	156.35	(1,025.23)
Loss on remeasurements of defined benefit plans	(1,886.53)	-	1,886.53	-
Share of other comprehensive income (expense) of associates	952.48	-	(136.62)	815.86
Share of other comprehensive income (expense) of joint ventures	0.74	-	(0.79)	(0.05)
Total equity	380,673.19	2,555.62	-	383,228.81

Unit : Million Baht

Separate financial statements

	Before adjusted and reclassified	Adjusted	Reclassified	As adjusted and reclassified
Statements of financial position				
As at December 31, 2016				
Other accounts receivable	7,937.91	-	(46.27)	7,891.64
Other current assets	43.56	-	36.86	80.42
Investments held as available for sale	-	-	5,422.30	5,422.30
Other long-term investments	5,422.30	-	(5,422.30)	-
Finance lease assets-power plants	332,656.99	720.21	-	333,377.20
Other non-current assets	3,479.88	-	9.41	3,489.29
Current portion of finance lease liabilities				
-power plants	20,431.34	(109.70)	-	20,321.64
Finance lease liabilities-power plants	317,812.90	(1,363.75)	-	316,449.15
Retained earnings-unappropriated	239,032.88	2,193.66	(1,889.70)	239,336.84
Other components of equity	(1,534.12)	-	1,889.70	355.58

Unit : Million Baht

Separate financial statements

	Before adjusted and reclassified	Adjusted	Reclassified	As adjusted and reclassified
Statements of income				
For the year ended December 31, 2016				
<u>Revenues</u>				
Other income	6,669.08	(196.27)	-	6,472.81
<u>Expenses</u>				
Cost of electric energy sales	394,953.31	162.43	-	395,115.74
Finance costs	44,789.32	3.26	-	44,792.58
<u>Profit for the year</u>				
Profit for the year	41,072.94	(361.96)	-	40,710.98
Statements of changes in equity				
As at January 1, 2017				
Retained earnings-unappropriated	239,032.88	2,193.66	(1,889.70)	239,336.84
Loss on remeasurements of defined benefit plans	(1,889.70)	-	1,889.70	-
Total equity	326,701.31	2,193.66	-	328,894.97
Statements of financial position				
As at December 31, 2015				
Other accounts receivable	9,419.91	-	(59.09)	9,360.82
Other current assets	-	-	39.47	39.47
Investments held as available for sale	-	-	5,370.16	5,370.16
Other long-term investments	5,370.16	-	(5,370.16)	-
Finance lease assets-power plants	285,072.13	755.05	-	285,827.18
Other non-current assets	2,418.86	-	19.62	2,438.48
Current portion of finance lease liabilities				
-power plants	17,756.73	(121.82)	-	17,634.91
Finance lease liabilities-power plants	275,370.45	(1,678.75)	-	273,691.70
Retained earnings-unappropriated	222,445.20	2,555.62	(1,889.70)	223,111.12
Other components of equity	(1,733.29)	-	1,889.70	156.41

Unit : Million Baht

	Separate financial statements			
	Before adjusted and reclassified	Adjusted	Reclassified	As adjusted and reclassified
Statements of changes in equity				
As at January 1, 2016				
Retained earnings-unappropriated	222,445.20	2,555.62	(1,889.70)	223,111.12
Loss on remeasurements of defined benefit plans	(1,889.70)	-	1,889.70	-
Total equity	309,983.14	2,555.62	-	312,538.76

6. Supplementary information

6.1 Cash and cash equivalents comprise

	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Cash on hand	7.01	8.15	6.69	7.69
Cash at banks current and saving accounts	43,235.09	37,891.67	38,292.57	31,889.80
Fixed deposits not more than 3 months	23,670.95	25,368.09	21,000.00	25,000.00
Fixed deposit receipts	4,042.06	3,217.80	2,000.00	-
Total	70,955.11	66,485.71	61,299.26	56,897.49

6.2 Current investments comprise

	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Fixed deposits more than 3 months but not more than 12 months	22,426.76	25,003.78	20,013.07	24,401.60
Fixed deposit receipts	4,252.85	8,644.87	2,000.00	4,000.00
Debenture	30.00	23.00	-	-
Government bonds more than 3 months	9,996.17	-	9,996.17	-
Investments in trading securities	493.08	482.47	-	-
Total	37,198.86	34,154.12	32,009.24	28,401.60

6.3 Trade accounts receivable-others comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Receivables from electric energy sales				
Metropolitan Electricity Authority	23,518.82	23,133.11	23,518.82	23,133.11
Provincial Electricity Authority	28,199.66	27,206.71	28,199.66	27,206.71
Others	3,125.86	5,647.20	3,125.86	5,647.20
	54,844.34	55,987.02	54,844.34	55,987.02
Services and other receivables	890.17	729.35	302.48	286.28
Total	55,734.51	56,716.37	55,146.82	56,273.30
Less : Allowance for doubtful accounts	(46.58)	(48.35)	(46.58)	(48.35)
Balance	55,687.93	56,668.02	55,100.24	56,224.95

Trade accounts receivable-others can be analyzed by categories and outstanding period as follows:

	Unit : Million Baht			
	Consolidated financial statements			
	Electric	Service and	Total	
Outstanding period	energy sales	others	Dec 31, 17	Dec 31, 16
Undue portion	52,520.76	829.26	53,350.02	52,353.99
Overdue not more than 6 months	-	11.66	11.66	266.34
Overdue more than 6 months to 1 year	0.44	0.08	0.52	1,296.26
Overdue more than 1 year	2,323.14	49.17	2,372.31	2,799.78
Total	54,844.34	890.17	55,734.51	56,716.37
Less : Allowance for doubtful accounts	-	(46.58)	(46.58)	(48.35)
Balance	54,844.34	843.59	55,687.93	56,668.02

	Separate financial statements			
	Electric	Service and	Total	
	energy sales	others	Dec 31, 17	Dec 31, 16
Outstanding period				
Undue portion	52,520.76	249.35	52,770.11	51,912.81
Overdue not more than 6 months	-	3.88	3.88	265.40
Overdue more than 6 months to 1 year	0.44	0.08	0.52	1,296.26
Overdue more than 1 year	2,323.14	49.17	2,372.31	2,798.83
Total	54,844.34	302.48	55,146.82	56,273.30
Less : Allowance for doubtful accounts	-	(46.58)	(46.58)	(48.35)
Balance	54,844.34	255.90	55,100.24	56,224.95

6.4 Related parties transactions

Related parties of EGAT as at December 31, 2017 are as follows:

Company name	Country of incorporation/ nationality	Relationship
EGAT International Co., Ltd.	Thailand	Subsidiary, EGAT has 100% shareholding
EGAT Diamond Service Co., Ltd.	Thailand	Subsidiary, EGAT has 45% shareholding
Ratchaburi Electricity Generating Holding Pcl.	Thailand	Subsidiary, EGAT has 45% shareholding
District Cooling System and Power Plant Co., Ltd.	Thailand	Joint venture of EGAT, EGAT has 35% shareholding
Electricity Generating Pcl.	Thailand	Associate, EGAT has 25.41% shareholding
Ratchaburi Electricity Generating Co., Ltd.	Thailand	Subsidiary of Ratchaburi Electricity Generating Holding Pcl.
Ratchaburi Energy Co., Ltd.	Thailand	Subsidiary of Ratchaburi Electricity Generating Holding Pcl.
RATCH-Lao Services Co., Ltd.	Lao PDR	Subsidiary of Ratchaburi Electricity Generating Holding Pcl.
RH International Corporation Ltd.	Thailand	Subsidiary of Ratchaburi Electricity Generating Holding Pcl.
RATCH O&M Co., Ltd.	Thailand	Subsidiary of Ratchaburi Electricity Generating Holding Pcl.
Tri Energy Co., Ltd.	Thailand	Subsidiary of Ratchaburi Electricity Generating Holding Pcl.
(Liquidation completed in 2017)		
Ratchaburi Alliances Co., Ltd.	Thailand	Subsidiary of Ratchaburi Electricity Generating Holding Pcl.
Khanom Electricity Generating Co., Ltd.	Thailand	Related party of EGAT
EGCO Engineering and Services Co., Ltd.	Thailand	Related party of EGAT
Gulf Electric Pcl.	Thailand	Related party of EGAT
BLCP Power Co., Ltd.	Thailand	Related party of EGAT

Company name	Country of incorporation/ nationality	Relationship
Xayaburi Power Co., Ltd.	Lao PDR	Related party of EGAT
Hongsa Power Co., Ltd.	Lao PDR	Related party of EGAT
Phu Fai Mining Co., Ltd.	Lao PDR	Related party of EGAT
Ratchaburi Power Co., Ltd.	Thailand	Related party of EGAT
RH International (Mauritius) Corporation Ltd.	Mauritius	Related party of EGAT
RE Solar 1 Co., Ltd.	Thailand	Related party of EGAT
CN Biomass Co., Ltd.	Thailand	Related party of EGAT
PB Biomass Co., Ltd.	Thailand	Related party of EGAT
LP Biomass Co., Ltd.	Thailand	Related party of EGAT
RH International (Singapore) Corporation Pte. Ltd.	Singapore	Related party of EGAT
RATCH China Power Co., Ltd.	Hong Kong	Related party of EGAT
RATCH-Australia Corporation Ltd.	Australia	Related party of EGAT
Mount Emerald Wind Farm Pty Ltd.	Australia	Related party of EGAT
RATCH-Australia Collinsville Solar PV Pty Ltd.	Australia	Related party of EGAT
PT Medco Ratch Power Riau	Republic of Indonesia	Related party of EGAT
Nam Ngiep 1 Power Co., Ltd.	Lao PDR	Related party of EGAT
PT Adaro Indonesia	Republic of Indonesia	Related party of EGAT

Related parties transactions the details are as follows:

6.4.1 Trade accounts receivable-related parties comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Subsidiaries	-	-	429.38	321.55
Joint venture	19.85	15.68	19.85	15.68
Other related parties	87.92	31.63	87.92	31.63
Total trade accounts receivable-related parties	107.77	47.31	537.15	368.86

Trade accounts receivable-related parties can be analyzed by categories and outstanding period as follows:

Unit : Million Baht				
Outstanding period	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Undue portion	105.97	47.31	535.27	368.86
Overdue not more than 6 months	1.80	-	1.88	-
Total trade accounts receivable-related parties	107.77	47.31	537.15	368.86

6.4.2 Long-term loans to related parties

Long-term loans to related parties in the consolidated financial statements are the transactions of the group of EGAT's subsidiaries comprise of:

Unit : Million Baht		
	Consolidated financial statements	
	Dec 31, 17	Dec 31, 16
Long-term loans to related parties	42.81	46.95
Total	42.81	46.95

6.4.3 Trade accounts payable-related parties comprise

Unit : Million Baht				
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Subsidiaries	-	-	6,413.91	7,209.08
Joint venture	146.20	123.29	146.20	123.29
Other related parties	11,154.70	11,626.56	11,154.70	11,626.56
Total trade accounts payable				
-related parties	11,300.90	11,749.85	17,714.81	18,958.93

6.4.4 Long-term loans from related parties

Long-term loans from related parties in the consolidated financial statements are the transactions of the group of EGAT's subsidiaries comprise of:

		Unit : Million Baht	
		Consolidated financial statements	
		Dec 31, 17	Dec 31, 16
Long-term loans from related parties		1,013.80	1,029.09
Total		1,013.80	1,029.09

6.4.5 Account payable-related party

As at Dec 31, 2017 and 2016, EGAT recorded account payable-related party which is EGAT International Company Limited (EGATi) (EGAT's subsidiary) in the amount of Baht 5,304.82 million and Baht 5,814.40 million respectively. EGATi has signed Subscription Agreement for purchase shares in PT Adaro Indonesia and EGATi will pay the remaining in amount of USD 161.50 million in 2022 - 2027 when PT Adaro Indonesia has met the condition in Subscription Agreement.

6.4.6 Revenues and expenses-related parties comprise

		Unit : Million Baht			
		Consolidated financial statements		Separate financial statements	
		2017	2016	2017	2016
Revenues					
Revenue from electric energy sales					
Subsidiary		-	-	204.40	193.34
Other related parties		96.22	209.97	96.22	209.97
Revenue from sales of other goods and services					
Subsidiaries		-	-	1,719.22	1,284.93
Associate		1.12	2.39	1.12	2.39
Joint venture		101.38	90.44	101.38	90.44
Other related parties		1,245.36	5,091.81	1,245.36	5,091.81
Expenses					
Cost of electric energy sales					
Subsidiary		-	-	-	2.02
Joint venture		793.27	825.02	793.27	825.02
Other related parties		-	17.06	-	17.06

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Cost of sales of other goods and services				
Subsidiaries	-	-	1,250.37	901.80
Associate	0.10	0.23	0.10	0.23
Joint venture	86.50	87.59	86.50	87.59
Other related parties	709.45	4,579.27	709.45	4,579.27

6.4.7 Executive remunerations the details are as follows:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Directors remuneration				
Meeting remuneration and bonuses	46.10	46.20	9.02	10.31
	46.10	46.20	9.02	10.31
Managements remuneration				
Salaries, bonuses and other short-term				
employee benefits	304.88	290.38	139.91	134.24
Post-employee benefits and other long-term				
employee benefits	19.27	19.82	4.37	3.83
	324.15	310.20	144.28	138.07
Total	370.25	356.40	153.30	148.38

6.5 Accrued / surplus revenue from electric energy sales according to automatic tariff adjustment (Ft), deferred revenue for electricity compensation and deposit for deferred revenue for electricity compensation

As at January 1, 2017, EGAT had the surplus revenue from electric energy sales according to automatic tariff adjustment (Ft) in the amount of Baht 14,525.61 million. As at January 11, 2017, Energy Regulatory Commission (ERC) has approved the Ft of wholesale for January - April 2017, which was equivalent to -36.38 satang per unit for MEA and -40.39 satang per unit for PEA. As at May 3, 2017, ERC has approved the Ft of wholesale for May - August 2017, which was equivalent to -24.14 satang per unit for MEA and -28.80 satang per unit for PEA. As at July 27, 2017, ERC has approved the Ft of wholesale for September - December 2017, which was equivalent to -15.85 satang per unit for MEA and -25.01 satang per unit for PEA. However, the actual cost of purchasing fuel and electricity in such period are lower than the estimated Ft calculating formula, so that as of December 31, 2017, EGAT had surplus Ft revenue in the amount of Baht 14,572.19 million.

