



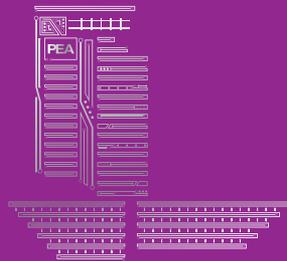
**Digital Energy
Operation**



**Connected
Customer**



**Next Generation
Enterprise**



PEA
DIGITAL UTILITY



**Workforce
of the Future**



**Digital
Platform**



Digital Energy Operation

Creating digitally enabled grid and maximizing the convergence of power and information for grid reliability and operational excellence



Connected Customer

Engaging the digital consumer in the new connected world. Designing a phenomenal customer experience and empowering digital trust



PEA
DIGITAL UTILITY



Next Generation Enterprise

Digitizing enterprise capability to become strategic partner with business



Workforce of the Future

Inventing workforce for future digital operations and new talent marketplaces to drive the most profound business transformation



Digital Platform

Building a robust ecosystem platform that beyond just a technology platform with flexible and agile delivery to scale at speed



Scan to view
“PEA Digital Utility”
concept video



Provincial Electricity Authority (PEA) was founded as an individual organization under the Royal Decree issued on 6 March 1954 and was announced in the Royal Thai Government Gazette on 16 March 1954. The Board of Directors was appointed to be responsible for the management of PEA under the Department of Public and Municipal Works, Ministry of Interior, and the government with overall governing authorities of the Interior Minister. PEA has a legally established capital of 5 million baht with 117 electricity offices under its management and administration. PEA was later promoted according to the Provincial Electricity Act B.E. 2503 (1960) on 28 September 1960 by taking over all the missions of Provincial Electricity Organization to be operated continually.

Mission

PEA is responsible for the provision of standardized electricity services and related business to attain the customer's satisfaction on products and services through PEA's continual corporate development plans with the recognition of social and environmental responsibility.

Vision

PEA is a leading organization in region, which focused on providing efficient, reliable electricity services, related business for developing quality of life, sustainability of economics and society.

Core Values

- Modernization
- Excellent Service
- Good Governance

Objectives

1
To produce, provide, deliver and distribute electricity.

2
To operate electricity business and other businesses involved or beneficial to PEA.

Honored Awards



State-Owned Enterprise Award for Outstanding Corporate Leadership Award by the State Enterprise Policy Office (SEPO)

State-Owned Enterprise Award for Outstanding State Enterprise by the State Enterprise Policy Office (SEPO)

State-Owned Enterprise Award for Outstanding Corporate Social Responsibility (CSR) by the State Enterprise Policy Office (SEPO)

State-Owned Enterprise Award for Outstanding Collaboration for Development : Honorary Strategic Collaboration by the State Enterprise Policy Office (SEPO)

State-Owned Enterprise Award (Consolation Prize) for Outstanding Innovation : Creativity by the State Enterprise Policy Office (SEPO)

State-Owned Enterprise Award (Consolation Prize) for Outstanding Innovation : Innovation by the State Enterprise Policy Office (SEPO)



State-Owned Enterprise Award for Outstanding Information Disclosure and Transparency by the State Enterprise Policy Office (SEPO)

Outstanding Award for 2018 Calendar for the 38th "Suriyasithorn" to promote national identity and cultural art at The Government Public Relation Department which was held by Public Relation Society of Thailand

Outstanding Award for Sustainability Report 2018 from the Office of the Securities and Exchange Commission (SEC), the Thai Listed Companies Association, and the Thaipat Institute

Consolation Prize for the Expertise Process Development Project for those working in sale system with no electricity cut, both in Thailand and overseas. This is part of the HR Innovation award 2018 held by the Personnel Management Association of Thailand (PMAT), Thailand Productivity Institute and the Faculty of Human Resources Development - the National Institute of Development Administration (NIDA)



Government Easy Contact Center Award 2018 for 166 state enterprises by the Office of the Public Sector Development Commission (OPDC)

Outstanding Government Award for Government Service 2018, Service Development Category by the Office of the Public Sector Development Commission (OPDC)

6th Outstanding Retirement Mutual Fund 2017 Competition with a Royal-Sponsored Award from HRH Princess Maha Chakri Sirindhorn for a category of a single fund for State Enterprise's Retirement Mutual Fund Award with over 10,000 million baht in size on 21 February 2018



The Asset Treasury, Trade, Supply Chain and Risk Management Award 2018 for Best Cash Management Solution Thailand by The Asset Magazine in Hong Kong, China

Honorable Plaque for Zero Accident Campaign 2018 for a number of 39 Platinum, Silver and Brass categories by Thailand Institute of Occupational Safety and Health

Honorable Plaque for Outstanding Government Information Center 2018 for 7 awards by Office of the Official Information Commission (OIC)

Certificate for Business Continuity Management System : BCMS with ISO 22301 Standard

Certificate for Occupational Health and Safety Management System with ISO 18001 Standard

Certificate for Information Security Management with ISO 27001 Standard

Contents

2
History of PEA

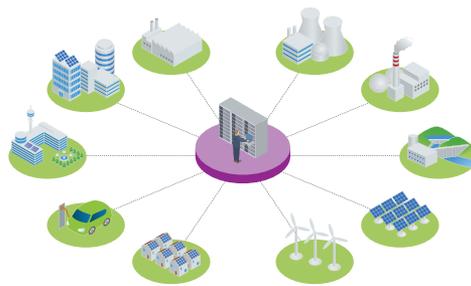
10
Statement of
Direction : SOD

11
Areas of Responsibility
by PEA

12
PEA's Offices

14
PEA's Regional
Offices by Categories

15
Business Operation
under PEA



18
Summary of Key
Financial Information

19
Influential Factors
for PEA

22
Industry Overview
and Outlook

27
Situation Analysis
for PEA's Power
Distribution

37
Performance Report
According to the
Balanced Scorecard

40
Organization
Performance



51

Analysis Report :
Financial Status

52

PEA's Structure
Management Chart

54

Manpower Structure
and Personnel
Expenditures

55

PEA's Board of
Directors 2018

64

PEA Executive

69

Key Current
Investments and
Future Plans



81

Corporate Social
Responsibility

85

Report of the PEA
Audit Committee for
the year 2018

87

PEA Risk
Management &
Internal Control
Committee Report

88

Auditor's Report

152

Summary Information
for 10 Years

Statement of Direction : SOD



The Ministry of Finance has coordinated with the Ministry of Interior, as a key line management ministry of PEA, and all agencies involved to summarize statement of direction (SOD) to be used as guidelines for regulating, monitoring and prioritizing what PEA should focus and work on, and also as indicator for the organization performance evaluation in the future. The SOD for PEA as a state enterprise includes



Statement for State Enterprise in General

Be a mechanism to drive the nation's social and economic strategy based on efficient performance according to good governance.



Statement for State Enterprise in Energy Sector

Create national power stability, promote and develop clean renewable energy, and support an effective use of power with efficient management of investment costs and social and environmental concerns.

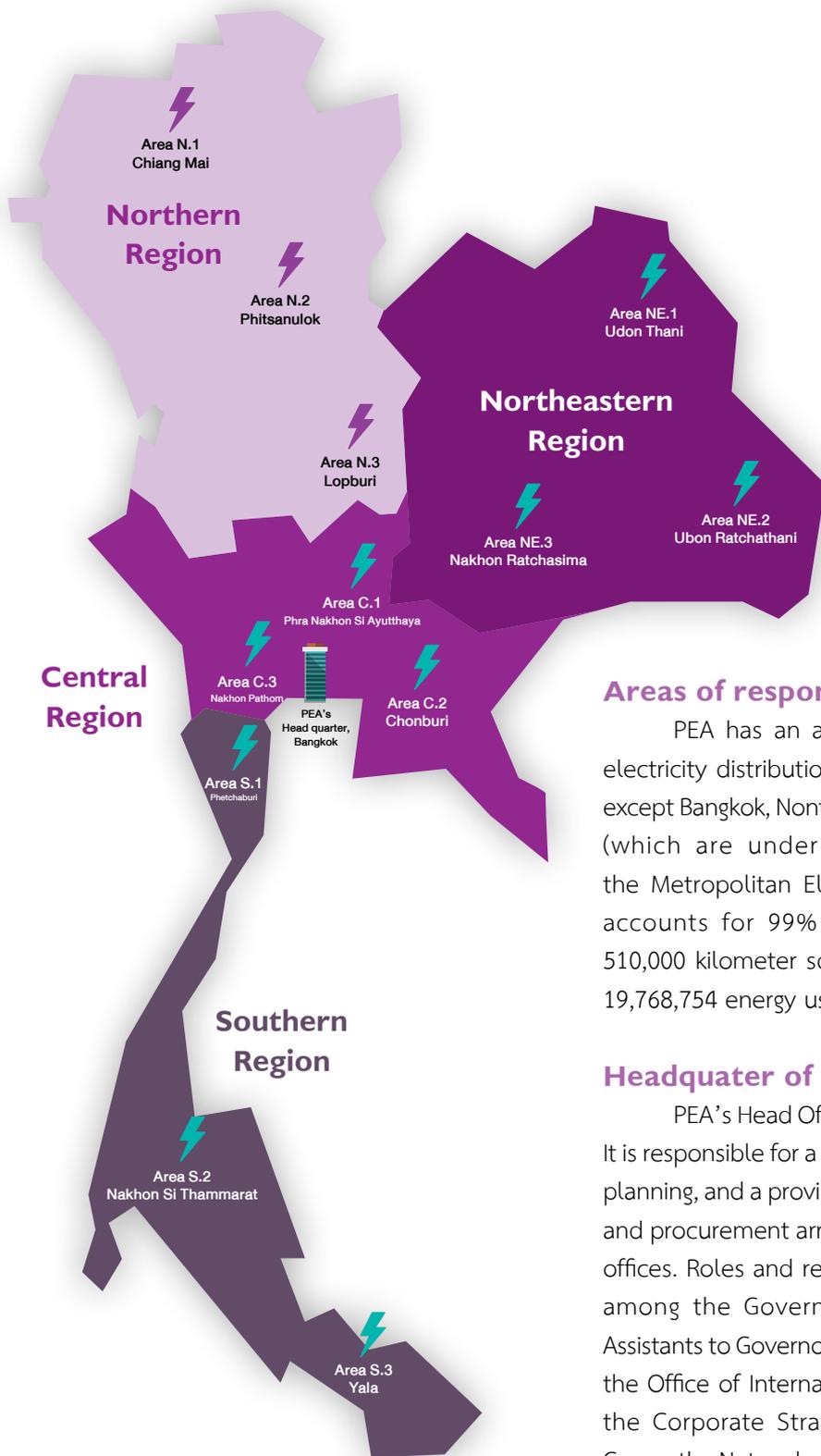


Statement for PEA

Develop power distribution system with quality and sufficiency for national demands, build new business alliances, expand business investment for its affiliates as values added for PEA's assets, and have social and environmental responsibility



Areas of Responsibility by PEA



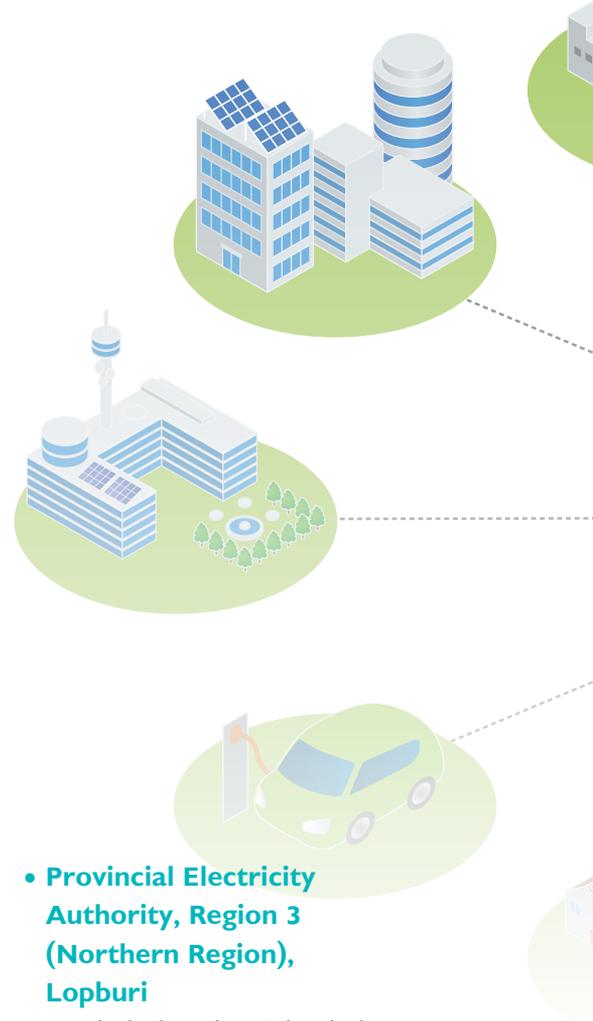
Areas of responsibility

PEA has an area of responsibility for electricity distribution covering 74 provinces, except Bangkok, Nonthaburi and Samutprakarn (which are under the responsibility of the Metropolitan Electricity Authority). This accounts for 99% of Thailand or about 510,000 kilometer squares with a number of 19,768,754 energy users.

Headquarter of PEA

PEA's Head Office is located in Bangkok. It is responsible for a formulation of policy and planning, and a provision of recommendations and procurement arrangement for its regional offices. Roles and responsibilities are divided among the Governor, Deputy Governors, Assistants to Governors, the Office of Governor, the Office of Internal Audit, the Legal Office, the Corporate Strategy and Development Group, the Network and Service Group and the Supporting Group which is sub-divided into departments and divisions.