As at January 1, 2017 and December 31, 2017, EGAT recorded deferred revenue for electricity compensation in the amount of Baht 7,991.25 million and Baht 5,413.10 million respectively. Deferred revenue for electricity compensation decreased by Baht 2,578.15 million due to the fact that on May 3, 2017, ERC has made the approval that the amount of Baht 2,648.00 million deferred revenue for electricity compensation discounted in the surplus revenue from electric energy sales which is classified in non-current liabilities.

Since 2015, ERC has made the approval in the meeting 67/2558 (No. 377) which the deposit for deferred revenue for electricity compensation will be separately presented from cash and cash equivalents. This deposit account is placed restriction that EGAT is not allowed to use for other purposes which is classified in non-current assets. As at January 1, 2017 and December 31, 2017, EGAT had the deposit for deferred revenue for electricity compensation in the amount of Baht 7,991.25 million and Baht 5,413.10 million respectively.

6.6 Other accounts receivable comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Employee accounts receivable	148.25	328.94	146.10	323.40
Other accounts receivable	869.99	233.93	246.15	168.98
Less : Allowance for doubtful accounts	(8.56)	(11.38)	(8.56)	(11.38)
Total	1,009.68	551.49	383.69	481.00
Advances and Prepaid	6,769.72	3,874.56	6,530.89	3,720.68
Accrued revenues	626.97	553.98	123.92	114.82
Input tax	3,941.93	3,575.14	3,941.93	3,575.14
Balance	12,348.30	8,555.17	10,980.43	7,891.64

6.7 Materials and supplies comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Fuel oil for power plant	5,207.70	5,093.58	4,015.44	3,946.48
Lignite stock	1,530.14	1,645.41	1,530.14	1,645.41
Spare parts, other materials and supplies	11,786.92	12,084.01	9,807.51	10,136.23
Less : Allowance for obsolescence	(6,870.84)	(6,835.64)	(5,874.73)	(5,841.26)
Balance	11,653.92	11,987.36	9,478.36	9,886.86

6.8 Other current assets comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Pledged bank deposits	440.87	1,128.21	-	-
Others	241.83	135.64	110.97	80.42
Balance	682.70	1,263.85	110.97	80.42

EGAT's subsidiary had pledged bank deposits amount to USD 13.56 million or approximately amount to Baht 440.87 million to pledge outstanding investment for Nam Ngiep 1 Power Co., Ltd.

6.9 Investments in subsidiaries, associates and joint ventures

6.9.1 Details of subsidiaries, associate and joint venture of EGAT

Company name	Country of incorporation/ nationality	Business	Shareholding (%)	
			Dec 31, 17	Dec 31, 16
Subsidiaries				
EGAT International Co., Ltd.	Thailand	Investing in electricity generation and related businesses in foreign countries	100	100
EGAT Diamond Service Co., Ltd.	Thailand	Gas turbine maintenance including components and spare parts	45	45
Ratchaburi Electricity Generating Holding Pcl.	Thailand	Investing in companies with the purpose of electricity generation and supply	45	45
Associate				
Electricity Generating Pcl.	Thailand	Generation and supply of electricity	25.41	25.41
Joint venture				
District Cooling System and Power Plant Co., Ltd.	Thailand	Generation and supply of electricity and chilled water	35	35

6.9.2 Details of subsidiaries, associates and joint ventures of subsidiaries

Company name	Country of incorporation/ nationality	Business	Shareholding (%)	
			Dec 31, 17	Dec 31, 16
Direct subsidiaries of subsidiary : Ratchaburi Electricity Generating Holding Pcl.				
Ratchaburi Electricity Generating Co., Ltd.	Thailand	Generation and supply of electricity and investment in electricity business	100	100
Ratchaburi Energy Co., Ltd.	Thailand	Power plant development and operation and investment in electricity business	100	100
RATCH-Lao Services Co., Ltd.	Lao PDR	Operation and maintenance services	100	100
RH International Corporation Ltd.	Thailand	Investment in electricity business	100	100
RATCH O&M Co., Ltd.	Thailand	Operation and maintenance services	100	100
Tri Energy Co., Ltd.	Thailand	Generation and supply of electricity	-	100
(Liquidation completed in 2017)				
Ratchaburi Alliances Co., Ltd.	Thailand	Investment in electricity business	100	100
Indirect subsidiaries of subsidiary : Ratchaburi Electricity Generating Holding Pcl.				
RH International (Mauritius) Corporation Ltd.	Mauritius	Investment in electricity business in foreign country	100	100
RH International (Singapore) Corporation Pte. Ltd.	Singapore	Investment in electricity business in foreign country	100	100
RATCH-Australia Corporation Ltd. and its subsidiaries	Australia	Power plant development and operation and investment in electricity business	80	80
RATCH China Power Co., Ltd.	Hong Kong	Investment in electricity business in foreign country	100	100
RE Solar 1 Co., Ltd.	Thailand	Generation and supply of electricity	100	100
CN Biomass Co., Ltd.	Thailand	Generation and supply of electricity	100	100
PB Biomass Co., Ltd.	Thailand	Generation and supply of electricity	100	100
LP Biomass Co., Ltd.	Thailand	Generation and supply of electricity	100	100
Associates of subsidiary : EGAT International Co., Ltd.				
Nam Ngiep 1 Power Co., Ltd.	Lao PDR	Generation and supply of electricity	30	30
PT Adaro Indonesia	Republic of Indonesia	Generation and supply of coal	11.53	11.53

Company name	Country of incorporation/ nationality	Business	Shareholding (%)	
			Dec 31, 17	Dec 31, 16
Associates of subsidiary : Ratchaburi Electricity Generating Holding Pcl.				
First Korat Wind Co., Ltd.	Thailand	Generation and supply of electricity	20	20
K.R. TWO Co., Ltd.	Thailand	Generation and supply of electricity	20	20
Perth Power Partnership (Kwinana)	Australia	Generation and supply of electricity	24	24
Joint ventures of subsidiary : Ratchaburi Electricity Generating Holding Pcl.				
Chubu Ratchaburi Electric Services Co., Ltd.	Thailand	Operation and maintenance services	50	50
South East Asia Energy Ltd. and its subsidiary	Thailand	Investment in electricity business	33.33	33.33
Nam Ngum 3 Power Co., Ltd.	Lao PDR	Generation and supply of electricity	25	25
Xe-Pian Xe-Namnoy Power Co., Ltd.	Lao PDR	Generation and supply of electricity	25	25
KK Power Co., Ltd.	Cambodia	Generation and supply of electricity	-	50
Ratchaburi Power Co., Ltd.	Thailand	Generation and supply of electricity	25	25
Nava Nakorn Electricity Generating Co., Ltd.	Thailand	Generation and supply of electricity and steam	40	40
Ratchaburi World Cogeneration Co., Ltd.	Thailand	Generation and supply of electricity and steam	40	40
Solarta Co., Ltd.	Thailand	Generation and supply of electricity	49	49
Solar Power (Korat 3) Co., Ltd.	Thailand	Generation and supply of electricity	40	40
Solar Power (Korat 4) Co., Ltd.	Thailand	Generation and supply of electricity	40	40
Solar Power (Korat 7) Co., Ltd.	Thailand	Generation and supply of electricity	40	40
Songkhla Biomass Co., Ltd.	Thailand	Generation and supply of electricity	40	40
Songkhla Biofuel Co., Ltd.	Thailand	Supply the biomass fuel	40	40
Oversea Green Energy Co., Ltd.	Thailand	Power plant management services	-	60
Berkprai Cogeneration Co., Ltd.	Thailand	Generation and supply of electricity and steam	35	35
Hongsa Power Co., Ltd.	Lao PDR	Generation and supply of electricity	40	40
Phu Fai Mining Co., Ltd.	Lao PDR	Generation and supply of coal	37.50	37.50
RICI International Investment Pte. Ltd.	Singapore	Investment in electricity business in foreign country	-	60
PT Medco Ratch Power Riau	Republic of Indonesia	Generation and supply of electricity	49	-

6.9.3 Investments in associates and joint ventures in the consolidated financial statements

Unit : Million Baht

Company name	Shareholding (%)		Cost Method		Equity Method		Dividend	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Associates								
Electricity Generating Pcl.	25.41	25.41	1,587.55	1,587.55	21,262.75	20,186.31	902.97	869.53
Nam Ngiep 1 Power Co., Ltd.	30	30	2,178.71	1,557.25	1,475.56	1,212.15	-	-
PT Adaro Indonesia	11.53	11.53	11,603.32	11,603.32	9,768.14	11,322.62	2,934.62	403.13
First Korat Wind Co., Ltd.	20	20	399.20	399.20	491.95	563.97	186.00	80.00
K.R. TWO Co., Ltd.	20	20	365.40	365.40	414.28	458.38	130.00	63.00
Perth Power Partnership (Kwinana)	24	24	618.53	618.53	484.10	539.22	103.31	124.20
Total associates			16,752.71	16,131.25	33,896.78	34,282.65	4,256.90	1,539.86
Joint ventures								
District Cooling System and Power Plant Co., Ltd.	35	35	584.50	584.50	877.96	799.50	21.35	15.40
Chubu Ratchaburi Electric Services Co., Ltd.	50	50	10.00	10.00	77.03	83.21	35.00	48.00
South East Asia Energy Ltd. and its subsidiary	33.33	33.33	2,202.25	2,202.25	2,627.32	2,627.14	240.04	603.41
Nam Ngum 3 Power Co., Ltd.	25	25	0.45	0.45	-	-	-	-
Xe-Pian Xe-Namnoy Power Co., Ltd.	25	25	2,067.64	1,415.99	1,981.63	1,653.05	-	-
KK Power Co., Ltd.	-	50	-	15.44	-	-	-	-
Ratchaburi Power Co., Ltd.	25	25	1,831.25	1,831.25	3,709.39	3,827.00	450.00	700.00
Nava Nakorn Electricity Generating Co., Ltd.	40	40	610.00	610.00	784.84	622.31	-	-
Ratchaburi World Cogeneration Co., Ltd.	40	40	1,000.00	1,000.00	1,242.43	1,149.33	150.00	244.00
Solararta Co., Ltd.	49	49	545.96	545.96	1,162.57	1,025.65	59.29	81.40
Solar Power (Korat 3) Co., Ltd.	40	40	75.50	75.50	127.29	116.71	16.61	10.27
Solar Power (Korat 4) Co., Ltd.	40	40	79.70	79.70	131.45	117.16	11.24	6.29
Solar Power (Korat 7) Co., Ltd.	40	40	75.50	75.50	125.80	112.25	14.12	8.91
Songkhla Biomass Co., Ltd.	40	40	98.40	98.40	135.10	124.18	16.00	-
Songkhla Biofuel Co., Ltd.	40	40	0.40	0.40	0.35	0.37	-	-
Oversea Green Energy Co., Ltd.	-	60	-	9.60	-	12.23	-	-
Berkprai Cogeneration Co., Ltd.	35	35	465.85	116.46	457.61	114.65	-	-
Hongsa Power Co., Ltd.	40	40	12,929.89	12,929.89	11,664.46	11,835.32	960.00	1,165.21
Phu Fai Mining Co., Ltd.	37.50	37.50	0.63	0.63	272.24	134.90	-	-
RICI International Investment Pte. Ltd.	-	60	-	306.57	-	312.27	-	-
PT Medco Ratch Power Riau	49	-	3.80	-	-	-	-	-
Total joint ventures			22,581.72	21,908.49	25,377.47	24,667.23	1,973.65	2,882.89
Grand total			39,334.43	38,039.74	59,274.25	58,949.88	6,230.55	4,422.75

During the year 2017, subsidiaries of EGAT has paid for the additional paid-up share capital of Xe-Pian Xe-Namnoy Power Co., Ltd., Berkprai Cogeneration Co., Ltd. and has paid for the increase in share capital of Nam Ngiep 1 Power Co., Ltd., PT Medco Ratch Power Riau and has disposals of investments in KK Power Co., Ltd., Oversea Green Energy Co., Ltd., RICI International Investment Pte. Ltd.

6.9.4 Investments in subsidiaries, associate and joint venture in the separate financial statements

Company name	Unit : Million Baht					
	Shareholding (%)		Cost Method		Dividend	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Subsidiaries						
EGAT International Co., Ltd.	100	100	12,197.40	12,095.50	-	-
EGAT Diamond Service Co., Ltd.	45	45	280.35	280.35	-	-
Ratchaburi Electricity Generating Holding Pcl.	45	45	6,525.00	6,525.00	1,566.00	1,481.18
Total subsidiaries			19,002.75	18,900.85	1,566.00	1,481.18
Associate						
Electricity Generating Pcl.	25.41	25.41	1,587.55	1,587.55	902.97	869.53
Total associate			1,587.55	1,587.55	902.97	869.53
Joint venture						
District Cooling System and Power Plant Co., Ltd.	35	35	584.50	584.50	21.35	15.40
Total joint venture			584.50	584.50	21.35	15.40
Grand total			21,174.80	21,072.90	2,490.32	2,366.11

During the year 2017, EGAT has paid for the increase in share capital of EGAT International Co., Ltd.