PEA's Offices



Bangkok

Head Office's Provincial Electricity Authority

200 Ngam Wong Wan Rd., Lad Yao, Chatuchak, Bangkok 10900

Northern Region

- **Provincial Electricity Authority, Region 1 (Northern Region), Chiang Mai**

208 Chiang Mai-Lamphun Rd., Wat Ket, Mueang, Chiang Mai 50000

Responsible for electricity work in 6 provinces: Chiang Mai, Mae Hong Son, Lamphun, Lampang, Chiang Rai and Phayao

- **Provincial Electricity Authority, Region 2 (Northern Region), Phitsanulok**

350/9 Moo 7, Mittraphap Rd., Samor Khae, Mueang, Phitsanulok 65000

Responsible for electricity work in 8 provinces: Phitsanulok, Pichit, Tak, Kamphaeng Phet, Sukhothai, Phrae, Nan and Uttaradit

- **Provincial Electricity Authority, Region 3 (Northern Region), Lopburi**

13 Phahol Yothin Rd., Thale Chup Sorn, Mueang, Lopburi 15000

Responsible for electricity work in 6 provinces: Lopburi, Sing Buri, Phetchabun, Nakorn Sawan, Uthaithani and Chainat

Northeastern Region

- **Provincial Electricity Authority, Region 1 (Northeastern Region), Udon Thani**

123 Moo 5, Ban Nong Hua Mu, Na Di, Mueang, Udon Thani 41000

Responsible for electricity work in 8 provinces: Udon Thani, Nong Khai, Khon Kaen, Loei, Sakon Nakhon, Nakhon Phanom, Nong Bua Lam Phu and Bueng Kan

- **Provincial Electricity Authority, Region 2 (Northeastern Region), Ubon Ratchathani**

195 Moo 7, Liang Mueang Rd., Jaeramair, Mueang, Ubon Ratchathani 34000

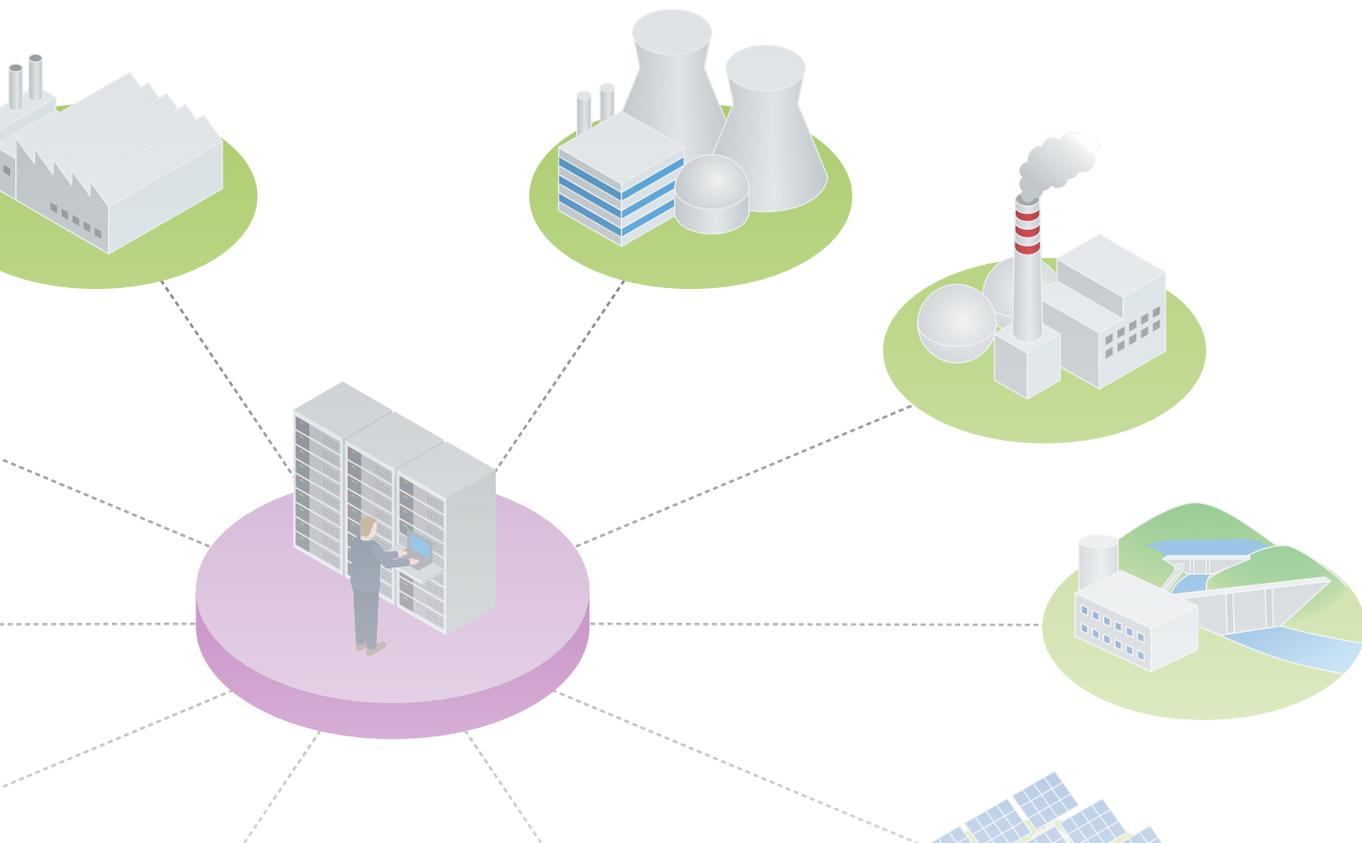
Responsible for electricity work in 8 provinces: Ubon Ratchathani, Yasothon, Roi Et, Kalasin, Mahasarakham, Srisaket, Mukdahan and Amnat Charoen

- **Provincial Electricity Authority, Region 3 (Northeastern Region), Nakhon Ratchasima**

3 Moo 2, Mittraphap Rd., Ban Mai, Meuang, Nakhon Ratchasima 30000

Responsible for electricity work in 4 provinces: Nakhon Ratchasima, Chaiyaphum, Buriram and Surin





Central Region

- **Provincial Electricity Authority, Region 1 (Central Region), Phra Nakhon Si Ayutthaya**

46 Moo 6, Asian Highway, Hantra, Phra Nakhon Si Ayutthaya 13000

Responsible for electricity work in 7 provinces : Phra Nakhon Si Ayutthaya, Ang Thong, Pathumthani, Saraburi, Nakhon Nayok, Prachinburi and Sa Kaeo

- **Provincial Electricity Authority, Region 2 (Central Region), Chon Buri**

47/1 Moo 3, Samet, Mueang, Chon Buri 20000

Responsible for electricity work in 5 provinces : Chon Buri, Chachoengsao, Rayong, Chanthaburi and Trat

- **Provincial Electricity Authority, Region 3 (Central Region), Nakhon Pathom**

9/1 Moo 1, Thaiyawat, Nakhon Chai Si, Nakhon Pathom 73120

Responsible for electricity work in 4 provinces : Nakhon Pathom, Samut Sakhon, Suphanburi and Kanchanaburi

Southern Region

- **Provincial Electricity Authority, Region 1 (Southern Region), Phetchaburi**

86 Moo 5, Phetchaburi-Had Chao Samran Rd., Pho Rai Wan, Mueang, Phetchaburi 76000

Responsible for electricity work in 6 provinces: Phetchaburi, Prachuap Khiri Khan, Ratchaburi, Samut Songkhram, Chumphon and Ranong

- **Provincial Electricity Authority, Region 2 (Southern Region), Nakhon Si Thammarat**

167, Asian Highway, Na san, Phra Phrom, Nakhon Si Thammarat 80000

Responsible for electricity work in 6 provinces: Nakhon Si Thammarat, Trang, Krabi, Suratthani, Phuket and Phang-nga

- **Provincial Electricity Authority, Region 3 (Southern Region), Yala**

59/27, Yala-Pattani Rd., Khao Tum, Yarang, Pattani 94160

Responsible for electricity work in 6 provinces : Yala, Pattani, Narathiwat, Songkhla, Satun and Phattalung



PEA's Regional Offices by Categories

Type	2018				2017				2016			
	Center	PEA office	Sub-PEA office	Total	Center	PEA office	Sub-PEA office	Total	Center	PEA office	Sub-PEA office	Total
Area N.1	15	33	44	92	15	33	44	92	15	33	44	92
Area N.2	12	30	45	87	12	31	44	87	12	30	45	87
Area N.3	13	25	31	69	13	24	32	69	13	24	32	69
Northern Region	40	88	120	248	40	88	120	248	40	87	121	248
Area NE.1	15	27	74	116	15	27	71	113	15	27	71	113
Area NE.2	14	27	76	117	14	27	73	114	14	27	73	114
Area NE.3	15	32	39	86	14	32	38	84	14	32	38	84
Northeastern Region	44	86	189	319	43	86	182	311	43	86	182	311
Area C.1	25	19	25	69	25	19	25	69	25	19	25	69
Area C.2	21	16	24	61	21	16	24	61	21	16	24	61
Area C.3	16	18	15	49	16	18	13	47	16	18	13	47
Central Region	62	53	64	179	62	53	62	177	62	53	62	177
Area S.1	14	15	23	52	13	16	22	51	13	16	22	51
Area S.2	16	25	38	79	15	25	38	78	15	25	38	78
Area S.3	13	21	34	68	13	21	34	68	13	21	34	68
Southern Region	43	61	95	199	41	62	94	197	41	62	94	197
Total	189	288	468	945	186	289	458	933	186	288	459	933

Remark: Numbers not included Headquarter 12 provincial head-offices.



Business Operation under PEA

PEA Encom International Co., Ltd.

PEA Encom International Co., Ltd. (PEA ENCOM) was established, according to the Cabinet Resolution on 3 June 2009, to be responsible for electricity power investment and to organize trainings for electricity work for the public and private sectors, both locally and internationally.

PEA ENCOM was registered as a juristic persons on 14 October 2009. Its office is located at 200 LED Building, 4th Floor, Ngam Wongwan Rd., Lad Yao, Chatuchak, Bangkok. PEA is the sole shareholder of PEA ENCOM which has a registered capital of 1,891.28 million baht.

Vision

PEA ENCOM is a business leader in electricity power and innovation in ASEAN region.

Mission

- To invest and develop a consolidated business in electricity power and energy conservation in Thailand
- To be a mechanism for the government to promote investment and market reference in alternative energy and energy conservation for the public sector
- To expand investment in electricity power and other business involved in the region

Performance

For the past performance, PEA ENCOM has invested in domestically alternative energy, including an electricity production work plan from solar energy with Solar Power Co., Ltd. for 4 projects covering areas of Surin, Loei and Khon Kaen. PEA ENCOM is assigned by the Ministry of Interior and PEA to invest in waste for energy plant in Phra Nakhon Si Ayutthaya which is now under construction. The company's project to set up/invest in a construction of 3 people-public partnership for electricity plants in three southern-border provinces is also approved. PEA ENCOM is successful in a joint venture for an electricity production plan from biomass for an electricity distribution of 12 MW at community level. In addition, PEA ENCOM has also invested with Thai Sermsuk Energy Co., Ltd. to set up a Bacho biogas project in Narathiwat. Under this project, waste water from raw palm oil extract is used to produce electricity. Its commercial distribution of electricity is expected to start in July 2019. As for an overseas investment, PEA ENCOM is under negotiation and feasibility study for an investment in electricity production project by using solar power and an integrated electricity power plant project in Myanmar.



PEA ENCOM has planned a five-year electricity system investment from solar rooftop power from 2017 - 2021 with an investment target for 200 MW and a capital worth an amount of 8,000 million baht. This is consisted of the company's capital for 2,000 million baht and a loan

of 6,000 million baht. For its operation in 2018, an installation of solar rooftop electricity production is set up with 2.3 MW of electricity distribution has been made. According to the signed agreement, about 10 MW of the electricity distribution will be built. Meanwhile, about 57 MW is under a proposal process.

PEA ENCOM has initiated a use of an electric vehicle (EV) among the public vehicles by transforming a Tuk Tuk using petrol to be an electric Tuk Tuk. The company is a distributor of FOMM Asia Co., Ltd. to sell FOMM EVs and a distributor of EV motorcycle to help promote the government policy for a reduction of oil and air pollution. In addition, PEA ENCOM has conducted a feasibility study for its business investment in energy storage system to expand the company business line to grow more sustainably and to respond to disruptive technology.

PEA ENCOM has offered a consultation work in engineering and electricity power management efficiently, including an energy saving and energy conservation business investment and services with a procurement for relevant energy saving equipment in various systems such as lighting system equipment, air-conditioning system, utility monitoring system in factories, buildings and EVs. There is also a power management service to ensure an efficient use of energy in industrial factories, business buildings and houses. Over the past years, PEA ENCOM has distributed LED bulbs named ENCOM LED at centers for home maintenance and construction equipment for 20 branches. There is also a service offered for both the public and private sectors such as Atlantic Pharmaceutical Factory Project, LPN Project on Rama 9, PEA Cooperative Project etc.



Services for domestic and international engineering training workshop are also offered to increase knowledge in energy and electricity system for various agencies. The workshops cover both theories and practices by experienced engineers in specific fields from PEA and other agencies. There are a variety of courses such as

- “Working on Communication lines for external agencies on PEA’s electrical poles”
- “How to Apply Equipment for Electricity System Maintenance in Industrial Factories”
- “How to Maintain Solar Power Production System”
- “Electricity/Power Utility Safety Management System”
- “How to Apply the Use of Equipment for Electricity System Maintenance in Industrial Factory”

Last year, PEA ENCOM has served both local and international clients, including those from the public and private sectors, under the Medium-Voltage Sub-Transmission Expansion Sector project with the Electricity Generating Authority of Cambodia and a training workshop on “PR and Communications in Digital Era” for Electricite Du Laos (EDL) and a workshop on “Hotline bypass training in Thailand” for electric engineers of Vietnam (EVN HCMC and Khanh Hoa Power Company).

Connected Transactions

PEA has done a hiring agreement with PEN ENCOM according to the agreement ៦ 267/2560 dated 4 January 2018 for a purchase and an installation of a development project for renewable and conservation energy at Dhammarak Foundation Clinic, Lopburi.

Anyhow, a disclosure of relevant items is made according to the regulations of the Office of the Securities and Exchange Commission and the accounting standard for a data revelation of persons and activities involved which are made by the Federation of Accounting Professions

Rational for Investment for Connected Transactions

PEA and PEA ENCOM have signed a Memorandum of Understanding for cooperation in service businesses about solar energy production and a construction of electricity system on 25 November 2016. Under the MOU, if PEA is hired by customers to provide a service about solar energy production, PEA will assign PEA ENCOM to operate the service for the benefits of both PEA and PEA ENCOM customers to receive a good quality and fast service with standard and reliability by aligning with strict criteria for procurement and supply procedures according to the Government Procurement and Supplies Management Act B.E. 2560 and the Finance Ministry’s Regulations on Government Procurement and Supplies Management Act B.E. 2560, laws, and other regulations involved with no influences on any bargaining power on trade negotiation.