6.9.5 Movements in investments in the consolidated financial statements and the separate financial statements

6.9.5.1 Movements in investments in associates and joint ventures accounted under the equity method in the consolidated financial statements

	Unit : Million Baht	
	Dec 31, 17	Dec 31, 16
Balance at the beginning	58,949.88	37,686.20
Share of profit from investments-equity method	7,982.37	5,431.05
Retained earnings-legal reserve	5.34	4.37
Additional paid-up share capital in associates	621.46	12,193.81
Additional paid-up share capital in joint ventures	1,004.84	7,708.75
Disposals of investments in joint ventures	(308.64)	-
Gain on remeasuring investments held as available for sale	42.27	13.71
Loss on remeasurements of defined benefit plans	(13.86)	(7.01)
Dividend income	(6,230.55)	(4,422.75)
Exchange differences on translating financial statement	(2,836.54)	295.07
Gain from cash flow hedge	51.01	46.68
Others	6.67	-
Balance at the end	59,274.25	58,949.88

6.9.5.2 Movements in investments in subsidiaries, associate and joint venture accounted for under the cost method in the separate financial statements

	Unit : Million Baht	
	Dec 31, 17	Dec 31, 16
Balance at the beginning	21,072.90	15,085.40
Additional investments	101.90	5,987.50
Balance at the end	21,174.80	21,072.90

6.9.6 Financial information of subsidiaries that have material non-controlling interests, associate and joint venture

6.9.6.1 Financial information of subsidiaries that have material non-controlling interests are as follow:

Company name	Country of incorporation/ nationality	Non-controlling interests Shareholding (%)	
		2017	2016
EGAT Diamond Service Co., Ltd. (EDS)	Thailand	55	55
Ratchaburi Electricity Generating Holding Pcl. (RATCH)	Thailand	55	55

Financial information of subsidiaries that have material non-controlling interests after accounting policy adjustment, before eliminations:

Summary of financial position

	Unit : Million Baht			
	Dec 31, 17		Dec 31, 16	
	EDS	RATCH	EDS	RATCH
Current assets	258.14	23,525.93	190.63	26,303.02
Non-current assets	345.76	70,698.90	375.65	70,088.07
Current liabilities	(20.79)	(9,541.63)	(53.51)	(10,867.76)
Non-current liabilities	(3.41)	(21,402.02)	(12.54)	(23,070.56)
Net assets	579.70	63,281.18	500.23	62,452.77
Owners of EGAT	260.87	28,476.53	225.10	28,103.75
Non-controlling interests	318.83	34,804.65	275.13	34,349.02

Summary of comprehensive income (expense)

	Unit : Million Baht			
	2017		2016	
	EDS	RATCH	EDS	RATCH
Revenues	269.44	46,890.80	247.33	51,437.54
Expenses	(189.98)	(40,036.13)	(176.88)	(44,501.75)
Profit (loss) before income taxes	79.46	6,854.67	70.45	6,935.79
Income tax expenses	-	(870.89)	-	(863.24)
Net profit (loss)	79.46	5,983.78	70.45	6,072.55
Other comprehensive income (expense)	-	(1,675.37)	-	(748.12)
Total comprehensive income (expense)	79.46	4,308.41	70.45	5,324.43
Owners of EGAT	35.76	1,938.78	31.70	2,395.99
Non-controlling interests	43.70	2,369.63	38.75	2,928.44
Dividend paid to Non-controlling interests	-	1,914.00	-	1,810.33

Summary of cash flows

	Unit : Million Baht			
	2017		2016	
	EDS	RATCH	EDS	RATCH
Cash flows from operating activities	54.18	8,207.42	92.61	8,706.42
Cash flows from investing activities	(27.16)	(1,605.87)	(2.60)	(4,978.96)
Cash flows from financing activities	(41.24)	(6,430.40)	(32.64)	(1,417.27)
Others	-	(302.90)	-	(355.50)
Net increase (decrease) in cash and cash equivalents	(14.22)	(131.75)	57.37	1,954.69

6.9.6.2 Financial information of the associate of EGAT, after accounting policy adjustment is as follows:

Summary of financial position - Electricity Generating Pcl.

	Unit : Million Baht	
	Dec 31, 17	Dec 31, 16
Current assets	39,542.81	19,998.04
Non-current assets	160,627.14	176,881.41
Current liabilities	(17,471.66)	(13,393.39)
Non-current liabilities	(98,400.77)	(103,418.14)
Net assets	84,297.52	80,067.92

Summary of profit or loss - Electricity Generating Pcl.

	Unit : Million Baht	
	Dec 31, 17	Dec 31, 16
Revenues*	38,394.74	31,050.47
Expenses	(26,072.46)	(21,581.47)
Profit (loss) before income taxes	12,322.28	9,469.00
Income tax expenses	(574.82)	(1,040.21)
Net profit (loss)	11,747.46	8,428.79

* Including gain (loss) on foreign exchange rate

6.9.6.3 Financial information of the joint venture of EGAT, after accounting policy adjustment is as follows:

Summary of financial position - District Cooling System and Power Plant Co., Ltd.

	Unit : Million Baht	
	Dec 31, 17	Dec 31, 16
Current assets	1,284.51	1,085.56
Non-current assets	2,309.95	2,639.35
Current liabilities	(626.41)	(602.32)
Non-current liabilities	(447.59)	(822.32)
Net assets	2,520.46	2,300.27

Summary of profit or loss - District Cooling System and Power Plant Co., Ltd.

	Unit : Million Baht	
	2017	2016
Revenues*	2,584.42	2,625.71
Expenses	(2,241.57)	(2,247.06)
Profit (loss) before income taxes	342.85	378.65
Income tax expenses	(61.80)	(73.95)
Net profit (loss)	281.05	304.70

* Including gain (loss) on foreign exchange rate

6.10 Finance lease assets-power plants

	Unit : Million Baht	
	Consolidated financial statements	Separate financial statements
Cost as at Jan 1, 17	446,945.92	446,945.92
Cost as at Dec 31, 17	446,945.92	446,945.92
Accumulated depreciation as at Jan 1, 17	(113,568.72)	(113,568.72)
Depreciation for the year	(18,130.35)	(18,130.35)
Accumulated depreciation as at Dec 31, 17	(131,699.07)	(131,699.07)
Net book value		
As at Dec 31, 16	333,377.20	333,377.20
As at Dec 31, 17	315,246.85	315,246.85

	Unit : Million Baht	
	Consolidated financial statements	Separate financial statements
Cost as at Jan 1, 16 (Before adjustment)	396,667.67	396,667.67
Adjustment	870.92	870.92
Cost as at Jan 1, 16 (Adjusted)	397,538.59	397,538.59
Increase during the year	65,289.61	65,289.61
Decrease during the year	(15,882.28)	(15,882.28)
Cost as at Dec 31, 16	446,945.92	446,945.92
Accumulated depreciation as at Jan 1, 16		
(Before adjustment)	(111,595.54)	(111,595.54)
Adjustment	(115.87)	(115.87)
Accumulated depreciation as at Jan 1, 16		
(Adjusted)	(111,711.41)	(111,711.41)
Depreciation for the year	(17,739.59)	(17,739.59)
Decrease during the year	15,882.28	15,882.28
Accumulated depreciation as at Dec 31, 16	(113,568.72)	(113,568.72)
Net book value		
As at Dec 31, 15	285,827.18	285,827.18
As at Dec 31, 16	333,377.20	333,377.20

6.11 Property, plant and equipment comprise

Consolidated financial statements														Unit : Million Baht
Land	Structures	Reservoirs and dams	Power plants	Equipment for power plants	Control system	Transmission system	Communication system	Coal handling system	Machinery spare parts for mine equipment	Vehicles	Others	Deferred charges of major inspection fee	Total	
Cost as at Jan 1, 17	13,984.01	33,150.29	29,542.01	327,162.84	37,444.95	856.30	182,653.14	7,140.88	7,318.38	6,817.92	3,409.62	11,438.62	6,593.24	667,555.05
Increase during the year	1,180.09	87.10	-	940.96	802.16	-	388.41	34.33	-	452.91	609.31	868.23	-	5,363.50
Transferred from work under construction	-	2,365.90	61.66	4,801.13	1,021.93	36.53	11,842.95	201.59	67.22	-	-	8.02	1,573.17	21,980.10
Exchange rate differences from currency translation	(3.69)	(1.79)	-	(345.88)	-	-	-	-	-	-	-	(0.08)	-	(351.44)
Reclassification	-	(10.95)	-	(1.66)	-	2.24	(0.15)	-	-	-	-	(28.00)	-	(38.52)
Disposal / write-off	-	(131.71)	-	(21.82)	-	(11.45)	(594.23)	(136.42)	-	(92.56)	(109.93)	(413.64)	(1,121.56)	(2,633.32)
Cost as at Dec 31, 17	15,160.41	35,458.84	29,603.67	332,535.57	39,269.04	883.62	194,290.12	7,240.38	7,385.60	7,178.27	3,909.00	11,873.15	7,044.85	691,875.37
Accumulated depreciation / Amortization as at Jan 1, 17	-	(20,897.76)	(11,494.93)	(206,793.61)	(27,664.31)	(771.83)	(92,309.30)	(6,141.57)	(4,945.25)	(5,318.28)	(2,550.07)	(8,306.98)	(2,786.87)	(390,023.61)
Depreciation/Amortization for the year	-	(1,307.85)	(465.67)	(11,768.71)	(2,908.76)	(52.07)	(6,202.27)	(248.56)	(159.25)	(334.12)	(338.68)	(753.29)	(1,601.06)	(26,140.29)
Exchange rate differences from currency translation	-	1.08	-	211.96	-	-	-	-	-	-	-	0.06	-	213.10
Reclassification	-	12.31	-	(0.04)	-	(2.24)	0.15	-	-	-	-	28.17	-	38.35
Disposal / write-off	-	116.43	-	21.43	-	10.18	540.52	136.22	-	92.26	109.93	409.33	1,121.56	2,557.86
Accumulated depreciation / Amortization as at Dec 31, 17	-	(22,075.79)	(11,960.60)	(218,328.97)	(30,573.07)	(815.96)	(97,970.90)	(6,253.91)	(5,104.50)	(5,560.14)	(2,778.82)	(8,622.71)	(3,266.37)	(413,354.59)
Accumulated impairment as at Jan 1, 17	-	(1.18)	-	(1,034.02)	-	-	-	-	-	-	-	-	-	(1,035.20)
as at Dec 31, 17	-	(1.18)	-	(1,034.02)	-	-	-	-	-	-	-	-	-	(1,035.20)
Net book value as at Dec 31, 16	13,984.01	12,251.35	18,047.08	119,335.21	9,780.64	84.47	90,343.84	999.31	2,373.13	1,499.64	859.55	3,131.64	3,806.37	276,496.24
as at Dec 31, 17	15,160.41	13,381.87	17,643.07	113,172.58	8,695.97	67.66	96,319.22	986.47	2,281.10	1,618.13	1,130.18	3,250.44	3,778.48	277,485.58

Unit : Million Baht

Consolidated financial statements

	Land	Structures	Reservoirs and dams	Power plants	Equipment for power plants	Control system	Transmission system	Communication system	Coal handling system	Machinery	Large-sized spare parts for mine equipment	Vehicles	Others	Deferred charges of major inspection fee	Total
Cost as at Jan 1, 16	9,777.99	31,182.33	29,367.14	322,906.56	36,722.49	856.43	171,949.32	7,006.05	6,484.01	6,823.11	42.85	3,014.07	11,294.41	6,734.84	644,161.60
Increase during the year	4,209.35	60.51	-	217.36	1,047.86	-	173.73	10.05	-	382.39	-	545.44	713.20	-	7,359.89
Transferred from work under construction	-	2,119.44	174.87	6,171.87	32.21	7.78	11,189.93	248.37	841.09	-	-	-	0.55	1,865.04	22,651.15
Exchange rate differences from currency translation	(3.33)	(1.53)	-	(339.10)	-	-	-	-	-	-	-	-	(0.08)	-	(344.04)
Reclassification	-	(12.00)	-	12.00	-	-	-	-	-	(0.29)	-	0.29	(7.53)	-	(7.53)
Disposal / write-off	-	(198.46)	-	(1,805.85)	(357.61)	(7.91)	(659.84)	(123.59)	(6.72)	(387.29)	-	(150.18)	(561.93)	(2,006.64)	(6,266.02)
Cost as at Dec 31, 16	13,984.01	33,150.29	29,542.01	327,162.84	37,444.95	856.30	182,653.14	7,140.88	7,318.38	6,817.92	42.85	3,409.62	11,438.62	6,593.24	667,555.05
Accumulated depreciation / Amortization															
as at Jan 1, 16	-	(19,866.60)	(11,021.96)	(197,041.47)	(24,678.89)	(747.55)	(86,767.03)	(6,008.55)	(4,802.87)	(5,398.52)	(42.85)	(2,470.87)	(8,062.11)	(2,965.69)	(3,694,749.6)
Depreciation/Amortization for the year	-	(1,225.70)	(472.97)	(11,691.85)	(3,343.03)	(31.38)	(6,091.85)	(252.53)	(145.63)	(307.26)	-	(226.80)	(799.53)	(1,827.82)	(26,414.35)
Exchange rate differences from currency translation	-	0.80	-	174.94	-	-	-	-	-	-	-	-	0.04	-	175.78
Reclassification	-	11.56	-	(11.56)	-	-	-	-	-	0.26	-	(0.26)	0.83	-	0.83
Disposal / write-off	-	182.18	-	1,776.33	357.61	7.10	549.58	119.51	1.25	387.24	-	147.86	553.79	2,006.64	6,089.09
Accumulated depreciation / Amortization as at Dec 31, 16	-	(20,897.76)	(11,494.93)	(206,793.61)	(27,664.31)	(771.83)	(92,309.30)	(6,141.57)	(4,945.25)	(5,318.28)	(42.85)	(2,550.07)	(8,306.98)	(2,786.87)	(390,023.61)
Accumulated impairment															
as at Jan 1, 16	-	(1.18)	-	(1,034.02)	-	-	-	-	-	-	-	-	-	-	(1,035.20)
as at Dec 31, 16	-	(1.18)	-	(1,034.02)	-	-	-	-	-	-	-	-	-	-	(1,035.20)
Net book value															
as at Dec 31, 15	9,777.99	11,314.55	18,345.18	124,831.07	12,043.60	108.88	85,182.29	997.50	1,681.14	1,424.59	-	543.20	3,232.30	3,769.15	273,251.44
as at Dec 31, 16	13,984.01	12,251.35	18,047.08	119,335.21	9,780.64	84.47	90,343.84	999.31	2,373.13	1,499.64	-	859.55	3,131.64	3,806.37	276,496.24

Unit : Million Baht

Separate financial statements

	Land	Structures	Reservoirs and dams	Power plants	Equipment for power plants	Control system	Transmission system	Communication system	Coal handling system	Machinery	Large-sized spare parts for mine equipment	Vehicles	Others	Deferred charges of major inspection fee	Total
Cost as at Jan 1, 17	12,582.92	32,442.04	29,542.01	303,946.24	37,444.95	856.30	182,653.14	7,140.88	7,318.38	6,622.90	42.85	3,388.78	10,814.39	6,593.24	641,389.02
Increase during the year	1,171.10	93.38	-	749.89	802.16	-	388.41	34.33	-	452.91	-	609.31	861.22	-	5,162.71
Transferred from work under construction	-	2,358.69	61.66	4,573.98	1,021.93	36.53	11,842.95	201.59	67.22	-	-	-	0.93	1,573.17	21,738.65
Reclassification	-	(10.95)	-	(1.66)	-	2.24	(0.15)	-	-	-	-	-	(28.00)	-	(38.52)
Disposal / write-off	-	(131.57)	-	(18.45)	-	(11.45)	(594.23)	(136.42)	-	(92.07)	-	(109.93)	(410.67)	(1,121.56)	(2,626.35)
Cost as at Dec 31, 17	13,754.02	34,751.59	29,603.67	309,250.00	39,269.04	883.62	194,290.12	7,240.38	7,385.60	6,983.74	42.85	3,888.16	11,237.87	7,044.85	665,625.51
Accumulated depreciation / Amortization as at Jan 1, 17	-	(20,697.58)	(11,494.93)	(195,482.15)	(27,664.31)	(771.83)	(92,309.30)	(6,141.57)	(4,945.25)	(5,247.61)	(42.85)	(2,529.82)	(7,823.55)	(2,786.87)	(377,937.62)
Depreciation/Amortization for the year	-	(1,271.72)	(465.67)	(10,871.15)	(2,908.76)	(52.07)	(6,202.27)	(248.56)	(159.25)	(314.68)	-	(338.42)	(670.99)	(1,601.06)	(25,104.60)
Reclassification	-	12.31	-	(0.04)	-	(2.24)	0.15	-	-	-	-	-	28.17	-	38.35
Disposal / write-off	-	116.30	-	18.06	-	10.18	540.52	136.22	-	92.07	-	109.93	406.38	1,121.56	2,551.22
Accumulated depreciation / Amortization as at Dec 31, 17	-	(21,840.69)	(11,960.60)	(206,335.28)	(30,573.07)	(815.96)	(97,970.90)	(6,253.91)	(5,104.50)	(5,470.22)	(42.85)	(2,758.31)	(8,059.99)	(3,266.37)	(400,452.65)
Accumulated impairment as at Jan 1, 17	-	-	-	(15.33)	-	-	-	-	-	-	-	-	-	-	(15.33)
as at Dec 31, 17	-	-	-	(15.33)	-	-	-	-	-	-	-	-	-	-	(15.33)
Net book value as at Dec 31, 16	12,582.92	11,744.46	18,047.08	108,448.76	9,780.64	84.47	90,343.84	999.31	2,373.13	1,375.29	-	858.96	2,990.84	3,806.37	263,436.07
as at Dec 31, 17	13,754.02	12,910.90	17,643.07	102,899.39	8,695.97	67.66	96,319.22	986.47	2,281.10	1,513.52	-	1,129.85	3,177.88	3,778.48	265,157.53

EGAT's property, plant and equipment has included other asset financial lease agreements (other than power plants), which the ownership of such assets will not be transferred to EGAT at the end of the lease periods. As at Dec 31, 2017 and 2016 the cost value of these assets was Baht 996.27 million and Baht 467.36 million, accumulated depreciation was Baht 247.67 million and Baht 70.82 million, and net book value was Baht 748.60 million and Baht 396.54 million respectively.

Unit : Million Baht

	Separate financial statements														
	Land	Structures	Reservoirs and dams	Power plants	Equipment for power plants	Control system	Transmission system	Communication system	Coal handling system	Machinery	Large-sized spare parts for mine equipment	Vehicles	Others	Deferred charges of major inspection fee	Total
Cost as at Jan 1, 16	8,373.57	30,476.98	29,367.14	299,703.90	36,722.49	856.43	171,949.32	7,006.05	6,484.01	6,628.09	42.85	2,989.79	10,671.36	6,734.84	618,006.82
Increase during the year	4,209.35	57.07	-	-	1,047.86	-	173.73	10.05	-	382.39	-	545.44	699.36	-	7,125.25
Transferred from work under construction	-	2,118.45	174.87	6,033.40	32.21	7.78	11,189.93	248.37	841.09	-	-	-	-	1,865.04	22,511.14
Reclassification	-	(12.00)	-	12.00	-	-	-	-	-	(0.29)	-	0.29	(7.53)	-	(7.53)
Disposal / write-off	-	(198.46)	-	(1,803.06)	(357.61)	(7.91)	(659.84)	(123.59)	(6.72)	(387.29)	-	(146.74)	(548.80)	(2,006.64)	(6,246.66)
Cost as at Dec 31, 16	12,582.92	32,442.04	29,542.01	303,946.24	37,444.95	856.30	182,653.14	7,140.88	7,318.38	6,622.90	42.85	3,388.78	10,814.39	6,593.24	641,389.02
Accumulated depreciation / Amortization as at Jan 1, 16	-	(19,701.59)	(11,021.96)	(186,441.28)	(24,678.89)	(747.55)	(86,767.03)	(6,008.55)	(4,802.87)	(5,347.44)	(42.85)	(2,447.71)	(7,651.82)	(2,965.69)	(358,625.23)
Depreciation/Amortization for the year	-	(1,189.73)	(472.97)	(10,802.85)	(3,343.03)	(31.38)	(6,091.85)	(252.53)	(143.63)	(287.67)	-	(226.37)	(713.84)	(1,827.82)	(25,383.67)
Reclassification	-	11.56	-	(11.56)	-	-	-	-	-	0.26	-	(0.26)	0.83	-	0.83
Disposal / write-off	-	182.18	-	1,773.54	357.61	7.10	549.58	119.51	1.25	387.24	-	144.52	541.28	2,006.64	6,070.45
Accumulated depreciation / Amortization as at Dec 31, 16	-	(20,697.58)	(11,494.93)	(195,482.15)	(27,664.31)	(771.83)	(92,309.30)	(6,141.57)	(4,945.25)	(5,247.61)	(42.85)	(2,529.82)	(7,823.55)	(2,786.87)	(377,937.62)
Accumulated impairment as at Jan 1, 16	-	-	-	(15.33)	-	-	-	-	-	-	-	-	-	-	(15.33)
as at Dec 31, 16	-	-	-	(15.33)	-	-	-	-	-	-	-	-	-	-	(15.33)
Net book value as at Dec 31, 15	8,373.57	10,775.39	18,345.18	113,247.29	12,043.60	108.88	85,182.29	997.50	1,681.14	1,280.65	-	542.08	3,019.54	3,769.15	259,366.26
as at Dec 31, 16	12,582.92	11,744.46	18,047.08	108,448.76	9,780.64	84.47	90,343.84	999.31	2,373.13	1,375.29	-	858.96	2,990.84	3,806.37	263,436.07

EGAT's property, plant and equipment has included other asset financial lease agreements (other than power plants), which the ownership of such assets will not be transferred to EGAT at the end of the lease periods. As at Dec 31, 2016 and 2015 the cost value of these assets was Baht 467.36 million and Baht 52.99 million, accumulated depreciation was Baht 70.82 million and Baht 2.54 million, and net book value was Baht 396.54 million and Baht 50.45 million respectively.

As at December 31, 2017 and 2016, EGAT had buildings and equipment fully accumulated depreciation, while being in use. The cost value of these assets before deduction of accumulated depreciation was Baht 173,693.20 million and Baht 144,436.96 million respectively, which comprise

	Unit : Million Baht	
	Separate financial statements	
	Dec 31, 17	Dec 31, 16
Structures	12,418.22	10,664.18
Reservoirs and dams	57.76	17.50
Power Plants	99,300.03	78,505.40
Equipment for power plants	18,774.58	15,549.15
Control system	620.83	460.46
Transmission system	22,911.76	19,958.67
Communication system	4,922.07	4,815.37
Coal handling system	3,816.07	3,794.71
Machinery	3,706.60	3,665.18
Large-sized spare parts for mine equipment	42.85	42.85
Vehicles	1,820.06	1,812.36
Others	5,302.37	5,151.13
Total	173,693.20	144,436.96

6.12 Work under construction comprise

Unit : Million Baht

	Consolidated financial statements															
	Structures	Reservoirs and dams	Power plants	Equipment for power plants	Control system	Transmission system and exploration	Communication system	Coal handling system	Machinery	Others	Major inspection fee	Computer Software	Research and development	Materials for work under construction of transmission system	Materials in transportation	Total
Balance as at Jan 1, 17	3,212.19	111.85	23,947.98	17.34	32.78	22,213.07	386.31	32.52	-	4.20	420.76	22.51	21.89	3,744.64	5,397.48	59,565.52
Increase during the year	2,911.43	46.72	22,699.12	5,091.63	3.78	19,369.87	434.21	109.69	0.14	13.39	1,616.91	36.24	13.91	5,073.95	13,786.75	71,207.74
	6,123.62	158.57	46,647.10	5,108.97	36.56	41,582.94	820.52	142.21	0.14	17.59	2,037.67	58.75	35.80	8,818.59	19,184.23	130,773.26
Reclassification	0.24	-	(1,026.91)	1,026.67	-	-	-	-	-	-	-	-	-	-	-	-
Transferred to property, plant, equipment and others	(2,365.53)	(61.66)	(4,794.57)	(1,028.35)	(36.53)	(11,837.63)	(201.59)	(67.22)	-	(8.92)	(1,573.17)	(6.61)	-	(5.32)	-	(21,987.10)
Transferred to work under construction of power plants and transmission system	-	-	-	-	-	-	-	-	-	-	-	-	-	(3,357.46)	(16,221.64)	(19,579.10)
Transferred to materials for work under construction of transmission system	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,244.11)	(1,244.11)
Exchange rate differences	(0.01)	-	(5.16)	(75.56)	-	-	-	-	-	-	-	-	-	-	-	(80.73)
Balance as at Dec 31, 17	3,758.32	96.91	40,820.46	5,031.73	0.03	29,745.31	618.93	74.99	0.14	8.67	464.50	52.14	35.80	5,455.81	1,718.48	87,882.22

Unit : Million Baht

	Consolidated financial statements														
	Structures	Reservoirs and dams	Power plants	Equipment for power plants	Control system	Transmission system and exploration	Communication system	Coal handling system	Others	Major inspection fee	Computer Software	Research and development	Materials for work under construction of transmission system	Materials in transportation	Total
Balance as at Jan 1, 16	2,538.94	283.19	6,373.39	-	27.73	19,289.03	438.90	740.18	2.92	452.96	15.90	3.22	1,911.17	3,596.60	35,674.13
Increase during the year	2,792.79	3.53	23,772.86	40.01	11.43	14,105.57	195.78	133.43	1.83	1,832.84	24.20	18.67	4,515.24	20,679.36	68,127.54
	5,331.73	286.72	30,146.25	40.01	39.16	33,394.60	634.68	873.61	4.75	2,285.80	40.10	21.89	6,426.41	24,275.96	103,801.67
Transferred to property, plant, equipment and others	(2,119.44)	(174.87)	(6,181.68)	(22.40)	(6.38)	(11,181.53)	(248.37)	(841.09)	(0.55)	(1,865.04)	(17.59)	-	(9.80)	-	(22,668.74)
Transferred to work under construction of power plants and transmission system	-	-	-	-	-	-	-	-	-	-	-	-	(2,671.97)	(16,969.24)	(19,641.21)
Transferred to materials for work under construction of transmission system	-	-	-	-	-	-	-	-	-	-	-	-	-	(1,909.24)	(1,909.24)
Exchange rate differences	(0.10)	-	(16.59)	(0.27)	-	-	-	-	-	-	-	-	-	-	(16.96)
Balance as at Dec 31, 16	3,212.19	111.85	23,947.98	17.34	32.78	22,213.07	386.31	32.52	4.20	420.76	22.51	21.89	3,744.64	5,397.48	59,565.52

Unit : Million Baht

Structures	Reservoirs and dams	Power plants	Equipment for power plants	Control system	Transmission system and exploration	Communication system	Coal handling system	Others	Major inspection fee	Computer Software	Research and development	Materials for work under construction of transmission system	Materials in transportation	Total
Balance as at Jan 1, 17	111.85	22,854.37	-	32.78	22,213.07	386.31	32.52	0.93	420.76	22.51	21.89	3,744.64	5,397.48	58,444.79
Increase during the year	46.72	22,216.25	1,198.23	3.78	19,369.87	434.21	109.69	6.31	1,616.91	36.24	13.91	5,073.95	13,786.75	66,824.15
	158.57	45,070.62	1,198.23	36.56	41,582.94	820.52	142.21	7.24	2,037.67	58.75	35.80	8,818.59	19,184.23	125,268.94
Transferred to property, plant, equipment and others	(61.66)	(4,574.06)	(1,021.85)	(36.53)	(11,837.63)	(201.59)	(67.22)	(0.93)	(1,573.17)	(6.61)	-	(5.32)	-	(21,745.26)
Transferred to work under construction of power plants and transmission system	-	-	-	-	-	-	-	-	-	-	-	(3,357.46)	(16,221.64)	(19,579.10)
Transferred to materials for work under construction of transmission system	-	-	-	-	-	-	-	-	-	-	-	-	(1,244.11)	(1,244.11)
Balance as at Dec 31, 17	96.91	40,496.56	176.38	0.03	29,745.31	618.93	74.99	6.31	464.50	52.14	35.80	5,455.81	1,718.48	82,700.47

Unit : Million Baht

Structures	Reservoirs and dams	Power plants	Equipment for power plants	Control system	Transmission system and exploration	Communication system	Coal handling system	Others	Major inspection fee	Computer Software	Research and development	Materials for work under construction of transmission system	Materials in transportation	Total
Balance as at Jan 1, 16	283.19	6,373.39	-	27.73	19,289.03	438.90	740.18	-	452.96	15.90	3.22	1,911.17	3,596.60	35,671.21
Increase during the year	3.53	22,524.19	22.40	11.43	14,105.57	195.78	133.43	0.93	1,832.84	24.20	18.67	4,515.24	20,679.36	66,852.76
	286.72	28,897.58	22.40	39.16	33,394.60	634.68	873.61	0.93	2,285.80	40.10	21.89	6,426.41	24,275.96	102,523.97
Transferred to property, plant, equipment and others	(174.87)	(6,043.21)	(22.40)	(6.38)	(11,181.53)	(248.37)	(841.09)	-	(1,865.04)	(17.59)	-	(9.80)	-	(22,528.73)
Transferred to work under construction of power plants and transmission system	-	-	-	-	-	-	-	-	-	-	-	(2,671.97)	(16,969.24)	(19,641.21)
Transferred to materials for work under construction of transmission system	-	-	-	-	-	-	-	-	-	-	-	-	(1,909.24)	(1,909.24)
Balance as at Dec 31, 16	111.85	22,854.37	-	32.78	22,213.07	386.31	32.52	0.93	420.76	22.51	21.89	3,744.64	5,397.48	58,444.79

Borrowing costs in the amount of Baht 1,041.59 million were from loans for construction of power plants and transmission expansion, which were capitalized to cost of assets, included in the increasing during the year and presented in investing activities of the statements of cash flows.