Policy about Future Businesses

PEA and its affiliates have planned to manage any future businesses as usual. No any special plan or any benefit transfer among these companies. PEA will still strictly focus on the policy of the Government Procurement and Supplies Management Act B.E. 2560 and the Finance Ministry’s Regulations on Government Procurement and Supplies Management Act B.E. 2560, including regulations involved.



Summary of Key Financial Information

Financial Information

Unit : Million Baht

Items	2018	2017	2016
Total Income	499,316	482,963	456,737
Total Expenses	478,700	456,294	430,849
Net Profits	20,616	26,669	25,888
Total Assets	414,880	397,836	377,640
Total Debts	244,264	234,484	226,891
Capitals	170,616	163,352	150,749

Financial Ratios

Items	2018	2017	2016
Ratio for revolving funds (Times)	1.40	1.67	1.76
Ratio for flexible assets (Times)	1.37	1.64	1.73
Ratio for performing loans against capitals (Times)	0.43	0.48	0.54
Ratio for returns on total assets (Percentage)	5.07	6.82	6.54
Ratio for capability to pay off debts (Times)	2.64	3.90	3.15

Influential Factors for PEA

In developing its strategies, PEA has analyzed factors that may have an impact for the organization to achieve its goals. These factors are internal and external environments, strengths and weaknesses, opportunities and challenges. PEA has applied risk management to support its administration in order to reduce levels of potential risks.

Strategic Objective / Goal

01



Operate a business with good governance for a sustainable growth

Objectives:

1. Stakeholders and communities have confidence and accept the organization's business operation with good governance
2. Leverage its operation according to SDGs and good guidelines under the DJSI framework
3. Enhance a security standard and vocational health and working environment of the organization

02



Gear towards an Organization with Excellency in Electricity Distribution by Developing Efficiency of All Working Systems

Objectives:

1. Increase security in distribution system, reduce loss and operate according to the Development Plan for Smart Grid Network
2. Organization's structure has a suitability and flexibility in operation or strengthen its business operational procedure
3. Increase efficiency and capability in generating income from its assets
4. Build a long-term financial stability

03



Respond to Demands of All Groups of Customers

Objectives:

1. Increase satisfaction and attachment of all groups of customers
2. Maintain 'high value' customer base

04



Increase Business Values for Organization to Enhance Capacity Level in Competition

Objectives:

1. Administrate roles, regulations and operational plan for PEA and its affiliates for other businesses involved.
2. Market expansion to other nations in the region
3. Investment policy and suitable portfolio mix in various situations that can general incomes according to the goals

05



Drive Forwards the Organization to Become Modernized with Human Capital, Digital Technology and Innovation

Objectives:

1. Leverage personnel administration and capacity development to respond to directions of organization
2. Develop digital technology to become standardized, stable, safe and response to the business growth
3. Increase the roles of innovation in developing working processes, and commercial expansion

Strategic Objective 2018		Risk Factors 2018
SO1	 <p>Operate a business with good governance for a sustainable growth</p>	-
SO2	 <p>Gear towards an Organization with Excellency in Electricity Distribution by Developing Efficiency of All Working Systems</p>	<p>RF1 A leverage of electricity distribution and services continuingly</p> <p>RF2 An administration of loss unit as a whole</p> <p>RF3 An administration of assets with ultimate efficiency</p>
SO3	 <p>Respond to Demands of All Groups of Customers</p>	<p>RF9 An analysis of its competitive ability and income loss from a medium-sized and large-sized enterprise</p>
SO4	 <p>Increase Business Values for Organization to Enhance Capacity Level in Competition</p>	<p>RF4 A success of a continued business model investment</p> <p>RF8 An analysis of business potential for its affiliates and other companies involved</p>
SO5	 <p>Drive Forwards the Organization to Become Modernized with Human Capital, Digital Technology and Innovation</p>	<p>RF5 Develop personnel’s potential to serve its main business and other relevant business</p> <p>RF6 A safety and security for cyber security</p> <p>RF7 An organizational transformation with digital technology (Digital Transformation)</p>

“**RF10** PEA does not have a software computer system for a main business (CBS) for use after the 1st phase of purchase agreement (March 2020) with (CBS) is terminated.” This is a risk issue at an organization level which is highlighted by PEA Executives in order to manage risks at the organization efficiently and support the organization to achieve its objectives as planned.



PEA's Performance in 2018

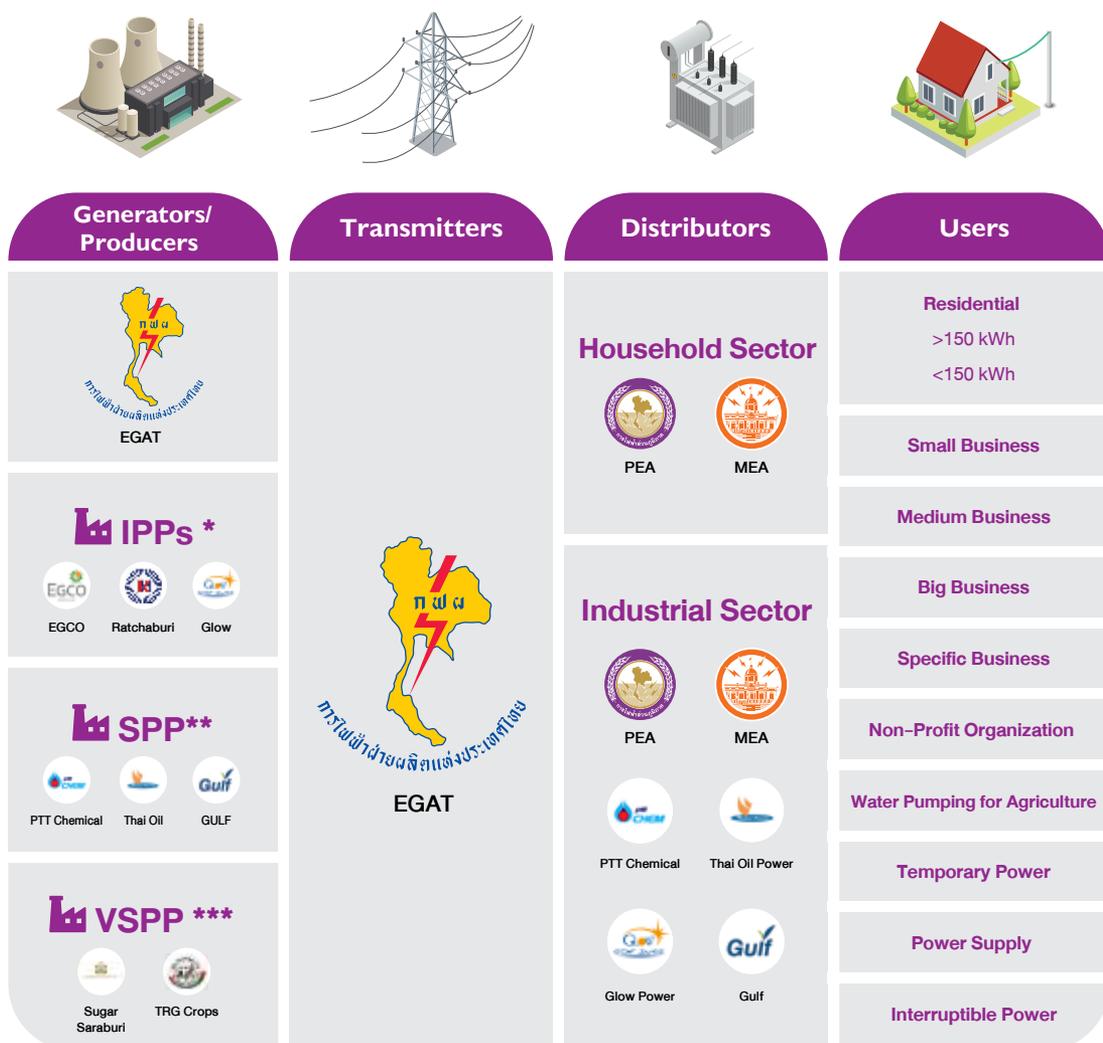
Risk Factors	Performance
1. A leverage of electricity distribution and services continuingly	<ul style="list-style-type: none"> SAIFI Expenses as of January - December 2018 is equal to 3.81 times/ person/ year SAIDI Expenses as of January - December 2018 is equal to 89.82 minutes/ person/ year
2. An administration of loss unit as a whole	<ul style="list-style-type: none"> Total loss as of January - December 2018 is equal to 5.37%, less than the target goal at 5th level = 0.19% (target goal at 5th level as of January - December 2018 = 5.18%)
3. An administration of assets with ultimate efficiency	<ul style="list-style-type: none"> Ratio for yields against total assets (ROA) Status as of January - December 2018 is equal to 5.09%
4. A success of a continued business model investment	<ul style="list-style-type: none"> Success in administration according to the continued business plan as of January - December 2018 is equal to 100%
5. A personnel's potential development to serve its main business and other relevant business	<ul style="list-style-type: none"> Personnel has various competencies as followed: <ul style="list-style-type: none"> - Digital Use and Problem Solving = 80% - Information Handling = 72% - Digital Intelligence Communication = 85% - Digital Content Creation = 67% - Digital Safety = 84%
6. A safety and security for cyber security	<ul style="list-style-type: none"> Success of PEA's digital operation plan as of the 4/2018 quarter is equal to 80.60% with a progress report for its operating performance/projects according to the plan to PEA's Digital Steering Committee and its Information, Communications and Technology Commission (ICT) Safety Standard of ISO 27001 has prepared a surveillance audit and a group of internal audit will further monitor it External invasion standard has made a safety and loophole monitoring of the network security to replace and improve its ICT structure
7. An organizational transformation with digital technology	<ul style="list-style-type: none"> Success of PEA's digital operation plan as of the 4/2018 quarter = 80.60% with a monthly progress report for its operating performance/projects according to the plan to PEA's Digital Steering Committee and its Information, Communications and Technology Commission (ICT)
8. An analysis of business potential for its affiliates and other companies involved	<ul style="list-style-type: none"> Success of PEA's analysis for potential business of its affiliates and other companies involved as of January - December 2018 is equal to 77.00%
9. An analysis of its competitive ability and income loss from a medium-sized and large-sized enterprise	<ul style="list-style-type: none"> Success of plan to maintain customers from medium-sized and big-sized customers to use renewable energy as of January - December 2018 is equal to 87.77%
10. PEA does not have a software computer system for a main business (CBS) for use after the 1 st phase of purchase agreement (CBS) is terminated at the end of the 1 st quarter (March 2020)	<ul style="list-style-type: none"> Further explanation with additional information is submitted to the Procurement Monitoring Board (Super Board) to consider ways to provide a software computer system for a main business during the 2nd phase on 12 December 2018.

Industry Overview and Outlook

Industry Overview

Today Thailand's power industry structure is based on an enhanced single buyer model (ESB), which was endorsed by the Cabinet on 9 December 2003 to have the Electricity Generating Authority of Thailand (EGAT) as a producer, a transmitter, and a single buyer of power from privately-owned power plants and a sole importer of power from overseas. Then, EGAT will distribute electricity via a power transmission system to the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA) to distribute electricity to users. In addition, EGAT has directly distributed some parts of the power generated to other major users who are authorized to distribute it under a relevant law, and to neighboring countries. MEA is responsible for

electricity distribution to users in Bangkok, Nonthaburi and Samut Prakarn, whereas PEA is in charge of electricity distribution to users in other provinces not covered by MEA. Some privately-owned power operators can distribute and sell electricity directly to customers. Both MEA and PEA own a power station, a transmission system, a distribution system, an electric transformer for distribution, low-voltage power system and electric meters which set a uniform tariff for electricity bills for power consumers nationwide and are differed according to types of power users. However, the Energy Regulatory Commission (ERC) acts as a regulator monitoring the structure of national electricity tariff as a whole.



*IPP (Independent Power Producer) **SPP (Small Power Producer) ***VSPP (Very Small Power Producer)

Outlook

PEA's strategic plan is made to create a framework and guideline for PEA's work from 2019 - 2023. This is made in consideration with the currently external and internal environments which will have an impact on PEA's performance in the future. The strategic plan consists of 5 strategic objectives under its 12 strategies as followed:

Strategic Objective : SO

Strategic Objectives	Objectives
1. Operate a business with good governance for a sustainable growth	<ol style="list-style-type: none"> 1. Stakeholders and communities have confidence and accept the organization's business operation with good governance 2. Leverage its operation according to SDGs and good guidelines under the DJSI framework 3. Enhance a security standard and vocational health and working environment of the organization
2. Gear towards an Organization with Excellence in Electricity Distribution by Developing Efficiency of All Working Systems	<ol style="list-style-type: none"> 1. Increase security in distribution system, reduce loss and operate according to the Development Plan for Smart Grid Network 2. Organization's structure has a suitability and flexibility in operation or strengthen its business operational procedure 3. Increase efficiency and capability in generating income from its assets 4. Build a long-term financial stability
3. Respond to Demands of All Groups of Customers	<ol style="list-style-type: none"> 1. Leverage satisfaction and attachment of all groups of customers 2. Maintain 'high value' customer base
4. Increase Business Values for Organization to Enhance Capacity Level in Competition	<ol style="list-style-type: none"> 1. Administration roles, regulations and operational plan for PEA and its affiliates for relevant business 2. Market expansion to other nations in the region 3. Investment policy and suitable portfolio mix in various situations that can general incomes according to the goals
5. Drive Forwards the Organization to Become More Modernized with Human Capital, Digital Technology and Innovation	<ol style="list-style-type: none"> 1. Leverage personnel's potential development to serve its main business and other relevant businesses 2. Develop digital technology to have a standard, a stability and a security to serve the business growth 3. Leverage roles of innovation to a working process development and commercial expansion.

Strategies

Strategy 1 : Encourage the organization to have a sustainable growth according to the framework of SDGs and a good practice guideline of the DJSI framework. This can be made by focusing on analysis and driving factor plan to gear towards a sustainable organization, including communications and a use of the aforementioned driving factors to implement a work plan for the organization. This can be achieved with the key three - dimension objectives:

1. Economic dimension - respond to the government policy by focusing on energy strategy to serve the national growth. The organization must maintain its capacity for economic wealth.

2. Social dimension - build a good relations with all stakeholders and those involved to ensure that all have a good quality of life and social well-being

3. Environment dimension - responsible for and focus on environmental wellness

In addition, this strategy also aimed at developing PEA to become a sustainable organization by incorporating international standard to be used in its administration and management with standards of the ISO 26001, UN, SDGs and DJSI to promote corporate social responsibility activities with communities and environment.

Strategy 2 : Focus on stakeholders by responding to and maintaining a good relationship with all parties of stakeholders. This can be a foundation for the organization to grow sustainably by focusing on serving their demands, both inside and outside the organization and by enhancing their satisfaction and attachment and promoting efficient use of energy and its conservation. This shows how the organization has responded to the government policy with measures for electricity power producers and service providers to encourage services or electricity users to become more efficient according to the Energy Efficiency Resource Standard (EERS)

Strategy 3 : Lead electricity distribution and sale in the region with focus on the importance of increasing capacity for efficient coverage of electricity distribution and sale systems. This can help develop electricity system and a power station construction to enable a sufficient, stable and reliable power distribution that can serve increasing demands, resolve problems in operation and maintenance, reduce loss in distribution and sale systems, and improve and connect electricity distribution system in the business areas, industrial zones and industrial estates and other key areas. The systems will help serve an expansion of economic development zones and strategic areas of the country to ensure that a power infrastructure is thorough and sufficient with a good quality. In addition, this will help develop Smart Grid network - an electric network using information and communications technology to manage power production control, transmission and distribution that can serve an electric connection system from an alternative Distribute Energy Resource (DER) which is clean and widespread.

Strategy 4 : Manage and allocate assets with financial stability. We intend to be an organization with efficient asset management and allocation with focus on a development of asset management system to increase efficiency in asset use for the organization's operation, reduction of operational costs, maintenance costs, and increase of the organization's financial returns.



Strategy 5 : Modify the organization’s structure with agility and response to business needs by benefiting from its alliances, and giving an importance on an improvement of streamline work process with digital technology. This is to ensure that the organization can be operated with flexibility, agility and respond to the needs of customers very well. A business structure analysis for the organization’s streamline work process is needed with analysis, improvement of conditions and indicators in each process. This strategy requires the organization to design and develop work and operational processes with flexibility and be in line with the organization’s visions, strategies and objectives.

Strategy 6 : Build customers’ attachment with focus on the study of factors and levels of needs and expectations in each group that has effects on customer’s satisfaction. This information analysis can be made with a survey to study about customers and the market, and summarized with recommendations for an operational improvement for the organization. In addition, a digital technology system can play a key role to support PEA’s next steps in the “service reform and efficiency in customer service” by emphasizing an integrated customer data and analytics , and a service strategy designation in each group of customer. A leverage of customer service with digital technology, including digital equipment and technology can support a staff operation and increase accessible channels for customers in products and services, and other PEA’s information.

Strategy 7 : Maintain high-value customer base and improve customer’s service with given comments to enhance all customer services for a sustainable relationship building with them. This can be strategically made for each group of customers with an integration of electricity system database and customers’ comments within a unit. The information can be used in planning electricity system development by each group of customers such as households, industry, commerce etc., including a development of customer relations management system to support customer service with increased efficiency and to build customer’s satisfaction to achieve PEA’s objectives. A process to look after key account customers is also needed to be improved with specific responsible persons and communications manuals for staff to be reviewed, monitored and evaluated continually.

Strategy 8 : Look for investment opportunities for related businesses with focus on investment promotion/joint ventures and business development in preparation for changes in electricity business. Currently, a structure and technology of electricity system are changing and are more focused on mission and roles specification with clear short-term and long-term directions of its affiliates (PEA ENCOM International Co., Ltd.), including operational strategies, positioning strategies and goals, both in the concrete and abstract forms to increase efficiency for operational management and enhance the organization’s performance. Due to a fast transformation of technology and structure of electricity industry, PEA’s directions for business operation needs to be adapted with more agility and responsive to changing business environment and market competition, By doing so, PEA continues to generate revenue and develop more sustainably. In addition, PEA is committed to review the Act, laws, regulations and principles that can serve its business operation with other agencies, and support legal practices, rules and regulations, policies and standards both locally and internationally.

Strategy 9 : Promote human capital’s management and potentials with focus on strategic Human Resources Management (HRM). PEA will develop its human management with efficiency and effectiveness to enable the organization to achieve its objectives with focus on competency development as a tool to connect the organization’s vision, mission, strategy and tactics with HRM. By doing so, PEA can analyze



key characters for staff at each position and prepare them to be ready to serve its key business and other business involved in the future, including their increasing capacity and potentials to be able to response to fast changes in technology and electricity industry. As a result, PEA staff needs to have knowledge and be skilled with technology, innovation, and adaptable to any emerging changes. PEA focuses on knowledge management and its process, starting from key knowledge identification which is important to its current and future business operation, emerging knowledge collection, both explicit and tacit knowledge, knowledge dissemination and sharing among departments/divisions/units to enable an efficient and effective improvement for the organization's administration.

Strategy 10: Promote and develop capacity with digital technology for digital transformation. This strategy focuses on a development of capacity in digital technology which is improved in 3 key dimensions as followed:

- Digital Service - develop digital technology to improve efficiency for customer service with a database development, customer information analysis system, and an improvement of communication channels and customer service via digital channel
- Digital Operational Excellence - modernize a technology of electricity system with Smart Grid, focus on interoperability of communications between data and technology and apply digital technology to improve efficiency of work process to be faster and more responsive to customer's needs and expectation
- Digital Business - Use of digital technology to boost efficiency of products and current service that can bring about new product design and new services with new platform and business models in the future

Strategy 11: Promote a sustainable and secured digital technology with strategy to create more safety, stability and confidence for its administration with digital technology for all stakeholders. This is a basic factor to help drive the organization with a digital utility, standard, privacy protection, and cyber security by focusing on strengthening safety and stability of the information and communications in order to build confidence among users in communications and online activities, and promoting and developing a digital technology management to have a standard in operation, management and services. In addition, IT governance will be supported for use seriously to improve a decision making process and digital technology management of the organization. By doing so, PEA's digital technology management will be efficient and developed with international standard with tools and various standards that are in line with the organization's strategy.

Strategy 12: Develop Corporate Innovation System (CIS) with emphasis on a systematic innovation, starting from a system creation, a set-up of direction and innovation management policy, roles of leaders and personnel/innovation agency, a specification of innovation strategy, including issues about structure and innovation management process, ways to benefit from it, knowledge management for innovation, organizational and personnel behaviors and cultures, a resource promotion/support and results from innovation development. The innovation process will be a production innovation, service innovation, organizational process innovation, business innovation or innovation in other forms to increase efficiency for administration and sustainability for the organization to gain profits from its core business. In addition, it covers a new innovation creation in response to customer's demands and/or market opportunities of PEA's businesses involved.





Situation Analysis for PEA's Power Distribution

Electricity Power Provision

In 2018, PEA purchased power from various power production sources and produced its own power with a total of 142,296.82 million units, which was risen by 1.97% from last year. This purchase was made from EGAT for 131,861.40 million units, the Department of Alternative Energy Development and Efficiency (DEDE) for 103.26 million units, the Very Small Power Producers (VSPP) for 10,131.30 million units, Solar PV Rooftop producers for 95.89 million units and PEA's dams and other islands for 104.97 million units.

Power Distribution

PEA distributed power in 2018 for a total of 134,673.89 million units or an increase of 1.72% from that of last year. This was lower than its project target of 1.95% (according to a forecast set for September 2018). The residents were expanded by 2.38% from due to cold weather in early of 2018 and prolonged rainy seasons (May - October 2018). However, most areas faced a hot weather at the end of 2018, the same period as of last year, including the Football World Cup, Asian Games, and the news report about Tham Luang - Khun Nam Nang Non Cave. For commercial group, the power distribution was expanded by 3.22% due to an expansion of hotels and shopping malls according to an increase of foreign tourists and a rising consumption of goods and services in the country which included world and Asian sport competitions and news reports about the cave rescue of "Moo

Pah" football team. For the industry group, the power distribution was expanded by 0.47% from exports (about 70% of the whole production sector) which was low due to the US-China trade war, a loss of automotive clients to SPP for captive power and energy saving groups. For the other groups (non-profit organizations) that consume electricity for water pumping for agriculture, temporary power and free electricity, it was expanded by 3.98 from the increased demands for power of street lights and public electricity and water pumping for agriculture.

Power distribution classified by regions

- **Northern region** accounted for 14.41% of the total power distribution or was expanded by 1.59% from that of previous year. PEA's region 2 (North Region) had the highest expansion of 2.36%
- **Northeastern region** accounted for 16.03% of the total power distribution or was expanded by 2.45% from that of previous year. PEA's region 3 (Northeastern region) had the highest expansion of 3.14%
- **Central region** accounted for 52.37% of the total power distribution or was expanded by 0.98% from that of previous year. PEA's region 3 (Central region) had the highest expansion of 2.49%
- **Southern region** accounted for 17.19% of the total power distribution or was expanded by 3.43% from that of previous year. PEA's region 1 (Southern region) had the highest expansion of 3.94%



Power distribution classified by level of voltage

It can be divided into 5 levels of voltages as followed:

- **230 kV** : There is only one electricity user - G Steel Co., Ltd. (Public) which operated a steel business in Rayong. Its power distribution accounted for 0.14% of the total power distribution with a drop by 23.61% from that of last year.

- **115 kV** : The power distribution accounted for 18.77% of the total power distribution with an expansion of 0.80% from that of last year.

- **69 kV** : There is only one electricity user - Goodyear (Thailand) Co., Ltd. (Public) in Pathum Thani which accounted for 0.02% of the total power distribution with a drop by 13.63% from that of last year.

- **22 - 33 kV** : The power distribution accounted for 50.01% of the total power distribution with an expansion of 1.30% from that of last year.

- **Below 22 - 33 kV** : The power distribution accounted for 31.07% of the total power distribution with an expansion of 3.13% from that of last year.

Power distribution classified by power tariff

Power distribution unit by power tariff for 2018 was expanded from that of last year for a few rates: households were expanded by 2.38%; small-sized enterprises for 2.40%; medium-sized enterprises by 2.83%; large-sized enterprises by 0.51% specific businesses by 3.01%; non-profit organizations by 6.43%; water pumping for agriculture by 22.39%; temporary power use was dropped by 3.57%; backup power was expanded 41.11%; interruptible rate by 0.59% and free-of-charge electricity by 4.63%.

Power distribution classified by customer groups

This group is divided into 4 groups as followed:

- **Households** accounted for 23.82% of the total power distribution which was expanded by

2.38%. In 2018, rainy season arrived early and was prolonged than usual (May - October 2018), but at the year end it was hot with an average temperature of 1.20 degree Celsius at almost all areas. In addition, there were other external factors contributing to an increased consumption of power such as the World Cup, Asian Games and the news reports about the cave rescue at Tham Luang-Khun Num Nang Non. As a result, the public increasingly followed these events via TVs, smartphones and tablets.

- **Commercial group** accounted for 25.52% of the total power distribution and was expanded by 3.22%, in particular the hotel and shopping mall groups with an increase rate of 3.36% and 2.77% respectively. The main factor was an expansion of tourists from 35.59 million people in 2017 to be 38.28 million people in 2018 or expanded by 7.54%. In addition, the national consumption goods and services was also risen, especially during the world and Asian sport competitions and the follow-up of news reports cave rescue of 13 boys and football coach from Moo Pah team at Thum Luang, Chiang Rai.

- **Industry group** accounted for 47.60% of the total power distribution and was expanded by 0.47% due to a drop of manufacturing sector's expansion at a rate of 0.43%. The main reasons were derived from an intensifying US-China trade war during the last half of 2018 and industry group shifted to purchase power from the SPP more. In 2018, there were about 46 customers with a power distribution of 888.23 million units, an increase from that of last year for 41 customers with 758.60 million units.

- **Others** (those from non-profit organizations, water pumping for agriculture, temporary power use and free-of-charge electricity groups) accounted for 3.06% of the total power distribution which was expanded by 3.98% from increasing power use of hospitals, local administrative organizations, sanitation services, schools, religious group and power use for lighting such as street light, and prolonged public lighting during cloudy and rainy periods.



Power distribution classified by economic activities

PEA has divided large power users according to Thailand Standard Industrial Classification (TSIC) into 10 groups. In 2018, manufacturing sector was ranked the highest for power use, which accounted for 65.49%, followed by sales and hotels for 15.00%, social services for 6.91%, and agriculture for 4.79%. The total power use of these 10 units was expanded from that of last year by 1.42% from high demands for electricity use in the following groups:

Manufacturing group was increased only by 0.43% from that of last year with an electricity use in key industry groups as followed:

- **Food** dropped by 0.16% with the top three electricity use in the following groups: 1) rice mills declined by 1.03% due to a reduction of rice plantation and production and a promotion of corn plantation by the government; 2) tapioca starch factories decreased by 12.05% due to a shortage of raw tapioca crops; 3) canned food production dropped by 0.73% due to a decreased manufacturing for exports for specific food such as prawns and canned crab, and canned pineapples because there were no enough materials.

- **Steel** surged by 5.21% due to an increased expansion of steel foundry by 25.71% and primary industry for non-steels by 10.26% according to growing volumes of construction in the country.

- **Electronics** grew by 2.76% from a manufacturing of electronics equipment, radios, televisions and communications equipment which was resulted from increasing demands of electronics goods in the global markets.

- **Automotive** was expanded only 0.19%. The figure was differed from the country's automotive production volumes which grew by 5.59%. The main factors came from a loss of customers operating an automobile assembly business and other automotive businesses to SPPs, energy production for their own use and energy conservation.

- **Plastics** expanded by 6.84% from a production of plastic containers and other plastic products which expanded by 3.64% and 8.04% respectively.

Sales and hotels expanded by 4.73 from increasing numbers of tourists and visitors to Thailand. This is in line with increased power use by hotels and shopping malls.

Social services expanded by 2.24% from power use for lighting such as street lights, public lights. This is in response to power use for non-profit organizations which are expanded by 6.43%.

Agriculture grew by 2.70% for power use in livestock, agricultural services, fishery, crop plantation, animal husbandry, fruit and vegetable plantation due to increased rains.