EGAT had work under construction project as follows:

Project	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Expand Transmission System Project	36,001.60	26,338.62	36,001.60	26,338.62
Chana Combined Cycle Power Plant Project - Block 2	-	0.55	-	0.55
North Bangkok Combined Cycle Power Plant Project - Block 2	1.76	85.26	1.76	85.26
Mae Moh Thermal Power Plant Project (Replacement) - Units 4-7	34,369.10	22,562.76	34,369.10	22,562.76
South Bangkok Combined Cycle Power Plant Project (Replacement) - Phase 1	566.80	-	566.80	-
Bang Pakong Combined Cycle Power Plant Project (Replacement) - Units 1-2	2.29	-	2.29	-
Others	16,940.67	10,578.33	11,758.92	9,457.60
Total	87,882.22	59,565.52	82,700.47	58,444.79

As at December 31, 2017, Mae Moh Thermal Power Plant Project (Replacement) - Units 4-7 had 96.00 percentages of completion, South Bangkok Combined Cycle Power Plant Project (Replacement) - Phase 1 had 38.20 percentages of completion and Bang Pakong Combined Cycle Power Plant Project (Replacement) - Units 1-2 had a contract endorsement on November 8, 2017.

Three power plants were completed and transferred to asset comprised of Lam Ta Khong Wind Power Project - Phase 2 on December 13, 2017, North Bangkok Combined Cycle Power Plant Project - Block 2 on December 1, 2015, Chana Combined Cycle Power Plant Project - Block 2 on April 8, 2014 (Train 1) and May 9, 2014 (Train 2). However, the three projects have incomplete construction in the remaining part of the additional surrounding development in the power plants (Facilities) that will be transferred to asset after completion.

6.13 Goodwill comprise

	Unit : Million Baht	
	Consolidated financial statements	
	Dec 31, 17	Dec 31, 16
Balance at the beginning	672.70	674.84
Differences from exchange rate adjustment	(26.14)	(2.14)
	646.56	672.70
Less: Allowance for impairment	(416.22)	(375.37)
Balance at the end	230.34	297.33

6.14 Intangible assets comprise

	Unit : Million Baht				
	Consolidated financial statements				
	Land rights	Computer software rights and software licenses	Royalty on state property service	Project development rights	Total
Cost as at Jan 1, 17	30,003.99	1,897.64	474.77	6,303.60	38,680.00
Increase during the year	3,597.46	78.98	-	-	3,676.44
Transferred from work under construction	-	7.00	-	-	7.00
Exchange rate differences from currency translation	-	1.06	-	(145.97)	(144.91)
Reclassification	-	38.52	-	-	38.52
Disposal / write-off	-	(24.28)	-	-	(24.28)
Cost as at Dec 31, 17	33,601.45	1,998.92	474.77	6,157.63	42,232.77
Accumulated amortization as at Jan 1, 17	(3,841.58)	(1,589.82)	(273.56)	(2,413.25)	(8,118.21)
Amortization for the year	(0.86)	(149.93)	(6.34)	(291.16)	(448.29)
Exchange rate differences from currency translation	-	0.86	-	45.20	46.06
Reclassification	-	(38.35)	-	-	(38.35)
Disposal / write-off	-	24.25	-	-	24.25
Accumulated amortization as at Dec 31, 17	(3,842.44)	(1,752.99)	(279.90)	(2,659.21)	(8,534.54)
Net book value					
As at Dec 31, 16	26,162.41	307.82	201.21	3,890.35	30,561.79
As at Dec 31, 17	29,759.01	245.93	194.87	3,498.42	33,698.23

Unit : Million Baht

Consolidated financial statements

	Land rights	Computer software rights and software licenses	Royalty on state property service	Project development rights	Total
Cost as at Jan 1, 16	28,022.39	1,827.88	474.77	6,186.39	36,511.43
Increase during the year	1,981.60	98.93	-	212.81	2,293.34
Transferred from work under construction	-	17.59	-	-	17.59
Exchange rate differences from currency translation	-	(0.82)	-	(95.60)	(96.42)
Reclassification	-	7.53	-	-	7.53
Disposal / write-off	-	(53.47)	-	-	(53.47)
Cost as at Dec 31, 16	30,003.99	1,897.64	474.77	6,303.60	38,680.00
Accumulated amortization as at Jan 1, 16	(3,840.71)	(1,387.68)	(267.22)	(2,157.20)	(7,652.81)
Amortization for the year	(0.87)	(255.24)	(6.34)	(292.35)	(554.80)
Exchange rate differences from currency translation	-	0.71	-	36.30	37.01
Reclassification	-	(0.83)	-	-	(0.83)
Disposal / write-off	-	53.22	-	-	53.22
Accumulated amortization as at Dec 31, 16	(3,841.58)	(1,589.82)	(273.56)	(2,413.25)	(8,118.21)
Net book value					
As at Dec 31, 15	24,181.68	440.20	207.55	4,029.19	28,858.62
As at Dec 31, 16	26,162.41	307.82	201.21	3,890.35	30,561.79

Unit : Million Baht

	Separate financial statements			
	Land rights	Computer software rights and software licenses	Royalty on state property service	Total
Cost as at Jan 1, 17	30,003.99	1,766.23	474.77	32,244.99
Increase during the year	3,597.46	63.48	-	3,660.94
Transferred from work under construction	-	6.61	-	6.61
Reclassification	-	38.52	-	38.52
Disposal / write-off	-	(24.28)	-	(24.28)
Cost as at Dec 31, 17	33,601.45	1,850.56	474.77	35,926.78
Accumulated amortization as at Jan 1, 17	(3,841.58)	(1,504.34)	(273.56)	(5,619.48)
Amortization for the year	(0.86)	(137.52)	(6.34)	(144.72)
Reclassification	-	(38.35)	-	(38.35)
Disposal / write-off	-	24.25	-	24.25
Accumulated amortization as at Dec 31, 17	(3,842.44)	(1,655.96)	(279.90)	(5,778.30)
Net book value				
As at Dec 31, 16	26,162.41	261.89	201.21	26,625.51
As at Dec 31, 17	29,759.01	194.60	194.87	30,148.48

Unit : Million Baht

	Separate financial statements			Total
	Land rights	Computer software rights and software licenses	Royalty on state property service	
Cost as at Jan 1, 16	28,022.39	1,700.03	474.77	30,197.19
Increase during the year	1,981.60	94.55	-	2,076.15
Transferred from work under construction	-	17.59	-	17.59
Reclassification	-	7.53	-	7.53
Disposal / write-off	-	(53.47)	-	(53.47)
Cost as at Dec 31, 16	30,003.99	1,766.23	474.77	32,244.99
Accumulated amortization as at Jan 1, 16	(3,840.71)	(1,319.05)	(267.22)	(5,426.98)
Amortization for the year	(0.87)	(237.68)	(6.34)	(244.89)
Reclassification	-	(0.83)	-	(0.83)
Disposal / write-off	-	53.22	-	53.22
Accumulated amortization as at Dec 31, 16	(3,841.58)	(1,504.34)	(273.56)	(5,619.48)
Net book value				
As at Dec 31, 15	24,181.68	380.98	207.55	24,770.21
As at Dec 31, 16	26,162.41	261.89	201.21	26,625.51

6.15 Land awaiting development comprise

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Cost at the beginning	2,548.72	2,548.72	2,239.51	2,239.51
Less: Allowance for impairment	(423.43)	(423.43)	(423.43)	(423.43)
Net book value	2,125.29	2,125.29	1,816.08	1,816.08

As at December 31, 2017, EGAT has had the land awaiting development of Baht 1,816.08 million appropriated for construction of new power plants to support the additional demand of electric energy. Due to the change in power development planning, the construction of new power plants has been postponed. Details of the land awaiting development were comprised of:

- Land at Ao-Phai, Chonburi Province of 122 Rai is valued at Baht 9.05 million.
- Land at Tap Sakae, Prachuap Khiri Khan Province of 4,029 Rai is valued at Baht 2,223.43 million with accumulated impairment in the amount of Baht 423.43 million. As a result, the net book value of land was Baht 1,800 million.
- Land surrounding Carrier Gas Station on Phet Kasem Road at Ratchaburi Province of 37 Rai is valued at Baht 3.75 million.
- Land surrounding Bannasan substation at Nampu, Bannasan, Suratthani Province is valued at Baht 3.28 million.

6.16 Income tax expense and deferred taxes

6.16.1 Income tax expenses

		Unit : Million Baht	
		Consolidated financial statements	
		2017	2016
Income tax expenses :			
Current income taxes		1,672.77	987.89
Income taxes of previous year			
which is over recorded		(16.74)	(38.26)
Total		1,656.03	949.63
Deferred taxes :			
Change in temporary differences		(157.72)	(69.73)
Total		(157.72)	(69.73)
Grand total		1,498.31	879.90

6.16.2 Deferred tax assets and deferred tax liabilities

Unit : Million Baht

	Consolidated financial statements			
	Assets		Liabilities	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Deferred tax assets (liabilities)	5,707.90	6,292.91	(7,274.52)	(8,043.48)
Set off of taxes	(5,574.05)	(6,239.45)	5,574.05	6,239.45
Net deferred tax assets (liabilities)	133.85	53.46	(1,700.47)	(1,804.03)

6.16.3 Movements in deferred tax assets and deferred tax liabilities

Unit : Million Baht

	Consolidated financial statements				
	As at Jan 1, 17	Profit or loss	Other comprehensive income	Exchange rate differences	As at Dec 31, 17
Deferred tax assets :					
Allowance for obsolescence of spare parts and supplies and allowance for declining in value of spare parts and supplies	272.25	0.86	-	(0.64)	272.47
Property, plant and equipment	5,452.34	(626.55)	-	(11.37)	4,814.42
Provisions for employee benefits	31.87	3.57	0.13	-	35.57
Finance lease liabilities	0.12	-	-	-	0.12
Loss carry forward	481.09	5.28	-	(6.96)	479.41
Others	55.24	49.83	-	0.84	105.91
Total	6,292.91	(567.01)	0.13	(18.13)	5,707.90
Deferred tax liabilities :					
Property, plant and equipment	(2,893.12)	95.24	-	46.15	(2,751.73)
Finance lease receivable-related party	(4,999.05)	754.01	-	-	(4,245.04)
Others	(151.31)	(124.52)	-	(1.92)	(277.75)
Total	(8,043.48)	724.73	-	44.23	(7,274.52)

Unit : Million Baht

Consolidated financial statements

	As at Jan 1, 16	Profit or loss	Other comprehensive income	Exchange rate differences	As at Dec 31, 16
Deferred tax assets :					
Allowance for obsolescence of spare parts and supplies and allowance for declining in value of spare parts and supplies	303.27	(30.39)	-	(0.63)	272.25
Property, plant and equipment	6,077.32	(614.70)	-	(10.28)	5,452.34
Provisions for employee benefits	25.42	1.82	4.63	-	31.87
Finance lease liabilities	0.09	0.03	-	-	0.12
Loss carry forward	607.66	(121.33)	-	(5.24)	481.09
Others	37.70	18.42	-	(0.88)	55.24
Total	7,051.46	(746.15)	4.63	(17.03)	6,292.91
Deferred tax liabilities :					
Property, plant and equipment	(3,040.35)	101.83	-	45.40	(2,893.12)
Finance lease receivable-related party	(5,638.16)	639.11	-	-	(4,999.05)
Others	(223.88)	70.31	-	2.26	(151.31)
Total	(8,902.39)	811.25	-	47.66	(8,043.48)

6.17 Other non-current assets comprise

Unit : Million Baht

	Consolidated financial statements				
	Overburden removal costs	Minerals resource exploration and preliminary development costs	Resettlement costs	Mineral patent costs	Total
- Deferred charges of the lignite mine					
Deferred charges as at Jan 1, 17	112,300.64	645.67	1,988.44	281.14	115,215.89
Increase during the year	5,840.46	-	-	74.72	5,915.18
Deferred charges as at Dec 31, 17	118,141.10	645.67	1,988.44	355.86	121,131.07
Accumulated amortization as at Jan 1, 17	(112,300.64)	(344.71)	(1,840.58)	(91.47)	(114,577.40)
Increase during the year	(5,840.46)	(9.88)	(50.30)	(13.75)	(5,914.39)
Accumulated amortization as at Dec 31, 17	(118,141.10)	(354.59)	(1,890.88)	(105.22)	(120,491.79)
Net book value					
As at Dec 31, 16	-	300.96	147.86	189.67	638.49
As at Dec 31, 17	-	291.08	97.56	250.64	639.28
- Others					
As at Dec 31, 16					3,611.76
As at Dec 31, 17					4,440.04
Total other non-current assets					
As at Dec 31, 16					4,250.25
As at Dec 31, 17					5,079.32

Unit : Million Baht

	Consolidated financial statements				
	Overburden removal costs	Minerals resource exploration and preliminary development costs	Resettlement costs	Mineral patent costs	Total
- Deferred charges of the lignite mine					
Deferred charges as at Jan 1, 16	106,592.33	645.67	1,988.44	281.14	109,507.58
Increase during the year	5,708.31	-	-	-	5,708.31
Deferred charges as at Dec 31, 16	112,300.64	645.67	1,988.44	281.14	115,215.89
Accumulated amortization as at Jan 1, 16	(106,592.33)	(334.53)	(1,788.69)	(80.23)	(108,795.78)
Increase during the year	(5,708.31)	(10.18)	(51.89)	(11.24)	(5,781.62)
Accumulated amortization as at Dec 31, 16	(112,300.64)	(344.71)	(1,840.58)	(91.47)	(114,577.40)
Net book value					
As at Dec 31, 15	-	311.14	199.75	200.91	711.80
As at Dec 31, 16	-	300.96	147.86	189.67	638.49
- Others					
As at Dec 31, 15					2,735.74
As at Dec 31, 16					3,611.76
Total other non-current assets					
As at Dec 31, 15					3,447.54
As at Dec 31, 16					4,250.25

Unit : Million Baht

	Separate financial statements				
	Overburden removal costs	Minerals resource exploration and preliminary development costs	Resettlement costs	Mineral patent costs	Total
- Deferred charges of the lignite mine					
Deferred charges as at Jan 1, 17	112,300.64	645.67	1,988.44	281.14	115,215.89
Increase during the year	5,840.46	-	-	74.72	5,915.18
Deferred charges as at Dec 31, 17	118,141.10	645.67	1,988.44	355.86	121,131.07
Accumulated amortization as at Jan 1, 17	(112,300.64)	(344.71)	(1,840.58)	(91.47)	(114,577.40)
Increase during the year	(5,840.46)	(9.88)	(50.30)	(13.75)	(5,914.39)
Accumulated amortization as at Dec 31, 17	(118,141.10)	(354.59)	(1,890.88)	(105.22)	(120,491.79)
Net book value					
As at Dec 31, 16	-	300.96	147.86	189.67	638.49
As at Dec 31, 17	-	291.08	97.56	250.64	639.28
- Others					
As at Dec 31, 16					2,850.80
As at Dec 31, 17					3,765.50
Total other non-current assets					
As at Dec 31, 16					3,489.29
As at Dec 31, 17					4,404.78

Unit : Million Baht

	Separate financial statements				
	Overburden removal costs	Minerals resource exploration and preliminary development costs	Resettlement costs	Mineral patent costs	Total
- Deferred charges of the lignite mine					
Deferred charges as at Jan 1, 16	106,592.33	645.67	1,988.44	281.14	109,507.58
Increase during the year	5,708.31	-	-	-	5,708.31
Deferred charges as at Dec 31, 16	112,300.64	645.67	1,988.44	281.14	115,215.89
Accumulated amortization as at Jan 1, 16	(106,592.33)	(334.53)	(1,788.69)	(80.23)	(108,795.78)
Increase during the year	(5,708.31)	(10.18)	(51.89)	(11.24)	(5,781.62)
Accumulated amortization as at Dec 31, 16	(112,300.64)	(344.71)	(1,840.58)	(91.47)	(114,577.40)
Net book value					
As at Dec 31, 15	-	311.14	199.75	200.91	711.80
As at Dec 31, 16	-	300.96	147.86	189.67	638.49
- Others					
As at Dec 31, 15					1,726.68
As at Dec 31, 16					2,850.80
Total other non-current assets					
As at Dec 31, 15					2,438.48
As at Dec 31, 16					3,489.29

6.18 Trade accounts payable-others comprise :

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Trade payables-electric energy purchased	33,028.13	31,826.13	33,028.13	31,826.13
Trade payables-fuel for electricity generating	9,775.85	6,641.75	9,775.85	6,641.75
Others	7,449.34	7,496.36	2,199.73	1,924.64
Total	50,253.32	45,964.24	45,003.71	40,392.52

6.19 Accrued remittance to the Ministry of Finance

As at January 1, 2017, EGAT has a brought forward of accrued remittance to the Ministry of Finance in the amount of Baht 8,100.39 million which increased in the amount of Baht 952.47 million. On April 20, 2017, EGAT remitted to the Ministry of Finance in accordance with the notice of EGAT no. 921101/37817 in the amount of Baht 9,052.86 million.