Losses

In 2018, PEA faced a power loss in its distribution system for 7,622.93 million units or 5.36%, which was more than its targeted rate of 251.95 million units or 0.18% (a targeted rate at the 5th level at 5.18%). The loss was increased by 2.24% when compared with that in 2017 at 5.12%. This is because major power users shifted to use SPP service or produce their own electricity. As a result, a ratio of using high-voltage power was reduced whereas a volume of power purchase from VSPS was increased and an average temperature rise was a bit higher than that in 2017. The figures below can display the power loss in each region:



Northern region
Loss Percentage

7.17



Northeastern region
Loss Percentage

6.88



Central region
Loss Percentage

3.95



Southern region
Loss Percentage

6.57

A Number of Power Users

In 2018, PEA had a total number of power users for 19.77 million people which was increased from that of last year for 0.41 million users or 2.11%. The central region had the highest expansion rate of 2.84%, followed by the northeastern at 2.14%, the southern and northern regions at 1.85% and 1.57% respectively. The figures of power users can be classified into the following groups:

- **Households** expanded by 2.04% or was equal to 88.27% of all the total power users
- **Commercial group** expanded by 1.91% or was equal to 8.59% of all the total power users
- **Industry group** expanded by 2.98% or was equal to 0.20% of all the total power users
- **Others** (non-profit organizations, water pumping for agriculture, temporary power use and free-of-charge electricity) expanded by 4.69% or was equal to 2.94% of all the total power users

Forecast of power distribution units in 2018

Although power distribution in 2018 grew only by 1.72%, which was below its load forecast rate made by the Working Group for Demands for Power Forecast at 1.95% of expansion (Load Forecast as of September 2018) due to a decreased demands for electricity use affected by a trade war, there remained no adjustment for load forecast figures by the Working Group. In 2019, it was expected that PEA's power distribution would grow by 3.82% with an expectation for several positive factors as followed:

Positive factors:

- **Political situation**

An election in March 2019 will make the political situation more stabilized and have a better direction. This can build more confidence among investors, in particular the country's economics, and influence them for any additional investments.

- **Tourism**

The country's tourism will continue to grow well with a forecast for an increase of 40 million tourists in 2019. This is because Thailand is a destination hub for global tourists. As a result, power use for hotels, resorts and service sector, which are perceived as engines of growth, can be expanded.

- **Technology**

In 2018, a market value for e-Commerce is expected at 3.2 trillion baht with an expansion of 14.04%, an e-Payment development and an increased competition for logistic technology. In 2018, there will also be a huge development of big data/Artificial Intelligent (AI) and 5G to support and increase online business operation. Producers and consumers can gain better access to in-depth data that serve their demands. This can thoroughly promote commerce, investment, tourism and economics in the country.

- **Weather conditions**

It is forecast that in 2018 El Nino can happen with effects on specifically hotter weather. As a result, electricity use for cooling machines and production of air-conditioners and ice machines can be increased.



- **Industry**

There will be many aspects of right benefits for an investment in EEC:

- a tax exemption for legal persons
- an import tax
- Subsidies for investment expenditures
- Permission to have a land ownership for a promotion of enterprises
- Rights for a rental of State Properties
- Income tax rates for ordinary people for 17%, the lowest in ASEAN

- A one-stop service
- A five-year working visa to attract investors, experts and scientists from overseas.

This has already influenced many leading firms to show their interests for investment. Take for example, the following companies:

- Cluster of modernized automotive industry such as Tesla, Shanghai Motor, BMW, Suzuki, Mercedes-Benz
- Cluster of transport and aviation industry such as Airbus, Boeing and Tianjin
- Cluster of digital industry such as Lazada, Alibaba and IZP Group

Negative factors:

- **Policy Supporting SPP Cogeneration**

An increasing support for private sector to play a bigger role in power production for distribution had caused PEA to lose more of PEA's customers to SPP. Mostly, these are customer in industry sector which had a high volume of electricity use. As a result, the electricity sale by PEA could be affected and reduced as a whole.

- **World Economics**

The US-China trade war can still happen after the G20 Summit in Argentina. A postponement of increased tariff measures for imports of goods between the two countries for another 90 days could affect the global demands to be further delayed. This could cause a wide and continuing

impact on goods production. In addition, a potential increase of interest rate of the Federal Reserve System (Fed) will increasingly cause investment funds to be flowed out of Thailand.

Political situations of many European countries remained unclear with unresolved problems such as the unresolved Brexit of UK from the EU, and ongoing yellow vest protesters in France

In addition, steel prices that were reduced in China and Asia are likely to be more competitive with an export of the Thai steels. This is because if there were influx of steels in the market, the imported steels would be cheaper than those steels sold in Thailand.

- **Thai Baht/Thai Currency**

The Thai currency that is stronger could be a risk factor for our exports. This is because products for export from Thailand will become more expensive and there could be more imported products from overseas which are less expensive, in particular steels. This could cause a trade deficit for Thailand as a whole and affect other entrepreneurs who are incapable to have a price competition with others due to high investment costs.

- **Household Sector**

In 2018, household debts were risen, mainly due to housing and automobile loans. As these debts were a long-term loan, couple with an increasing costs of living, it was very contrast with general incomes which grew very little. As a result, there could be a problem of non-performing loan in the long term. In addition, the household debts per national GDP were increased by 77.5%. This was considered very high.

- **Natural Disaster**

The changing climate was likely to affect the efficiency of power distribution, especially storms which could cause damages on the distribution system for PEA offices not being able to distribute electricity as usual.

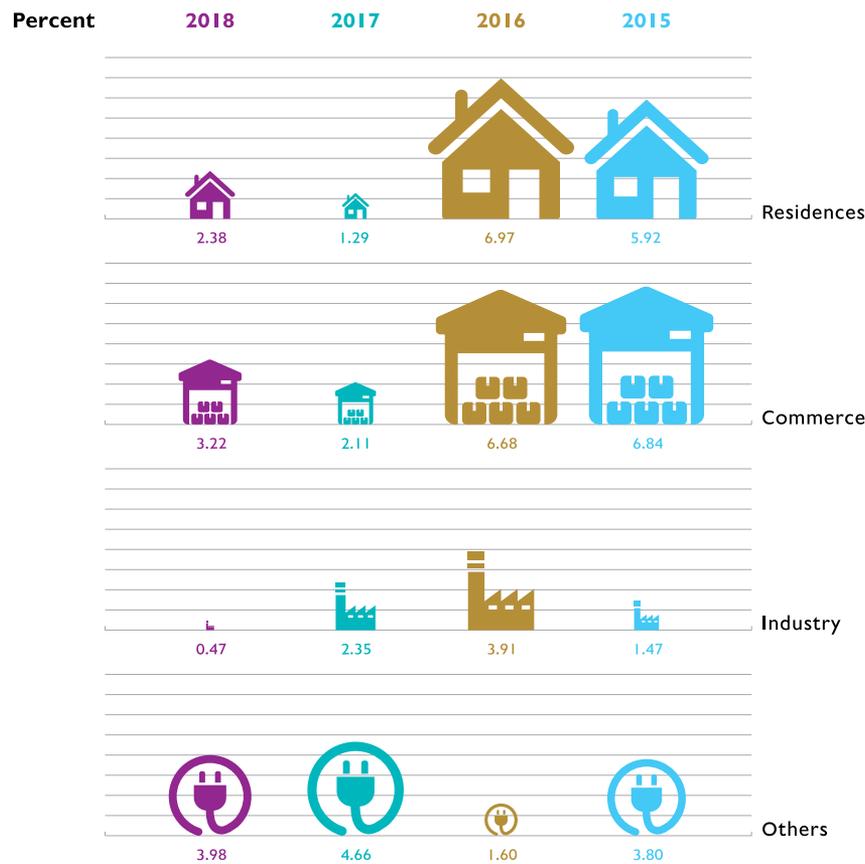
A Comparison of Power Distribution from 2015 - 2018 : Customer Groups

Customers	Electricity Unit (Million Units)				Rate : Increase - Decrease (%)			
	2018	2017	2016	2015	2018	2017	2016	2015
Residences	32,078.34	31,332.93	30,934.14	28,919.32	2.38	1.29	6.97	5.92
Commerce	34,369.81	33,299.22	32,611.90	30,570.17	3.22	2.11	6.68	6.84
Industry	64,108.96	63,809.36	62,344.56	59,999.45	0.47	2.35	3.91	1.47
Others	4,116.77	3,959.35	3,783.05	3,723.49	3.98	4.66	1.60	3.80
Total	134,673.89	132,400.86	129,673.65	123,212.43	1.72	2.10	5.24	3.86

A Comparison of Power Distribution from 2015 - 2018 : Customer Groups



Increase (Decrease) Rate Power Distribution from 2015 - 2018 : Customer Groups

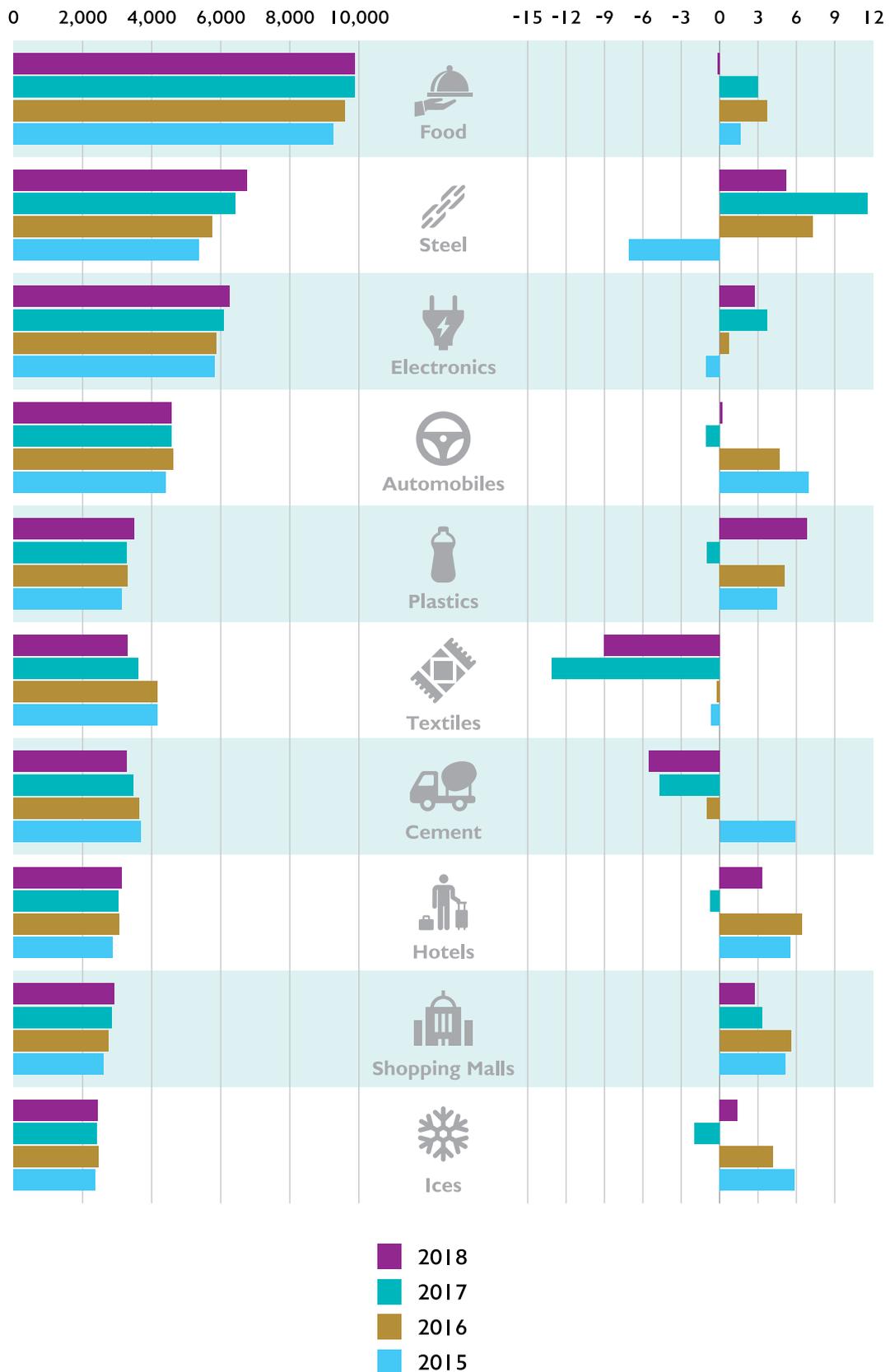


A Comparison of Power Distribution from 2015 - 2018 : Top 10 Activities

Types of Business	Units of Power Distribution (Million Units)				Increase Rate - Decrease (%)			
	2018	2017	2016	2015	2018	2017	2016	2015
Food	9,875.44	9,891.64	9,603.09	9,259.27	(0.16)	3.00	3.71	1.67
Steel	6,755.70	6,420.86	5,756.43	5,365.07	5.21	11.54	7.29	(7.09)
Electronics	6,250.80	6,082.98	5,863.31	5,821.99	2.76	3.75	0.71	(1.06)
Automobiles	4,574.20	4,565.71	4,614.70	4,407.64	0.19	(1.06)	4.70	6.99
Plastics	3,490.11	3,266.61	3,299.22	3,139.22	6.84	(0.99)	5.10	4.48
Textiles	3,292.59	3,620.01	4,168.41	4,177.69	(9.04)	(13.16)	(0.22)	(0.65)
Cement	3,276.12	3,468.46	3,638.28	3,675.90	(5.55)	(4.67)	(1.02)	5.90
Hotels	3,138.45	3,036.38	3,058.41	2,872.87	3.36	(0.72)	6.46	5.53
Shopping Malls	2,920.31	2,841.68	2,749.96	2,604.94	2.77	3.34	5.57	5.13
Ices	2,444.97	2,411.74	2,460.60	2,361.45	1.38	(1.99)	4.20	5.88

A Comparison of Power Distribution from 2015 - 2018 : Top 10 Activities

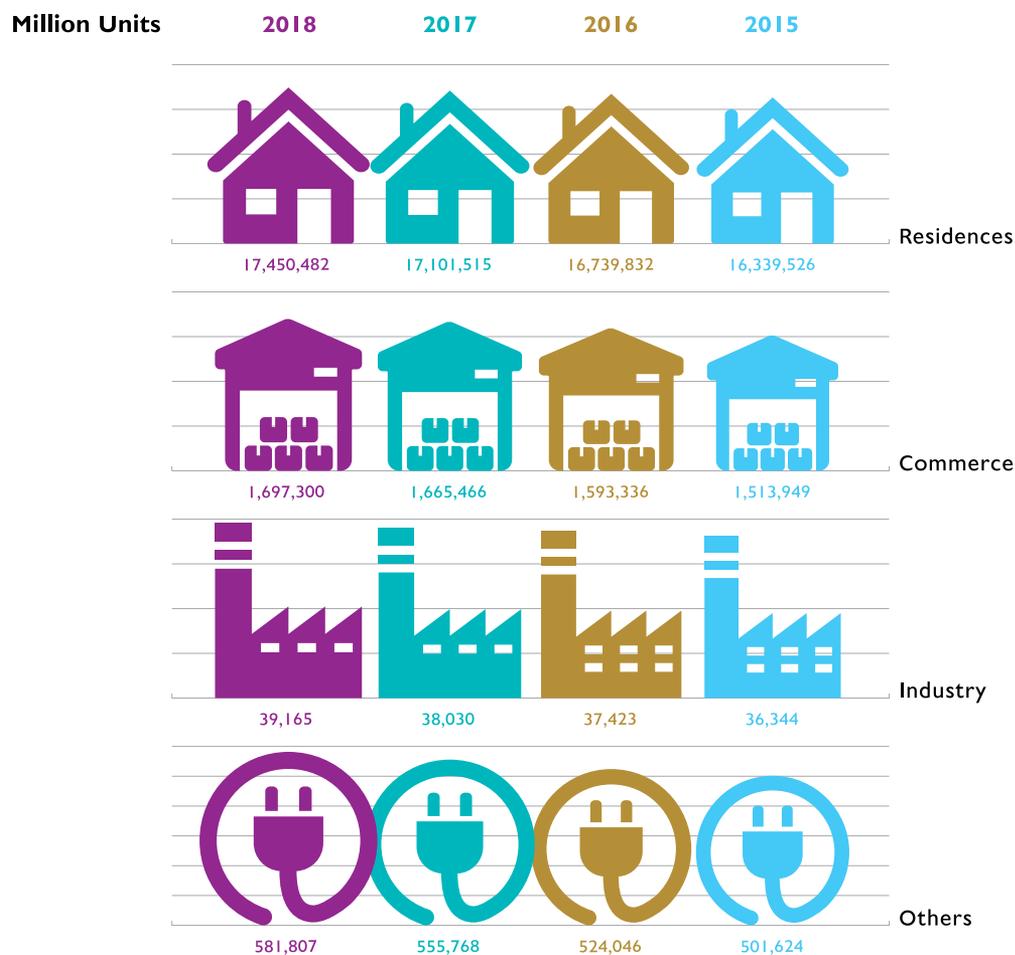
Increase (Decrease) Ratio Power Distribution from 2015 - 2018 : Top 10 Activities



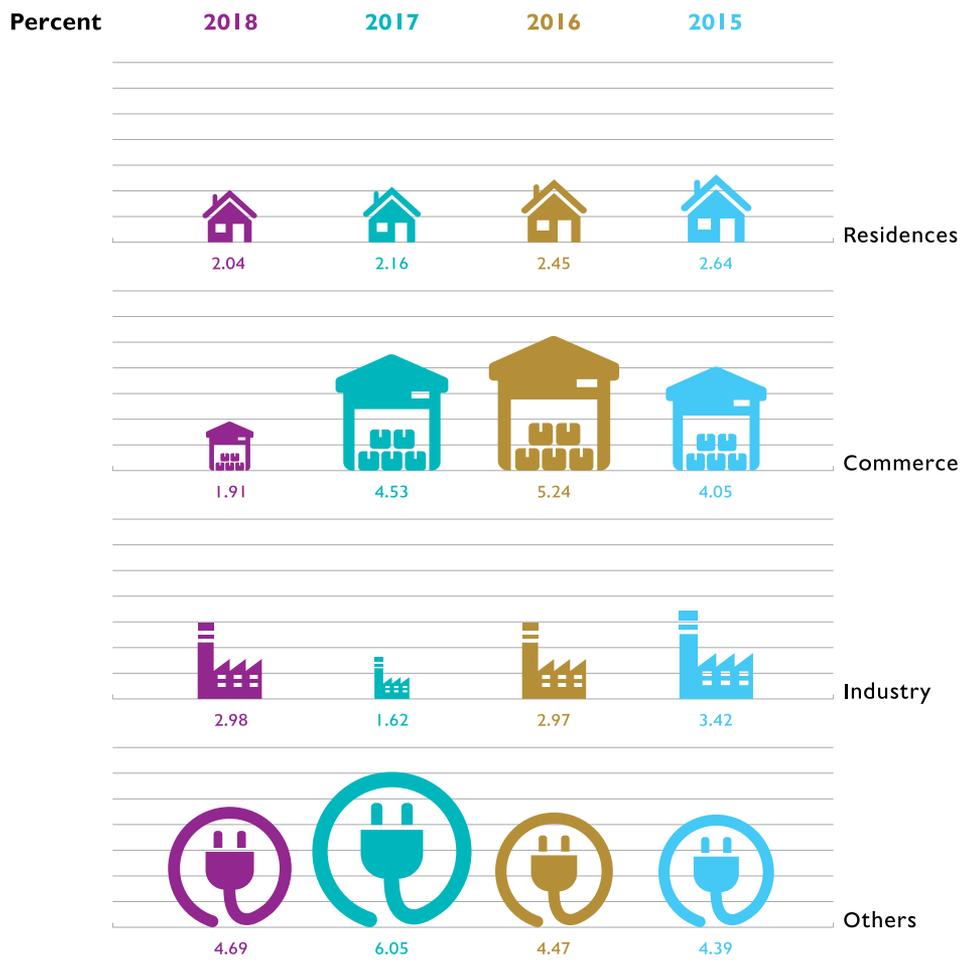
A Comparison of Power Users from 2015 - 2018 : Customer Groups

Customers	Electricity Unit (Million Units)				Rate : Increase - Decrease (%)			
	2018	2017	2016	2015	2018	2017	2016	2015
Residences	17,450,482	17,101,515	16,739,832	16,339,526	2.04	2.16	2.45	2.64
Commerce	1,697,300	1,665,466	1,593,336	1,513,949	1.91	4.53	5.24	4.05
Industry	39,165	38,030	37,423	36,344	2.98	1.62	2.97	3.42
Others	581,807	555,768	524,046	501,624	4.69	6.05	4.47	4.39
Total	19,768,754	19,360,779	18,894,637	18,391,443	2.11	2.47	2.74	2.80

A Comparison of Power Users from 2015 - 2018 : Customer Groups



Increase (Decrease) Ratio Power Distribution from 2015 - 2018 : Customer Groups



Performance Report According to the Balanced Scorecard

In 2018, PEA's operation was conducted on the basis of balanced scorecard (BSC) in 5 areas comprising of Finance, Customer, Internal Process, Learning and Growth, and Society and Environment. The details can be summarized as follows:

Finance

PEA had total asset equaling 414,880 million baht, an increase of 17,044 million baht or 4.28 percent from 2017. The total revenue from electricity sales and other incomes was 499,315 million baht, an increase from 2017 of 16,352 million baht or 3.39 percent; total expenses were 475,650 million baht, an increase from 2017 of 22,763 million baht or 5.03 percent. The net profit accounted for 20,616 million baht, reduced from 2017 of 6,053 million baht or 22.70 percent.

As a result of the management to control the operating expenses, PEA significantly improved the financial indicators, CPI-X, according to the performance assessment agreements with the Ministry of Finance. Also, the capital budget disbursement goal was totally accomplished. PEA was able to disburse 31,208.69 million baht or 100 percent of capital budget disbursement goal at 32,445.57 million baht after cost-saving adjustment. In addition, PEA could disburse 100 percent in each quarter of the fiscal year.

Customer

PEA aims to provide customer with fast, quality and modern services beyond expectation. The results of implementing project plans emphasizing on electricity system development were as follows:

- PEA had 19,768,754 electricity users, an increase of 2.11 percent from 2017; and distributed 134,674 million power units, an increase of 1.72 percent from 2017.
- PEA could distribute electricity to rural residences for a number of 74,300 villages or 99.99 percent of the total villages nationwide and 21.74 million households or 99.78 percent of all households nationwide.

Internal Process

To respond to an increase of electricity demands, PEA has continually developed and improved power quality and reliability of its distribution system. This resulted in the improvement of the system average interruption frequency index (SAIFI) and the system average interruption duration index (SAIDI) for the year 2018 compared to 2017. The SAIFI was 3.81 times/customer/year. The figure was reduced from 2017 by 0.69 times/customer/year. Meanwhile, the SAIDI was 89.82 minutes/customer/year which was reduced from 2017 by 28.88 minutes/customer/year.

In addition, PEA has implemented modern technologies to enhance its operational efficiency, namely, PEA Map, which is used to locate a request for electricity use; an operational improvement to resolve electricity problems (e.g. blackouts) through the OMS (Outage Management System); GIS (Geographical Information System) systems. Supervisory Control and Data Acquisition or SCADA is effectively used to control real-time operation and monitor the progress of problem solving to ensure customers' satisfaction.

Learning and Growth

PEA has promoted its corporate culture of a sustainable learning environment where learning atmosphere for all employees is highly encouraged. Employees are driven to improve work processes and bring out new innovations by incorporating knowledge management system and information technology.

Over the past years, PEA has met with success in several areas: 1) a design study and a data center establishment; 2) a continuous survey project on studying factors affecting PEA employees' satisfaction and attachment; 3) a project development on succession plan for an executive; 4) a talent management system and 5) a development plan and an integration of knowledge management procedures, preparing the organization for creating a sustainable innovation in the future.

Society and Environment

PEA is determined to work according to primary missions with corporate social responsibility. In 2018, PEA has promoted activities to build awareness the importance to work in compliance with ISO 26000 corporate social responsibility standards. PEA requires every office to propel the PEA Corporate Social Responsibility Master Plan of 2017 - 2021 under the ISO 26000 Standard.

Over the past years, PEA has conducted a number of corporate social and environmental responsibility projects 1) The Project to Promote Clean Energy in Community Enterprises and Renewable Energy Use for Tourism and Security; 2) The Project to Recruit Staff and Workers with Disability According to the Article 33 of Persons with Disabilities Empowerment Act. 3) Green Office Project; 4) Safe Community Project Using PEA Electricity and 5) One District One Electrician Project.

In 2018, PEA set up PEA 4.0 policy to support the government's policy with a focus on "Develop People with Innovations and Develop Work with Technology" by implementing projects in seven areas:

-
- 1. Human Capital:** Drive all employees towards the digital era.
 - 2. Service:** Promote Service Excellence: Beyond Customer Expectation.
 - 3. Grid:** Strengthen grid security and technology towards Smart Grid.
 - 4. Asset Management:** Implement Enterprise Asset Management (EAM) to manage the lifecycle of PEA's assets.
 - 5. Innovation:** Support learning environment and knowledge exchange to produce inventions and innovations under PEA's brand.
 - 6. ICT:** Utilize ICT to support the development of Smart Grid with Internet of Things (IoT), Cloud Storage, Big Data management and Blockchain technology.
 - 7. Business Investment:** Cooperate closely with PEA ENCOM International Co., Ltd. with the effort to create new businesses such as Electric Vehicles (EV), Solar Rooftops, Smart Meters and Smart Homes, etc. in respond to the disruptive technology.
- In 2019, PEA will continue to carry out work plans and projects with the determination to become the leading electricity provider in the regional level by achieving a secure and stable power system and beyond expected service to further support the economic growth and improve the quality of life through the recognition of social and environmental responsibility.



Mr. Chayabol Thitisak
Chairman of the Board of Directors
Provincial Electricity Authority



Organization Performance



Performance Analysis Report

Management Discussion and Analysis : MD&A

PEA has committed to gear towards digital utilities to leverage its quality, standard, stability and reliability for its power distribution system and to be a customer-centric organization by focusing on building customer relationship and responding to the customer's demands to meet their expectation. PEA has also envisioned to offer a full service in energy power via digital platform by incorporating digital technology to increase efficiency for the existing work operation as well as develop new businesses.

Currently, an energy power industry worldwide is facing a transformation in all aspects of structure and business operation. New business entrepreneurs in energy power sector have emerged. The energy power business is now opening for a free competition whereas customer's expectations are higher for electricity network stability and other services. This is mainly due to a disruptive technology. Below are the three key transformation:

- 1. Electrification :** a changing mode for power energy use in transport sector and heat production from fossil to electricity power such as electric vehicles and heat pumps.
- 2. Decentralization :** there are more decentralization of electricity distribution system such as a distributed power generation, micro grid and prosumer
- 3. Digitalization :** More digital technology is applied to be used for electricity system such as a real-time communication and operation system, a smart meter, a smart sensor and automation system.

For Thailand, PEA is one of the organizations that are affected by this transformation. Thus, there are efforts to drive PEA in various areas such as a demand for quality increase and a reliability of electricity system, an increase of renewable energy to connect with PEA, an emergence of community power plants, energy saving technology and an efficient energy



consumption, an evolution of electric vehicle technology, and demands for charging station and energy storage. A structure of an electricity power industry will be changed from a power buyer to be prosumer (both producer and consumer). There will be an energy trading between customers known as peer to peer commerce. In addition, an artificial intelligence (AI) machine learning together with an incorporation of big data and data analysis will play a major role in developing customer services. As a result, a customer service form and a business operation will be altered. Gearing the organization towards a digital utility is, therefore, necessary.

These factors have offered an opportunity and a new challenge for PEA to make changes and develop the organization, improve its administration to become more efficient, develop new businesses and services in order for PEA to grow more sustainably, be capable of responding to changes in the electricity industry, customers' demands and expectations which are completely changed.

PEA has developed its work plan to be line with electricity forecast for increasing demands and changes in power industry according to the current and future investment plan in the next 3 years. There will be major development for its management and administration as followed.

I. Electricity System

I.1 Transmission and Distribution System Development Project, 2nd Stage

is aimed at developing an electricity system and increasing power distribution stations to ensure that power distribution is sufficient, stable, and reliable to serve more than 5,000 MW of rising electricity demands in 2024. In addition, the project is aimed at serving a connectivity of small power producers who are capable of buying as much as 2,900 MW of power according to the government policy.

I.2 Major cities power system development project, 2nd stage is aimed at enhancing the national stability and reliability of electricity system, reducing problems and obstacles in operation, maintenance and safety. This is an expansion of the 1st stage.

I.3 Agriculture electrification project, 3rd stage is aimed at expanding electricity current services in agricultural plantation, joint crop plantation and farmlands to support farmers' professional livelihood, develop and strengthen the grassroots' economy. Small farmers are encouraged to join the project and registered for enrolling in the project. Initially, a small number of farmers have insufficient qualities (non-registered farmers). Currently, PEA has done more public relations to attract interested farmers to have access to information and register themselves. Thus, the project has progressed well.