In the year 2017, the Ministry of Finance prescribed that EGAT has to calculate the remittance to the Ministry of Finance in 45% of profit before provision of bonus expense, although, the amount of remittance may vary depending on the revision from the Ministry of Finance. As at December 31, 2017, EGAT recorded the provision for the remittance to the Ministry of Finance for the performance of year 2017 in the amount of Baht 25,274.76 million. However, in October 2017, EGAT remitted to the Ministry of Finance for the performance of six months ended June 30, 2017 in the amount of Baht 13,384.05 million. Therefore, EGAT has accrued the remittance to the Ministry of Finance in the amount of Baht 11,890.71 million as at December 31, 2017.

6.20 Long-term loans comprise

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Balance at the beginning	74,877.24	74,744.68	54,943.11	56,192.47
Increase during the year	20,247.61	6,989.16	18,000.00	4,400.00
Repayments	(3,460.53)	(6,847.01)	(3,420.52)	(5,617.01)
Deferred financing fees	7.22	(13.74)	-	-
(Gain) loss on exchange rates	168.81	112.68	16.91	(32.35)
Exchange rate differences from currency translation	(1,385.58)	(108.53)	-	-
	90,454.77	74,877.24	69,539.50	54,943.11
Less : Current portion of long-term loans	(10,210.29)	(3,148.79)	(7,552.01)	(3,118.84)
Balance at the end	80,244.48	71,728.45	61,987.49	51,824.27

Long-term-loans comprise

Consolidated financial statements				
	Dec 31, 17		Dec 31, 16	
	Foreign	Million	Foreign	Million
	currencies	Baht	currencies	Baht
	Unit : million		Unit : million	
Local sources secured by the Ministry of Finance:				
EGAT bonds				
Fixed rate due within 2017 - 2020	-	1,000.00	-	1,000.00
		<u>1,000.00</u>		<u>1,000.00</u>
Local sources unsecured by the Ministry of Finance:				
Ministry of Finance loans				
Fixed rate due within 2017 - 2027	-	62.60	-	68.05
Krungthai Bank PCL				
Fixed rate due within 2017 - 2027	-	11,700.00	-	-
EGAT bonds				
Fixed rate due within 2017 - 2037	-	56,300.00	-	53,300.00
Debenture				
Fixed rate due within 2017 - 2022	-	1,998.69	-	1,998.38
Other financial institutions				
Floating rate due in 2017	-	-	-	39.92
		<u>70,061.29</u>		<u>55,406.35</u>
Foreign sources secured by the Ministry of Finance:				
Loans				
Euro:				
Fixed rate due within 2017 - 2037	12.11	476.90	15.08	575.06
		<u>476.90</u>		<u>575.06</u>
Foreign sources unsecured by the Ministry of Finance:				
Loans				
AUD Dollars:				
Floating rate due within 2018 - 2023	188.12	4,775.69	100.00	2,567.01
Debentures				
Japanese Yen:				
Fixed rate due in 2026	15,000.00	4,345.05	15,000.00	4,596.05
Dollars:				
Fixed rate due in 2019	300.00	9,795.84	300.00	10,732.77
		<u>18,916.58</u>		<u>17,895.83</u>
Total		<u>90,454.77</u>		<u>74,877.24</u>
Less : Current portion of long-term loans		(10,210.29)		(3,148.79)
Balance		<u>80,244.48</u>		<u>71,728.45</u>

Separate financial statements				
	Dec 31, 17		Dec 31, 16	
	Foreign	Million	Foreign	Million
	currencies	Baht	currencies	Baht
	Unit : million		Unit : million	
Local sources secured by the Ministry of Finance:				
EGAT bonds				
Fixed rate due within 2017 - 2020	-	1,000.00	-	1,000.00
		1,000.00		1,000.00
Local sources unsecured by the Ministry of Finance:				
Ministry of Finance loans				
Fixed rate due within 2017 - 2027	-	62.60	-	68.05
Krungthai Bank PCL				
Fixed rate due within 2017 - 2027	-	11,700.00	-	-
EGAT bonds				
Fixed rate due within 2017 - 2037	-	56,300.00	-	53,300.00
		68,062.60		53,368.05
Foreign sources secured by the Ministry of Finance:				
Loans				
Euro:				
Fixed rate due within 2017 - 2037	12.11	476.90	15.08	575.06
		476.90		575.06
Total		69,539.50		54,943.11
Less : Current portion of long-term loans		(7,552.01)		(3,118.84)
Balance		61,987.49		51,824.27

Long-term loans can be classified by interest rate as follows:

	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
	Unit : Million Baht			
Floating rate	4,775.70	2,606.93	-	-
Fixed rate	85,679.07	72,270.31	69,539.50	54,943.11
Total	90,454.77	74,877.24	69,539.50	54,943.11

Interest rate of long-term loans as at December 31, 2017 are as follows:

	<u>Consolidated financial statements</u>	<u>Separate financial statements</u>
EGAT bonds - local sources		
- Guaranteed by the Ministry of Finance	7.380%	7.380%
- The Ministry of Finance does not guarantee.	1.940% to 6.235%	1.940% to 6.235%
Loans - local sources		
- The Ministry of Finance does not guarantee.	2.499% to 4.350%	2.499% to 3.399%
Loans - foreign sources		
- Guaranteed by the Ministry of Finance	0.750% to 8.000%	0.750% to 8.000%
Debentures		
- The Ministry of Finance does not guarantee.	2.720% to 3.500%	-

6.21 Non-current provisions for employee benefits

EGAT's employees will receive retirement benefits under Thai labour law when employees have completed their terms in accordance with agreements between employees and EGAT. Employee benefits liability is a defined benefits obligation calculated by using the projected unit credit method on an actuarial basis. This basis determines the present value of future payments by discounting the future cash flows using government bond yield with a currency and term similar to the estimated term of the benefit obligations. Any expenses related to benefits are recognized in the statements of income in order to attribute benefits to periods of service.

Movement in the present value of non-current provisions for employee benefits are as follows:

	Unit : Million Baht			
	<u>Consolidated financial statements</u>		<u>Separate financial statements</u>	
	<u>Dec 31, 17</u>	<u>Dec 31, 16</u>	<u>Dec 31, 17</u>	<u>Dec 31, 16</u>
Balance at the beginning	15,593.22	15,396.26	15,428.83	15,269.98
Current service costs	770.88	776.69	750.51	755.98
Interest costs	506.22	499.87	501.44	494.89
Actuarial loss from provisions for				
post-employment benefit	0.66	23.18	-	-
Past service costs	942.38	-	941.63	-
Foreign exchange adjustment	0.01	(0.08)	-	-
Actual payment	(1,151.92)	(1,102.70)	(1,144.30)	(1,092.02)
Balance at the end	<u>16,661.45</u>	<u>15,593.22</u>	<u>16,478.11</u>	<u>15,428.83</u>

Expenses recognized in the statements of income and as parts of cost of assets/liabilities were shown in the statements of financial position are as follows:

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Expenses realized in the statements of income				
Cost of sales	1,321.58	713.52	1,321.58	713.52
Selling expenses	15.54	8.43	15.54	8.43
Administrative expenses	704.77	428.53	678.87	402.84
Total	2,041.89	1,150.48	2,015.99	1,124.79
Cost of assets/liabilities realized in the statements of financial position				
Materials and supplies	46.42	43.62	46.42	43.62
Work under construction	127.01	80.44	127.01	80.44
Provision liabilities for mine reclamation	4.16	2.02	4.16	2.02
Total	177.59	126.08	177.59	126.08
Grand Total	2,219.48	1,276.56	2,193.58	1,250.87

Actuarial loss from provisions for post-employment benefit recognized in the statements of comprehensive income are as follows:

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Loss from experience adjustments	0.42	12.06	-	-
Loss from changes in financial assumptions	0.15	6.03	-	-
Loss from changes in demographic assumptions	0.09	5.09	-	-
Total	0.66	23.18	-	-

Principal actuarial assumptions of EGAT are as follows:

	<u>Annual percentage (%)</u>
Discount rate	3.3
Inflation rate	
Consumer price index	3.0
Post-employment medical care	10
Resignation rate	0.0 - 0.7
Salary increasing rate	6 - 11
Mortality rate, by table	TMO08
	(Thai mortality tables 2008)

Office of Insurance Commission (OIC) prescribed the Thai mortality tables 2017 which became effective since September 1, 2017. This caused EGAT reconsidered employee benefit obligations assumptions which is in the process of hiring a consultant (actuarial specialist) which is expected that to be completed after the financial statements of 2017. However, the management of EGAT has assessed and concluded that the mortality rate adjustment will not have material impact on the financial statements.

Sensitivity analysis of principal actuarial assumptions used in determining the present value of benefit obligations of EGAT as at December 31, 2017 are as follows:

	Unit : Million Baht	
	Increase (decrease) in present value of the obligation	
	Increase 1%	Decrease 1%
Discount rate	(1,755.22)	2,215.64
Salary increasing rate	983.09	(864.42)
Medical inflation rate	1,024.14	(780.57)

Weighted average duration of the benefit obligations of EGAT's group is 18 years.

Due to the differences in operational environment of EGAT's group, including limitations on the estimation of assumptions and sensitivity analysis based on actuarial principles, the principal assumptions and their sensitivity analysis could not be reasonably applied. Thus only EGAT has been presented.

6.22 Finance lease liabilities-power plants

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Related parties				
Finance lease liabilities	344,219.39	394,114.49	380,053.15	437,644.16
Less : Deferred interest expenses	(184,419.44)	(215,022.68)	(199,028.00)	(233,557.10)
	159,799.95	179,091.81	181,025.15	204,087.06
Less : Current portion	(9,981.80)	(10,009.36)	(13,536.49)	(13,779.41)
Finance lease liabilities-net of current portion	149,818.15	169,082.45	167,488.66	190,307.65
Others				
Finance lease liabilities	305,972.89	337,210.97	305,972.89	337,210.97
Less : Deferred interest expenses	(182,746.84)	(204,527.23)	(182,746.84)	(204,527.23)
	123,226.05	132,683.74	123,226.05	132,683.74
Less : Current portion	(6,561.91)	(6,542.23)	(6,561.91)	(6,542.23)
Finance lease liabilities-net of current portion	116,664.14	126,141.51	116,664.14	126,141.51
Total				
Current portion of finance lease liabilities	16,543.71	16,551.59	20,098.40	20,321.64
Finance lease liabilities-net of current portion	266,482.29	295,223.96	284,152.80	316,449.16

Unit : Million Baht

Consolidated financial statements

	Finance lease liabilities		Deferred interest expenses		Net	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Within 1 year	50,366.55	54,339.63	(33,822.84)	(37,788.04)	16,543.71	16,551.59
1 - 5 years	170,806.41	189,615.07	(115,504.11)	(128,344.35)	55,302.30	61,270.72
Over 5 years	429,019.32	487,370.76	(217,839.33)	(253,417.52)	211,179.99	233,953.24
Total	650,192.28	731,325.46	(367,166.28)	(419,549.91)	283,026.00	311,775.55

Unit : Million Baht

Separate financial statements

	Finance lease liabilities		Deferred interest expenses		Net	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Within 1 year	57,167.10	62,011.53	(37,068.70)	(41,689.89)	20,098.40	20,321.64
1 - 5 years	189,304.65	210,668.28	(124,087.15)	(138,736.08)	65,217.50	71,932.20
Over 5 years	439,554.29	502,175.32	(220,618.99)	(257,658.36)	218,935.30	244,516.96
Total	686,026.04	774,855.13	(381,774.84)	(438,084.33)	304,251.20	336,770.80

6.23 Provision liabilities for mine reclamation are as follows :

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Balance at the beginning	2,189.67	2,169.27	2,189.67	2,169.27
Increase during the year	153.10	123.00	153.10	123.00
	2,342.77	2,292.27	2,342.77	2,292.27
Less : Mine reclamation expenses	(103.87)	(93.78)	(103.87)	(93.78)
Depreciation	(13.13)	(8.82)	(13.13)	(8.82)
Balance at the end	2,225.77	2,189.67	2,225.77	2,189.67

6.24 Other non-current liabilities comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Deferred income				
Balance at the beginning	7,020.66	6,823.44	7,020.66	6,823.44
Add : Contribution received	326.87	360.16	326.87	360.16
Asset transferred	629.63	260.00	629.63	260.00
	7,977.16	7,443.60	7,977.16	7,443.60
Less : Recognized to other income	(457.21)	(421.60)	(457.21)	(421.60)
Decrease in depreciation	(1.34)	(1.34)	(1.34)	(1.34)
Balance at the end	7,518.61	7,020.66	7,518.61	7,020.66
Retention	10,676.47	7,802.84	10,676.47	7,802.84
Others	1,027.51	1,049.23	1,232.30	1,117.40
Total	19,222.59	15,872.73	19,427.38	15,940.90

6.25 Equity

Contribution from The Government comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	Dec 31, 17	Dec 31, 16	Dec 31, 17	Dec 31, 16
Contribution for supporting capital	6,507.64	6,507.64	6,507.64	6,507.64
Contribution for supporting construction of the Srinagarind, Bang Lang, Vajiralongkorn, Rajjaprabha and Pak Mun Dam	4,364.75	4,364.75	4,364.75	4,364.75
Less : Accumulated depreciation	(2,057.41)	(1,995.08)	(2,057.41)	(1,995.08)
Depreciation for the period	(62.33)	(62.33)	(62.33)	(62.33)
	2,245.01	2,307.34	2,245.01	2,307.34
Balance	8,752.65	8,814.98	8,752.65	8,814.98

6.26 Revenue from sales of other goods and services comprise

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Revenue from telecommunication services	215.92	231.94	215.92	231.94
Revenue from fuel providing	-	4,122.84	311.99	4,251.54
Revenue from operation and maintenance services	2,274.81	1,907.52	3,668.01	3,050.13
Others	802.73	1,084.62	247.43	346.37
Total	3,293.46	7,346.92	4,443.35	7,879.98

EGAT has the revenue from telecommunication business, which has been approved to operate telecommunication business by The National Telecommunications Commission on March 15, 2007.