I.4 New rural household electrification project, 2nd stage is aimed at expanding electricity distribution areas for households to ensure all of the new households can use electricity according to the government's policy.

I.5 Smart grid development project in the Municipality of Pattaya, Chon Buri. It is aimed at technology study, design testing, its use and potential benefits from all aspects of smart grid before it will be expanded to cover other areas. The project is divided into two phases: 1st phase is for a smart meter installation and problem solving for smart grid and IT integration system, and 2nd phase is for a substation automation system installation to enhance the existing stations to be operated with more efficiency by using new technology at electricity station.

2. Digital Technology Management

2.1 A leverage of electricity system with digital technology

- **Smart grid project**
 - An installation project of advanced metering infrastructure (AMI) for independent power producers to expand progress and install of the AMI system for major electricity users to cover nationwide, to build confidence and satisfaction in reading electricity units accurately and fast, and to create a good image of PEA for an operational work with transparency and good administration.
 - An electricity system development project for micro grid at Mae Sarieng District, Mae Hong Son to develop electricity production and sale system with efficiency and reliability in the area. It is also aimed at enhancing quality of electricity system by providing power sources in remote areas which is shortage of energy, reducing losses in transmission and sale system in the remote distance, developing electricity system in the areas to have a capacity to serve smart grid technology, and supporting an increasing use of renewable energy according to the government's policy. In addition, the project is aimed at reducing greenhouse gas emission and carbon with an investment budget for 265 million baht for a period from 2017 - 2019. The main tasks involved are an installation of micro grid controller, battery storage and communication systems involved. The project is expected to be complete by 2019.
 - A development project for smart grid network, 1st stage is aimed at expanding its progress and developing smart grid infrastructure. It covers municipalities in major cities, according to the Smart City Development Plan for 4 regions and areas for VSPP installation. This can build confidence among electricity users in reading and monitoring information about electricity units so that they can administrate electricity consumption by themselves efficiently. In addition, the project helps increase efficiency in electricity planning, administration and maintenance of electricity system, and connects with VSPP to create more reliability and quality of the system.
- **A development work plan for GIS system, 3rd stage** is a map and electricity data making system with computer by adjusting business procedure involved with GIS to enable a database improvement and to increase efficiency in its operation, including the following tasks :
 - Electricity system planning, design and construction
 - Electricity disruption problem resolving
 - Electricity system maintenance
 - Electricity engineering system analysis

These can result in an increased stability of PEA's electricity sale system, fast and accurate service for the general public, a new form of service development, and a reduction of operational costs and investment costs for electricity system development. By doing so, PEA can save time-consumption and manpower with a risk support in customer services.



2.2 A customer connection with digital technology

- **PEA Smart Plus Application** PEA has developed a PEA Smart Plus application to enable electricity users to have access to its full online service and information checking via a smart phone or tablet by themselves. This helps facilitate the users with fast and a wide variety of service functions such as electricity bill payment, electricity bill calculation and warning when a due date is near, a request to use electricity, a complaint for any electricity problems, an installation of meter and PEA news. Users can download this application via either the iOS or Android operation system. There are more than 1.1 million downloads from users and increased satisfaction with the system.



1129 PEA call center is a channel to help facilitate electricity users and the general public. Its main objectives for the service are to be a center for 24-hour communications and information service, including an information request, a complaint for electricity problems and service, a SMS application, a complaint and recommendation acceptance and other fast and accurate services to help create good images and relations among PEA, users and general public. The call center is made according to the service level agreement (SLA) with a quarterly and annually customer satisfaction assessment report. Currently, 1129 PEA call center is in its 3rd operation (2016 - 2021).

1129 PEA Call Center is ready to serve customers daily throughout 24 hours, no exception for holidays. There are multi/cross-channels for the service.



**1129 PEA Call Center
At your service**



Call

Automatic
IVR Call



Chat

Online web
chat and chat
bot



Application

PEA Smart
Plus for any
electricity
problems



Social Media

Contact PEA
via email or
social media

- **PEA Voice of Customer (VOC) System** PEA has improved its CPN e-One Portal Service which has been in use since 2015 as a customer's voice message called PEA VOC system to enable PEA to analyze and manage customer's feedback fast. The system can record what a customer desire and his/her expectation, and then make a report and analyze the data with real-time system. By doing so, PEA can correct the customer's request directly and resolve his/her problem fast. It has resulted in an increased customer's satisfaction.

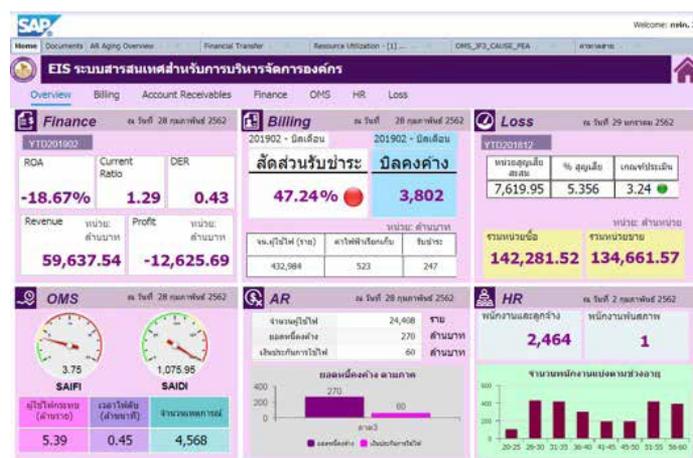


2.3 Modernization of the Organization

- **Paperless Meeting System (PLMS)** : PEA has developed the PLMS to support its data and information management via a smart device. There is no need to print out a report for a meeting. Meeting participants can review all documents from the meeting. Since the PLMS was operated from October to December 2018 PEA has been able to reduce more than 4 million sheets of paper.



- **Executive Information System (EIS)** : PEA has developed the EIS that can display data to facilitate senior executives for a decision making faster by using only one day. Previously, it may take 1 - 2 months for a report to be processed. In 2018, an additional system development was made with five more reports in response to the senior executives' request. The information reports were a financial report (a revenue compensation for primary profits of the electricity bill), a data for the use of energy and papers at PEA, a data for electricity problem's management, a data showing overall picture of values of electricity debts, and a data about rental of communications lines.



- **Risk Management Monitoring System (RMMS):** PEA has developed a RMMS to standardize and monitor the organization's risk management, and facilitate and enhance efficiency of risk management data inspection system by showing Key risk indicator, Risk Appetite, Risk Tolerance, Impact Likelihood and a condition of key risk indicator. The RMMS can also report progress of risk factors of PEA's annual administration with early warning system for any activities that do not achieve its target by automatically sending an e-mail to PEA's executives and those involved when any risk happens. By doing so, PEA can work according to the risk management plan.

2.4 Digital Infrastructure

- **Design and Installation of IP Core, 2nd Stage** is a communication system improvement for core layer to serve IP Network nationwide. This is to respond to and prepare for users' capacity expansion for an increasing IP access network in the future, and to enhance network reliability at all physical and logical levels, including an efficiency improvement of regional network management and an unlock of limitation for network management and bandwidth expansion from the SDH-TDM legacy which has high maintenance costs. In 2018 - 2019, PEA has planned to work on the project in the North, Northeast and the South first and will expand it to cover other parts in the following years.

- **Full HD VDO Conference** PEA has improved its conference by now using a Full HD VDO conference since May 2018. This system is more modernized with clear pictures and powerful voice system. It can be used at a meeting room via a computer and mobile phones. An evaluation report in 2018 showed that PEA could save costs for food and beverages, hotel accommodation, transport expenses for all meeting participants for an amount of 53 million baht. In 2019, PEA has planned to install additional systems at its offices nationwide.

- **Temporary DR Site Center** PEA was designated to be an organization with critical infrastructure level and the ISO 27001 standard for information technology security management during an emergency situation. It has started a construction of data center and disaster recovery site (DR Site) which will be complete by 2019. Thus, in 2018, PEA has hired a temporary DR Site center with the Cloud system for additional data storage work.

- **International ISO/IEC 27001:2013 Standard for Information Security Management System** PEA has incorporated the international ISO/IEC 27001:2013 for its information security management system with an ISO/IEC 27001:2013 certificate issued on 23 June 2017 with work scope covering critical infrastructure in information and PEA's Headquarters. In 2018, it expanded a request by applying for a certificate to cover its work in the region for Provincial Electricity Authority Region 1-3 (Northern Region) and Provincial Electricity Authority Region 2 (Central Region) on 26 March 2018 and was planned to cover all PEA's district offices by 2020.

As for the performance for 1129 PEA Call Center in 2018, there were 2,560,502 calls with a monthly average of 213,375 calls. This was the highest record than that of 2017 for 486,350 lines, of which May received the highest calls for 302,305 lines. For a customer's satisfaction, about 95.34% of users of 1129 PEA Call Center in 2018 were satisfied with the service.



There was the following development to increase efficiency of the service:

- An outbound service to report progress of unplanned outage of electricity via SMS or a call-back service, and planned outage of electricity via SMS.
- A call transfer from on-duty service staff's room to help fix unplanned outage via 1129 PEA Call Center, in case that any PEA on-duty staff is not available to pick up the line.
- A joint test for a disaster recovery plan (DRP) of software computer system for a main business (CBS) to ensure that 1129 PEA Call Center has a good potential to serve customers continuingly.

In 2018, PEA incorporated a technology called a non-voice service: chatbot to serve its customers with Chatbot Pilot : KeyFAQs to improve service channels and leverage its service for those with changing behaviors to use non-voice platforms more efficiently. This was in line with PEA digital's operation plan to have Chatbot as pilot project for the Call Center. It has rule based and can offer a joint service with an agent who assists in answering complicated answers.

3. Human Resources Management

3.1 Manpower Management

PEA is a customer-centric organization. It has ensured a sufficient number of personnel and improved efficiency for its manpower in electricity system operation. This is aimed at reducing system average interruption duration index (SAIDI), increasing reliability for electricity system and building customer's satisfaction.

3.2 Organizational Restructure

PEA has given an importance to organizational restructure to enable itself to perform missions at present and in the future. Thus, there are regularly a review and restructure of all units properly, a unit and duty transfer, an upgrade of units to have more flexibility at work. PEA officially announced a use of the new structure on 18 December 2018.



3.3 Performance Management

PEA has managed its performance by outlining a staff's performance assessment with standard procedures and indicators to ensure fairness and engagement with their employees, and use results of the performance assessment with compensation payment for the staff, a consideration for promotion and selection of those with high potentials, and a support for the staff for development.

3.4 Personnel Satisfaction and Engagement Leverage

To ensure that the staff work with satisfaction and are capable of performing a good quality of work for the organization continuingly, PEA has conducted an annual survey for personnel satisfaction and engagement with others at the workplace with an aim to use the results for an improvement and strategic planning for the organization to build a better workplace to bring about greater satisfaction and attachment among the staff. PEA do hope that it can result in a positive impact on the organization's performance as well as their customers.

3.5 Personnel Promotion and Development

PEA emphasizes the importance and values of its personnel for the organization to grow more sustainably. Thus, there is a policy to promote and develop personnel of all levels and all positions for technical knowledge and specifically organizational skills, organizational management and development of quality of life with morals and ethics.

In 2018, PEA has a policy to focus on personnel's capacity building development so that the organization has a high capacity to drive qualified personnel to work with happiness and commitment. It also aims at enhancing human capitals so that the organization can be developed sustainably and committ to move towards to become PEA 4.0. This can be done with a policy to "Develop Personnel with Innovation, Develop Work with Technology" by having its personnel as a key factor to drive PEA forwards. The organization has promoted various methods for personnel development, by focusing on continuous learning and encouraging its personnel to take part at and be responsible for self-development with individual development plan (IDP), covering executives and all levels of staff. There is a development form of 70:20:10 as part of the IDP. In addition, PEA has also focused on creating specialists in the field of engineering such as electricity quality, reliability of electricity system, electricity protection, a cut loss for electricity units and hotline service. These will help PEA prepare its staff to become more knowledgeable, skillful and experienced to serve the future policies, to create a forum for an expression of knowledge and experience, and to support its personnel to do research and develop staff's innovation. This is made with an academic forum, a contest, and workshops such as the PEACON & Innovation 2018 event, an Innovation and Artificial Innovation, a Contest for Quality Activities, an Operational Skill Contest, and a Selection of Outstanding Electricity Office, a PEA Standard Performance Day, a PEA Think Tank, and a PEA Pro Guru for Skill Development. Besides, PEA has promoted its staff to have a life-time learning with scholarships for a Master's Degree and PhD's studies, both locally and internationally, and to join a training course, either in Thailand or overseas. Last but not least, PEA staff is also encouraged to present academic papers at an international forum so that he/she can be well prepared and increase his/her potentials to serve any business changes and growth of PEA in the future.

3.6 Cultivation of Learning Culture

PEA has emphasized a capacity building for its staff to help the organization achieve ultimate purposes by incorporating skills and knowledge - “intelligence capital” into the organization’s development process for productivity, including new innovation. PEA realizes the importance of learning process for all staff and the organization.

Currently, PEA has set up some directions to promote additional learning and a knowledge exchange to improve a development process and innovation creation through knowledge and innovation management. It begins with a determination of body of key knowledge of the organization by considering customers’ voices, challenges and strategic advantages, executives’ policy, key work plans and special skills of the organization. Then, collect those bodies of knowledge and classify them into a form of e-document and general documents ready for dissemination through on-the-job trainings, workshops, information, communication and technology. PEA has a knowledge management assessment to measure level and use of information review. In addition, a PEA Think Tank center is established to provide the staff with space for knowledge exchange and discussion, and learning on specific issues that the organization is interested in. This helps integrate knowledge from both internal and external specialists into the organization and increase work efficiency that can be expanded to action more sustainably. For its performance in 2018, PEA could collect as many as 10,125 topics and attract about 6,698 staff to join its learning activities. More learning activities, including the PEACON & Innovation 2018 with a display of innovative work and quality activities, a selection of outstanding provincial electricity offices, a competition for skilled staff and a learning promotion between PEA and its external agencies and general public were held via a setup of PEA learning center. There were also a visit to meet electricity users and a seminar of electricity users, 1129 PEA call center, a knowledge sharing with communities, an academic conference, a seminar with other agencies, a cooperation among electricity agencies in ASEAN, a publication of manuals for knowledge transfer, and an ongoing academic cooperation. This has increased PEA’s knowledge base that can be used for its innovation creation in a more sustainably way.