6.27 Cost of electric energy sales comprise

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Electric energy purchased	324,775.62	307,692.78	324,775.62	307,694.81
Fuel	107,526.82	126,263.24	76,484.87	89,816.23
Generating expenses	34,307.26	34,416.17	29,169.64	29,808.22
Transmission expenses	11,493.82	11,227.73	11,493.82	11,227.73
	478,103.52	479,599.92	441,923.95	438,546.99
Finance leases-power plants				
Electric energy purchased	(181,522.14)	(187,768.11)	(181,522.14)	(187,768.11)
Fuel	79,650.40	83,329.75	111,601.08	120,670.63
Generating expenses	23,773.86	20,475.07	27,659.00	23,666.23
	(78,097.88)	(83,963.29)	(42,262.06)	(43,431.25)
Total	400,005.64	395,636.63	399,661.89	395,115.74

6.28 Cost of sales of other goods and services comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Cost of telecommunication services	17.19	17.05	17.19	17.05
Cost of fuel providing	-	4,122.84	312.09	4,251.54
Cost of operation and maintenance services	1,406.93	1,169.08	2,337.64	1,933.76
Others	232.14	314.21	100.52	187.74
Total	1,656.26	5,623.18	2,767.44	6,390.09

EGAT recorded cost of telecommunication services together with revenue from telecommunication services since March 15, 2007 that EGAT has received the approval to operate telecommunication business by The National Telecommunications Commission. However, cost of telecommunication services excludes selling expenses, administrative expenses and finance costs, which each of expenses is shown in each of categories of expenses in the statements of income.

6.29 Other income comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Interest income	1,202.00	1,481.33	961.55	1,264.35
Dividend income	564.29	473.23	2,865.71	2,634.61
Gain on disposal of assets	-	211.28	-	210.77
Gain on exchange rates	1,267.51	289.39	570.35	209.07
Gain on exchange rates under finance leases	12,668.73	660.46	12,772.24	676.40
Gain on changes in the fair value of derivatives	136.61	75.80	136.61	75.80
Gain on disposal of investments	26.59	-	-	-
Contribution income	457.21	421.60	457.21	421.60
Fine income	370.53	312.53	370.51	312.50
Income on disposal of fly ash and scrap	400.59	383.00	400.59	383.00
Miscellaneous income	67.11	97.50	67.11	97.50
Others	460.47	356.12	218.76	187.21
Total	17,621.64	4,762.24	18,820.64	6,472.81

6.30 Other expenses comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Loss on disposal of assets	11.86	-	11.78	-
Others	75.80	18.54	34.96	17.53
Total	87.66	18.54	46.74	17.53

6.31 Finance costs comprise

Unit : Million Baht				
	Consolidated financial statements			
	Interest	Expenses relating	Total	
	expenses	to the loans	2017	2016
Capitalized to work under construction	1,040.67	0.92	1,041.59	997.30
Finance costs in the statements of income	4,354.82	19.06	4,373.88	4,195.90
Finance costs-finance leases	36,756.14	-	36,756.14	37,508.06
	41,110.96	19.06	41,130.02	41,703.96
Total	42,151.63	19.98	42,171.61	42,701.26

			Unit : Million Baht	
	Separate financial statements			
	Interest	Expenses relating	Total	
	expenses	to the loans	2017	2016
Capitalized to work under construction	1,040.67	0.92	1,041.59	997.30
Finance costs in the statements of income	2,868.64	1.41	2,870.05	2,790.77
Finance costs-finance leases	40,645.07	-	40,645.07	42,001.81
	43,513.71	1.41	43,515.12	44,792.58
Total	44,554.38	2.33	44,556.71	45,789.88

6.32 Share of profit (loss) from investments in associates comprise

	Unit : Million Baht	
	Consolidated financial statements	
	2017	2016
Electricity Generating Pcl.	2,976.75	2,403.30
First Korat Wind Co., Ltd.	113.97	125.66
K.R. TWO Co., Ltd.	85.90	102.55
Perth Power Partnership (Kwinana)	57.48	80.28
Nam Ngiep 1 Power Co., Ltd.	(265.64)	(73.02)
PT Adaro Indonesia	1,599.68	89.90
Total	4,568.14	2,728.67

6.33 Performance of EGAT

The performance of EGAT in net profit of 2017 was Baht 51,491.70 million. EGAT recorded the provision of expenses of bonus for employees and directors in the amount of Baht 4,582.86 million in the 2017 financial statements.

In April 2017, the Ministry of Finance approved EGAT to allocate the 2016 net profit for bonus payment to the employees and directors in the amount of Baht 4,923.75 million. EGAT recorded the provision of bonus in 2016 Baht 4,832.17 million which was Bath 91.58 million lower than the approval amount. This difference brought about increasing expense in the year 2017.

6.34 Expenses by nature comprise

	Unit : Million Baht			
	Consolidated financial statements		Separate financial statements	
	2017	2016	2017	2016
Electric energy purchased	143,253.48	119,924.67	143,253.48	119,926.70
Raw materials and consumables used	108,510.34	127,343.34	77,230.31	90,686.22
Fuel-finance leases	79,650.40	83,329.75	111,601.08	120,670.63
Managements remuneration	370.25	356.40	153.30	148.38
Employee expenses	25,871.06	26,072.75	25,269.89	25,483.07
Depreciation of property, plant and equipment	25,950.05	26,253.00	24,914.36	25,222.34
Depreciation of finance lease assets	18,130.35	17,739.59	18,130.35	17,739.59
Amortization of intangible assets	443.89	549.47	140.32	239.56
Hire and maintenance expenses	4,602.43	4,513.01	3,060.33	2,989.97
Other expenses	11,275.48	11,635.43	13,210.31	13,142.91
Total	418,057.73	417,717.41	416,963.73	416,249.37
Work performed by the entity and capitalized	47,915.16	41,658.05	47,915.16	41,658.05

7. Power development fund

The legislation of Energy Industry Act B.E. 2550, which enforced on December 11, 2007, determined to set up the power development fund to support extensive electricity service provision to various localities and to develop the local communities affected by the operation of a power plant. Anyhow, Energy Regulatory Commission (ERC) has power and duty to manage the fund, ERC declared about delivery the money to the power development fund for electricity industry licensees in type of electricity generation license B.E. 2553 which determines electricity industry licensees shall deliver the money to the fund in 2 periods as follows:

1. During the power plant construction, starting from the date of conducting the construction in accordance with the contract for services and comply with the electricity industry licenses until the commercial operation date (COD) and have to deliver annually by calculating the money from estimate of installed capacity of power plant at the rate of Baht 50,000 per megawatt per year. In case of the construction is less than 1 year, EGAT has to deliver the money in accordance with percentage of month which construction had been conducted but it must not be less than Baht 50,000 per year.

2. During electricity generating, starting from the date of commercial operation date, EGAT has to deliver monthly by calculating the money based on electric energy produced for sales and internal use which exclude electric energy using in production process in station service. It was separated by the types of fuels using in generating power such as natural gas, fuel oil, diesel, coal, lignite etc.

In 2014 ERC declared about the remittance to the power development fund for electricity selling licensees, as follows:

1. The announcement on the remittance to the power development fund for electricity selling licensees to support the use of renewable energy and the technology used in the operation of electricity industry with less environmental impact B.E. 2557, which requires licensees to remit to the power development fund based on the electricity charged to consumers at the rate of Baht 0.005 per net unit sold in the billing month;

2. The announcement on the remittance to the power development fund for electricity selling licensees to support society and people to have knowledge, awareness and participation in the electricity B.E. 2557, which requires the licensees to remit to the power development fund based on the electricity charged to consumers at the rate of Baht 0.002 per net unit sold in the billing month.

EGAT had contribution provision for the power development fund which can be categorized as follows:

1. The power plant of EGAT including both under construction and declared commercial operation power plants for the years ended December 31, 2017 and 2016 in the amount of Baht 893.95 million and Baht 945.62 million respectively.

2. The supporting of using renewable energy and the technology used in the operation of electricity industry with less environmental impact for the year ended December 31, 2017 and 2016 in the amount of Baht 8.00 million and Baht 9.75 million respectively.

3. The supporting society and people with knowledge, awareness and participation in the electricity for the year ended December 31, 2017 and 2016 in the amount of Baht 3.20 million and Baht 3.90 million respectively.

8. Contingent asset

Power Purchase Agreement of Power Plant Project, Nam Theun 2 and Nam Ngum 2

From the year 2010, EGAT entered into the Power Purchase Agreement with Lao People's Democratic Republic (Lao PDR) of Nam Theun 2 power plant project and Nam Ngum 2 power plant project. The power purchase guarantee in accordance with annual supply target specified that in case of the power plants have supply excess, they don't charge EGAT for the excess. However, the excess will be accumulated to set off in the following year when the power plants have lower supply than annual supply target (supply shortfall). On the other hand, if EGAT has dispatch shortfall, the power plants will charge in the amount of the buying guarantee of EGAT whereas EGAT has to pay in advance and be able to receive amount of energy at a later month to make up the dispatch.

In case of EGAT accepts the supply excess, EGAT is able to apply the amount accumulated to set off. During the agreement period, if it has no supply shortfall, EGAT will pay for accrued electricity expense for supply excess with the excess electricity rate which is less than normal electricity rate (Baht 0.57 for Nam Theun 2 power plant project and Baht 1.145 for Nam Ngum 2 power plant project) at the end of the period. Period of Nam Theun 2 power plant ends at 13th anniversary from March 8, 2010 and period of Nam Ngum 2 power plant ends 10th anniversary from running the machinery. However, both of the projects have to include period of time extended because of unpredictable events.

Besides, EGAT will get the refund 25% of accrued electricity expense which paid at the end of the period. It calculates by accumulated supply excess plus excess energy or excess revenue less accumulated dispatch shortfall. At this time, EGAT is not able to estimate because there is no certainty about amount of contingent assets.

As at December 31, 2017, contingent asset excluded from the separate financial statements are the calling for outsiders to pay compensation to EGAT, which the Civil Court judged that outsiders was liable for the payment of 4 lawsuits in case of infringement with the amount of Baht 26.78 million.

9. Contingent liabilities

As at December 31, 2017, contingent liabilities excluded from the separate financial statements, are the calling for EGAT to pay additional compensation, which the Civil Court judged that EGAT was liable for the additional payment of 58 lawsuits with the amount of Baht 85.98 million in case of calling for compensation of land rights, infringement, breach of contract and relating to employment.

10. Commitments

10.1 Long-Term Power Purchase Agreements

As a result of the government's policy on decreasing the government's investment burden and encouraging private sector to be involved in the power generation industry, the Government approved an investment program for the power generation in new project by private sector (Independent Power Producers known as IPPs) who will sell power to EGAT.

As at December 31, 2017, EGAT has entered into 82 Power Purchase Agreements which can be divided by 2 categories as follows:

(1) Long-term power purchase agreements with hydro power plants - capability to generate electricity of the power plants shall depend on water level in the dam and production plan of each power plant. Therefore, the obligation of the electricity generated by hydro power plants cannot be estimated reliably. Nowadays, EGAT has 7 electric power purchase agreements with hydro power plants which consist of Theun Hinboun power plant, Houay Ho power plant, Nam Theun 2 power plant, Nam Ngum 2 power plant, Xaiyaburi power plant, Xe-Pian Xe-Namnoy power plant and Nam Ngiep 1 power plant.

(2) Long-term power purchase agreements from thermal power plants and combined cycle power plants. At present, EGAT has 75 power purchase agreements from thermal power plants and combined cycle power plants that total commitments to the end of all contracts amounting to approximately Baht 4,372,609 million and total production capacity of 12,042 megawatts.

Power producers	Company	Capacity (megawatts)	Remaining life		Amount	Availability	Energy
			of contract			payment (AP)	payment (EP)
			(years)		(Million Baht)	(Million Baht)	(Million Baht)
Independent Power Producers (IPPs)							
Gulf SRC Company Limited (GSRC)	1	2,500	27	(2021-2047)	899,601	217,007	682,594
Gulf PD Company Limited (GPD)	1	2,500	27	(2023-2049)	898,149	214,791	683,358
Small Power Producers (SPPs)	73	7,042	1-26 Years		2,574,859	603,755	1,971,104
Total	75	12,042			4,372,609	1,035,553	3,337,056

10.2 Fuel Purchase Agreements

EGAT has entered into 4 natural gas purchase agreements for power plant with PTT Public Company Limited. The agreement remaining amount is Baht 248,894 million, which the details are as follows:

1. The main natural gas purchase agreement for power plants of EGAT was ended on December 31, 2017. Currently, the detail of new agreement is under consideration, so it has to be temporary extended this agreement. Thus, this agreement will be ended on December 31, 2018 with expanded amount of Baht 65,634 million. The remaining amount on December 31, 2017 was 65,634 million.

2. The main natural gas purchase agreement for Lankrabue was ended on October 4, 2016. This agreement has been extended to December 31, 2019 with expanded amount of Baht 535 million. The remaining amount on December 31, 2017 was 321 million.

3. Natural gas purchase agreements for Nam Phong and Chana power plants are made separately into 2 agreements with the remaining years of agreements were 3 years 9 months and 14 years 8.5 months. The total remaining amount of these agreements on December 31, 2017 were Baht 35,737 million and Baht 147,202 million respectively.

10.3 Hire-Purchase Agreements

EGAT has entered into the significant local and foreign hire-purchase agreements, which the details are as follows:

10.3.1 There are 493 agreements of local hire-purchase agreements excluding the operating lease agreements and their amount as agreements are Baht 75,553.45 million with the remaining years of agreements between 0.5 month and 10 years. The total remaining amount of these agreements was approximately Baht 35,086.95 million.

10.3.2 There are 158 agreements of foreign hire-purchase agreements and their amount as agreements are Baht 150,313.94 million. Some agreements have the remaining years between 1 month and 8 years 11.5 months while some agreements are not indicated the agreements period. The total remaining amount of these agreements from the conversion of foreign currency by using the average buying and selling exchanged rate on December 29, 2017, which announced by the Bank of Thailand was approximately Baht 71,975.18 million.

10.4 Operating Lease Agreements

The amount of minimum lease payments under significant non-cancellable operating leases in the future are as follows:

	Unit : Million Baht	
	Separate financial statements	
	2017	2016
Within 1 year	111.33	199.10
Over 1 year but not over 5 years	35.30	115.69
Total	146.63	314.79

10.5 Letter of Credit

On December 31, 2017, EGAT has unused letter of credit, which are not expired amounting to approximately Baht 11,346.05 million.

10.6 Share Pledge Contract

Share Pledge of Nam Ngiep 1 Power Co., Ltd.

Nam Ngiep 1 Power Co., Ltd. obtained facilities from certain financial institutions to finance its hydropower project in the Lao PDR in 2014 and entered into a Common Terms Agreement dated August 15, 2014 and other related finance documents (collectively, the Financial Documents) with the financial institutions named therein in

connection with the financing of the project. As a condition to the financing, the shareholders of Nam Ngiep 1 Power Co., Ltd. are required under the Finance Documents to pledge all of their shares in Nam Ngiep 1 Power Co., Ltd. and grant security over all related dividends and other rights, interests and benefits arising from such shares in favor of Nam Ngiep 1 Power Co., Ltd.'s lenders and other secured parties. EGAT International Co., Ltd. (EGATi), therefore, entered into an EGATi Pledge of Shares dated August 15, 2014 with Bangkok Bank PCL (as the Lao PDR law security agent on behalf of the secured parties) pursuant to which EGATi pledged all of its shares in Nam Ngiep 1 Power Co., Ltd. to the Lao PDR law security agent (on behalf of the secured parties) under the Lao PDR law. Under the terms of the Financial Documents, the share pledges will be released only upon the full discharge of all secured indebtedness owing to the secured parties.

10.7 Promissory Notes

EGAT International Co., Ltd. has Promissory Notes for payment the remaining shares from acquisition PT Adaro Indonesia amount to USD 161.50 million in the year 2022 - 2027 when PT Adaro Indonesia has met the conditions in Subscription Agreement.

10.8 Standby Letter of Credit

EGAT International Co., Ltd. (EGATi) has Standby Letter of Credit (SBLC) between the company and lender to guarantee investment in Nam Ngiep 1 Power Co., Ltd. The contract has been renewed for 1 year (expired on August 31, 2018) in the amount of USD 36.49 million which EGATi's bank deposits account in the amount of USD 13.56 million was secured as collateral.

11. Disclosure of Financial Instruments

EGAT used the financial instruments to decrease uncertainty from uncontrollable outside factors. The main derivative financial instrument was forward foreign exchange contracts.

11.1 Forward Foreign Exchange Contracts

EGAT has conducted a forward foreign exchange contracts to mitigate the risk of fluctuations in foreign exchange rate associated with foreign loan repayment, the electric energy purchased from foreign countries, goods and services which are contracts to buy foreign currency at a pre-agreed exchange rate on a specified future time. Forward foreign exchange contracts are translated into functional currency at the exchange rate prevailing at the statements of financial position date and are recognized the differences that occur in the statements of income on maturity date.

As at December 31, 2017, EGAT has no remaining forward foreign exchange contract.

11.2 Fair value of financial assets and liabilities

Fair value and book value of financial assets and liabilities in the consolidated and separate statements of financial position are as follows:

Unit : Million Baht					
Consolidated financial statements					
	Book value	Fair value			
		Level 1	Level 2	Level 3	Total
As at December 31, 2017					
Current					
Debt securities held for trading	493.08	-	493.08	-	493.08
Current portion of long-term					
local loans	(7,465.63)	-	(7,830.44)	-	(7,830.44)
Current portion of long-term					
local loans (EGATIF)	(716.11)	(716.11)	-	-	(716.11)
Current portion of long-term					
foreign loans	(2,744.66)	-	(2,754.97)	-	(2,754.97)
Non-current					
Infrastructure fund (EGATIF)	5,526.58	5,526.58	-	-	5,526.58
Equity securities available for sale	3,195.53	3,195.53	-	-	3,195.53
Long-term local loans	(61,596.97)	-	(65,973.04)	-	(65,973.04)
Long-term local loans (EGATIF)	(19,235.45)	(19,235.45)	-	-	(19,235.45)
Long-term foreign loans	(2,507.93)	-	(2,472.23)	-	(2,472.23)
Debentures	(16,139.58)	-	(16,915.17)	-	(16,915.17)
Contracts					
Forward foreign exchange contracts	-	-	14.56	-	14.56
Interest rate swap and					
cross currency swap contracts	-	-	126.79	-	126.79
Forward foreign exchange contracts	-	-	(106.17)	-	(106.17)
Interest rate swap and					
cross currency swap contracts	-	-	(3,836.09)	-	(3,836.09)

Unit : Million Baht

Consolidated financial statements

	Book value	Fair value			
		Level 1	Level 2	Level 3	Total
As at December 31, 2016					
Current					
Debt securities held for trading	482.47	-	482.47	-	482.47
Current portion of long-term					
local loans	(3,035.41)	-	(3,071.84)	-	(3,071.84)
Current portion of long-term					
local loans (EGATIF)	(570.30)	(570.30)	-	-	(570.30)
Current portion of long-term					
foreign loans	(113.38)	-	(127.66)	-	(127.66)
Non-current					
Infrastructure fund (EGATIF)	5,422.30	5,422.30	-	-	5,422.30
Equity securities available for sale	3,730.28	3,730.28	-	-	3,730.28
Long-term local loans	(51,372.56)	-	(55,437.57)	-	(55,437.57)
Long-term local loans (EGATIF)	(19,709.83)	(19,709.83)	-	-	(19,709.83)
Long-term foreign loans	(3,028.69)	-	(2,991.52)	-	(2,991.52)
Debentures	(17,327.20)	-	(17,999.27)	-	(17,999.27)
Contracts					
Forward foreign exchange contracts	-	-	78.56	-	78.56
Interest rate swap and					
cross currency swap contracts	-	-	409.09	-	409.09
Interest rate swap and					
cross currency swap contracts	-	-	(3,871.34)	-	(3,871.34)

Unit : Million Baht

		Separate financial statements			
	Book value	Fair value			
		Level 1	Level 2	Level 3	Total
As at December 31, 2017					
Current					
Current portion of long-term					
local loans	(7,465.63)	-	(7,830.44)	-	(7,830.44)
Current portion of long-term					
local loans (EGATIF)	(716.11)	(716.11)	-	-	(716.11)
Current portion of long-term					
foreign loans	(86.38)	-	(96.68)	-	(96.68)
Non-current					
Infrastructure fund (EGATIF)	5,526.58	5,526.58	-	-	5,526.58
Long-term local loans	(61,596.97)	-	(65,973.04)	-	(65,973.04)
Long-term local loans (EGATIF)	(19,235.45)	(19,235.45)	-	-	(19,235.45)
Long-term foreign loans	(390.52)	-	(354.82)	-	(354.82)

Unit : Million Baht

		Separate financial statements			
	Book value	Fair value			
		Level 1	Level 2	Level 3	Total
As at December 31, 2016					
Current					
Current portion of long-term					
local loans	(3,005.46)	-	(3,041.89)	-	(3,041.89)
Current portion of long-term					
local loans (EGATIF)	(570.30)	(570.30)	-	-	(570.30)
Current portion of long-term					
foreign loans	(113.38)	-	(127.66)	-	(127.66)
Non-current					
Infrastructure fund (EGATIF)	5,422.30	5,422.30	-	-	5,422.30
Long-term local loans	(51,362.59)	-	(55,427.60)	-	(55,427.60)
Long-term local loans (EGATIF)	(19,709.83)	(19,709.83)	-	-	(19,709.83)
Long-term foreign loans	(461.68)	-	(424.51)	-	(424.51)

Financial instruments carried at fair value

Fair value hierarchy

The table above analyses recurring fair value measurements for financial assets and liabilities. These fair value measurements are categorized into different levels in the fair value hierarchy based on the inputs to valuation techniques used. The different levels are defined as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities that the group can access at the measurement date.
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3: unobservable inputs for the asset or liability.

EGAT determines Level 2 fair values for short-term and long-term loans, derivatives financial instruments and also fixed interest rate bonds by calculating the present value of the estimated cash flow, which based on the nearby term discount rate. Forward foreign exchange contracts, interest rate swap and cross currency swap contracts are calculated by financial institutions, which are contractor of EGAT.

12. Infrastructure Fund

On November 27, 2014, the Board of EGAT approved model of infrastructure fund structure for North Bangkok Combined Cycle Power Plant - Block 1 which required EGAT to quarterly remit net revenue (availability of payments (AP1) net insurance premium) of North Bangkok Combined Cycle Power Plant - Block 1 throughout the contractual period, according to the contract between EGAT and such fund. The amount of fund is not less than Baht 19,000 million, and the estimated contractual period is 20 years.

EGAT will record receipt from sale of investment units in amount of Baht 20,855 million (amount of investment units 2,085.50 million at par value of Baht 10 per unit) as liabilities. The remitted net revenue will be paid in respect of the return and repayment of investment until the maturity date of the contract. For the purpose that EGAT appointed the following representatives.

1. Krung Thai Asset Management Public Company Limited (KTAM) as the fund manager
2. Siam Commercial Bank as the financial advisor and underwriter

EGAT hold the investment in amount of Baht 5,213.75 million (amount of investment units 521.38 million), representing 25% of the units sold. In 2017 and 2016, EGAT received dividend income in the amount of Bath 375.39 million and Bath 268.51 million respectively.

As at December 31, 2017 and 2016 EGAT has outstanding current portion of long-term loans from infrastructure fund in the amount of Bath 716.11 million and Bath 570.30 million, long-term loans from infrastructure fund in the amount of Bath 19,235.45 million and Bath 19,709.83 million and accrued interest expense in the amount of Bath 311.59 million and Bath 459.35 million respectively.

13. Events after the reporting period

Electricity Generating Authority of Thailand

On February 14, 2018, Krung Thai Asset Management Pcl. (KTAM), the fund manager of infrastructure fund for North Bangkok Combined Cycle Power Plant - Block 1, Electricity Generating Authority of Thailand, specified shareholders book closing date to be March 2, 2018, which is the date that a person marked in the company's record as a shareholder would be entitled to receive the dividend payment. KTAM also declared dividend payment from the retained earnings at the rate of Baht 0.19 per unit on March 15, 2018. EGAT invested in 521.38 million units so dividend income received is Baht 99.06 million.

On February 13, 2018, the Board of Directors' meeting of Ratchaburi Electricity Generating Holding Pcl. approved to submit for approval at the annual general meeting of the shareholders of the Company, a full year 2017 dividend payment at the rate of Baht 2.40 per share and specified shareholders book closing date to be February 28, 2018. The Company paid the interim dividends of Baht 1.15 per share and will pay dividend from the last six months performance of year 2017 at the rate of Baht 1.25 per share on April 20, 2018. EGAT invested in 652.50 million shares so dividend income received is Baht 815.63 million. However, the dividend payment is subject to the approval of the shareholders at the annual general meeting on April 5, 2018.

On February 23, 2018, the Board of Directors' meeting of Electricity Generating Pcl. approve to submit for approval at the annual general meeting of the shareholders of the Company, the last six months performance of year 2017 dividend payment at the rate of Baht 3.50 per share on April 27, 2018 and specified shareholders book closing date to be March 9, 2018. EGAT invested in 133.77 million shares so dividend income received is Baht 468.21 million. However, the dividend payment is subject to the approval of the shareholders at the annual general meeting on April 19, 2018.

Ratchaburi Electricity Generating Holding Pcl. (RATCH)

On January 12, 2018, RATCH paid for the additional paid-up share capital of Xe-Pian Xe-Namnoy Power Co., Ltd., a direct joint venture, amounting to USD 0.73 million or equivalent to Baht 23.42 million, in the proportion of investment of 25%.

On January 24, 2018, RATCH announced that KK Power Co., Ltd., A joint venture company in the Kingdom of Cambodia in which RATCH held 50 percent of the registered and paid capital, had already been dissolved and liquidated in accordance with the laws of the Kingdom of Cambodia. The dissolution of such joint venture company did not have any effect on RATCH's operations.

EGAT International Co., Ltd. (EGATi)

On January 5, 2018, EGATi paid for the increase in share capital of Nam Ngiep 1 Power Co., Ltd. amounting to USD 1.16 million or equivalent to Baht 37.48 million, in the proportion of investment of 30%.

On February 7, 2018, EGATi paid for the increase in share capital of Nam Ngiep 1 Power Co., Ltd. amounting to USD 1.99 million or equivalent to Baht 63.21 million, in the proportion of investment of 30%.

On February 26, 2018, the Annual General Meeting of the Shareholders of PT Adaro Indonesia had resolutions for approval of the dividend payment for the year 2017 in amount of USD 321.06 million. EGATi has invested in the proportion of 11.53% so dividend income received is USD 37.00 million or equivalent to Baht 1,155.07 million before tax.

14. Reclassification transactions

EGAT reclassified some transactions in the financial statements for the year ended December 31, 2016 for conformity with the presentation of the financial statements for the year ended December 31, 2017.

15. Issuance dated of financial statements

Governor of EGAT approved these financial statements for issuance on March 16, 2018.

Remuneration of Auditor

EGAT paid audit fees to the Office of the Auditor General of Thailand (OAG) for the year 2017 for a total of Baht 4,100,000 and paid a non-audit services fee comprising fee for the audits of account unbundling and fee for the audits of North Bangkok Combined Cycle Power Plant Block 1 project's statements of income for a total of Baht 370,000.





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