4. Management of Materials and Supplies

4.1 Supply Administration

PEA has administered its supply management under the Procurement Act 2017 and the Ministry of Finance’s Regulations for Supply Management and Procurement 2017.

4.2 Development of Logistics and Supply Chain

This is a supply and materials’ system development to serve supply chain management with a system support development of supply chain, modern warehouse using radio frequency identification (RFID) and barcode together with warehouse management, and a material safety system management plan for three years (2017 - 2019). It is focused on electrical forklifts and a construction of roof structure at supply and material area to increase efficiency for supply management.

During January - December 2018, a total value of materials managed for its work is 15,658.92 million baht and a value of inventory materials is 9,427.95 million baht. There is a turnover rate of 1.66.





5. Services

5.1 Power-related services

PEA's major roles are to dispatch and distribute electricity, and serve electricity users by dividing its service into four regions : North, Northeast, Central, and South. Each region consists of 3 electricity districts. There are a total of 12 districts all together. PEA has set up electricity offices in 74 provinces nationwide, except those in Bangkok, Nonthaburi and Samut Prakan provinces which are responsible by the Metropolitan Electricity Authority. There are 946 centers to serve its customers nationwide.

PEA shops are set up at various shopping malls nationwide whereas a PEA Mobile Shop is aimed at serving its customers at major communities. PEA mobile application and an internet network of PEA Smart Plus are also created to serve its customers more quickly whereas 1129 PEA call center is created to provide the customers with automatic information via telephone, fax and SMS to ensure all problems and complaints are responded efficiently.

PEA focuses on efficiency and quick response to improve its customer service standard. There is an ongoing quality improvement, including a one-touch service by using modern technology to enhance its efficiency in a search for a location of electricity users, a PEA map, a power disruption fixing with OMS, GIS map and automatic SCADA system. As a result, PEA's monitoring system for power disruption can be made faster.

There is also an improvement with electricity bill with barcode system, an ATM bill payment, and an online complaint filing system linked population database at the Department of Provincial Administration with a smart card reader. These systems can create a better customer satisfaction by reducing costs and time-consuming process to have to wait for all manual documents to be made.

As for an online service, PEA has created a website : www.pea.co.th to be a channel for sharing information to the public. There are also PEA's e-services, consisting of an e-Payment and an e-Invoice to help facilitate the customers for bill payment and verification. In addition, the customers can follow up PEA's news, announcement, and information via social media tools as followed:

Facebook: <http://www.facebook.com/Provincial.Electricity.Authority>

Twitter: https://twitter.com/pea_thailand

5.2 Electrical Maintenance and Construction System Services

PEA has offered an electrical station maintenance and construction, electrical transformer system and electrical appliances for its users as a full service. These are vital for power distribution and sale process and can directly contribute to customers' satisfaction. It can be divided into five areas: a construction service, a maintenance service, an electrical equipment installation service, an equipment test service and a consultation service.

5.3 Electrical Engineering Service

PEA has provided its external customers, both government agencies and private sectors nationwide, with knowledge, technology, modernized tools, equipment and appliances together with experts with skills and experiences in electrical engineering and project management services. These are guaranteed with quality, quickness and reasonable prices to respond to customers' demands and satisfaction. The types of services are an electricity system design and consultation, an electrical system and station construction, an electricity system inspection and analysis, and an electricity appliance testing.

5.4 Information and Communication Services

A fiber optic leasing service with dark fiber and bandwidth is offered to three groups of customers: 1) operators who have expanded communication network; 2) power production plants/small power producers (SPPs) who have controlled and monitored a reliability of electricity distribution and 3) security groups, including the Office of the Permanent Secretary of Defense Ministry for the use of PEA's electricity network for resource sharing to reduce overlapped investment costs in renewable energy service.



Analysis Report : Financial Status



In 2018, PEA generated total revenue of 499,316 million baht, of which the main income was derived from an electricity sale for 483,478 million baht. Its total expenses accounted for 478,7000 million baht, of which the main expenses were from electricity purchase for 417,877 million baht. Its net profit was 20,616 million baht, which was decreased from that of 2017 for 6,503 million baht. This was due to the fact that the Electricity Regulations Commission had set up a compensation for income among energy-related agencies for about 14,496 million baht which was reduced from that of 2017 for 4,720 million baht. Then, ERC agreed to have PEA returned its electricity revenue for another 2,700 million baht to enable PEA's financial status to reach an agreed condition. As a result, PEA's net profits in 2018 were reduced.

PEA had a total value of assets for 414,880 million baht, which was increased from that of 2017 for 17,044 million baht or 4.3%. It was consisted of 106,005 million baht for revolving assets and 308,875 million baht for non-revolving assets. It was mainly an increase of lands, buildings and equipment worth about 10,181 million baht or 4.0%. Its total debts stood at 244,264 million baht, which was an increase from that of 2017 for 9,780 million baht or 4.2%, consisting of 75,596 million baht for revolving debts and 168,667 million baht for non-revolving debts. Its capitals for 170,616 million baht were increased from 2017 for an amount of 7,264 million baht or 4.5%

PEA applied for a domestic loan to invest for its work plans/ projects to support an increasing electricity demand, an enhancement of its efficiency and electricity security system, a reduction of loss in electricity system, and a landscape and environment preservation according to the government's policy. PEA determined directions to apply for loans from domestic sources in the Thai baht by mainly issuing government bonds. As a result, its foreign loans and domestic debts as of 31 December 2018 were 332 million baht and 71,247 million baht respectively or about 0.5% and 99.5% of all the total loan debts.

PEA's Structure Management Chart





PEA's Management Structure

Board of Directors

Governor

Office of Governor

Legal Office

Risk and Safety Management Department

- Internal Control Coordination Division
- Risk Management Plan Division
- Safety and Occupational Health Division

Governor Affairs Department

- Policy and Special Affairs Division
- Executives Affairs Division
- Processing and Relations Affairs Committee Division
- Good Corporate Governance Division

Legal Proceeding Department

- Juristic Acts Division
- Legal Consultants and Regulations Division

Litigation and Investigation Department

- Litigation Division
- Discipline and Investigation Division

Corporate Strategy and Development Group

Network and Service Group

Business Development Function

Engineering Services Department

- Transmission System Engineering Services Division
- Distribution System Engineering Services Division
- Maintenance Services Division

Business Development Department

- Strategy and Supplementary Business Development Division
- Strategy and New Business Development Division

Corporate Strategy Function

Policy and Strategy Department

- Strategic Planning Division
- Corporate Evaluation Division
- Corporate Management System Division

Power Economics Policy Department

- Power Economics Division
- Electricity Tariffs and Business Division
- Power Purchase and Cost Management Division

Planning and Power System Development Function

System Planning Department

- Project Planning Division
- Power System Analysis and Planning Division
- Power System Geo-Informatics Division
- Smart Grid Planning Division

Power System Research and Development Department

- Research Fund and Innovation Management Division
- Research Division
- Electrical Equipment Standard and Quality Control Division

Alternative Energy Promotion and Efficiency Department

- Alternative Energy Promotion Division
- Energy Efficiency Promotion Division

Engineering Function

Engineering Department

- Power System Standard Division
- Technical Specification Division

Civil Work Department

- Civil Work Design Division
- Civil Work Procurement and Construction Division
- Civil Work Service Division

Substation Work Department

- Substation Design Division
- Substation Project Management Division

Transmission and Distribution System Department

- Transmission System Design Division (Central)
- Transmission System Design Division (North, Northeast, South)
- Power System Management Division

Construction and Project Management Function

Substation Construction Department

- Substation Construction Division
- Substation Testing and Commissioning Division
- Construction Support Division

Power System Construction Department

- Power System Construction Division 1
- Power System Construction Division 2
- Concrete Product Division

Project Management Department 1

- Project Management Division 1A
- Project Management Division 2A
- Project Management Division 3A

Project Management Department 2

- Project Management Division 1B
- Project Management Division 2B
- Project Management Division 3B

Special Project Management Department

- Project Management Division 1S
- Project Management Division 2S

Operation and Maintenance Function

Power System Control and Operation Department

- System Operation Division
- System Management Center
- Power System Automation Division

Substation and Power System Maintenance Department

- Protection and Relay Division
- Substation Maintenance Division
- Power System Maintenance Division

Meter and Transformation System Department

- Meter Division
- Transformation Division
- Meter System Development Division

Generation System Maintenance Department

- Mechanical Service and Maintenance Division
- Generation System Control Division

Audit Committee

Internal Audit Committee

— Supervising
- - - Management

Audit Planning and Support Department

- Audit Committee Coordination Division
- Audit Planning and Development Division
- ICT Audit Support Division

Primary Process Audit Operation Department

- Production and Operation Audit Division
- Maintenance Audit Division
- Project Management and Construction Audit Division
- Customer Service Audit Division

Support Process Audit Department

- Financial and Accounting Audit Division
- Corporate Management Audit Division
- Human Resource Management Audit Division
- Procurement and Materials Audit Division

Supporting Group

Electricity Authority Function Region 1 - 4

Business Planning Department Region 1 - 4

- Customer Service and Engineering Division Region 1 - 4
- General Administration Division Region 1 - 4

Provincial Electricity Authority 12 Areas

Administration Division

Engineering and Service Department

- Engineering and Planning Division
- Construction and Project Management Division
- Customer Service Division

Operation and Maintenance Department

- Operation Division
- Maintenance Division
- Communication System Division

Accounting and Power Department

- Accounting Division
- Power Purchase Division
- IT System Division

ICT Function

ICT Planning Department

- ICT Planning Division
- Contact Center Division

IT Department

- Information System Design Division
- Computer and Network Division
- IT Standards and Security Division

Information System Development and Support Department

- Customer Service Information System Development Division
- Enterprise Management Information System Development Division
- Information System Support Division

Communications Network Department

- Communications Network Design Division
- Communications Equipment Maintenance Division
- Communications Network Management Division

Account and Finance Function

Budget Department

- Budget Division
- Budget Evaluation Division
- Financial Analysts and Fund Management Division

Accounting Department

- Accounting Division
- Managerial Accounting Division
- Asset Accounting Division
- Network Asset Accounting Division

Finance Department

- Finance Division
- Expenditure Control Division
- Taxation Division
- Revenue Division

General Service Function

Procurement Department

- Domestic Procurement Division
- Foreign Procurement Division
- Materials Planning Division

Supply Department

- Warehouse Management Division 1
- Warehouse Management Division 2
- Warehouse Management Division 3
- Warehouse Management Division 4

Administration Department

- General Affairs Division
- Service Division
- Printing Division

Corporate Social Responsibility Function

Public Relations Department

- Public Relations Division
- Corporate Communications Division

Corporate Social Responsibility Department

- Corporate Social Responsibility Plan and Development Division
- Corporate Social Responsibility Project Management Division

Human Resource Function

Human Resource Strategy Department

- Human Resource System Division
- Human Resource Management Division

Human Resource Development Department

- Personal Development Division
- Electric Vocational School
- High Voltage Training Center
- Technician and Hotline Training Division

Human Resource Service Department

- Welfare Division
- Medical Service Division
- Provident Fund Division

Manpower Structure and Personnel Expenditures

Manpower Structure

Number of Employee and Hired Workers by Function and Office in 2018

Unit : Employee

No.	Function/Office	Personnel	Wage Earners	Total
1	Governor	7	-	7
2	Office of Governor	180	16	196
3	Legal Office	113	2	115
4	Internal Audit Bureau	159	-	159
5	Human Resource	478	6	484
6	Accounting and Finance	342	17	359
7	Operation and Maintenance	488	38	526
8	Corporate Strategy	304	3	307
9	Planning and Power System Development	263	4	267
10	Corporate Social Responsibility	132	5	137
11	General Service	330	35	365
12	Construction and Project Management	505	77	582
13	ICT	329	4	333
14	Electricity Authority Region 1	5,978	1,226	7,204
15	Electricity Authority Region 2	6,985	1,409	8,394
16	Electricity Authority Region 3	7,153	1,740	8,893
17	Electricity Authority Region 4	5,598	1,284	6,882
18	Engineering	315	7	322
Total		29,659	5,873	35,532

NOTE: Currently, PEA has a total number of 101 personnel with disability and 18 wage workers

Personnel-Related Expenditures

Unit : Million Baht

Items	2018	2017	2016
Expenditures for Employee	26,692	27,155	26,529
Expenditures for Hired Workers	1,511	1,371	1,277
Total	28,203	28,526	27,806





PEA's Board of Directors 2018

Provincial Electricity Authority has prepared a report disclosing asset information and connected transactions for potential rich transactions for Provincial Electricity's Board of Directors to report to the public

Chairman of the Board of Directors

(8 August 2017 - Present)



Chayabol Thitisak

Period: 8 August 2017 - Present
Date of Birth: 28 April 1960
Position: Director General,
Department of Disaster
Prevention and Mitigation

Key work experiences:

- Deputy Permanent Secretary, Ministry of Interior
- Governor of Nakhon Sawan Province

Education:

- Master's Degree - M.D.A Western Michigan University
- Bachelor's Degree - Bachelor of Political Science, Chulalongkorn University

Members of committee at other organizations

- Chairman of the Board, the Market Organization
- Director, Tourism Authority of Thailand

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Surong Burakul

(A list of state enterprise committee 2018)

Period: 27 June 2018 - Present

Date of Birth: 15 November 1955

Position:

- Chairman of the Board, Expressway Authority of Thailand
- Advisor, Thai Listed Companies Association
- Advisor, Federation of Thai Capital Market Organization
- Advisor, The Securities and Exchange Commission, Thailand (SEC)
- Advisor, PTT Public Co., Ltd. (Public Organization)

Key work experiences:

- Chief Financial Officer, PTT Public Co., Ltd. (Public Organization)
- Chief Operating Officer, Infrastructure, PTT Public Co., Ltd. (Public Organization)

Education:

- Master's Degree - Business Administration, Cornell University, New York, USA
- Master's Degree - Engineering in Operations Research, Cornell University, New York, USA
- Bachelor's Degree - Bachelor of Science in Industrial Engineering and Operations Research, Syracuse University, New York, USA

Members of committee at other organizations

- Chairman of the Board, Expressway Authority of Thailand
- Director, Bangkok Industrial Gas Co., Ltd.
- Vice Chairman of the Board, The Thai Chamber of Commerce
- Chairman of the Board, Sakari Resources Co., Ltd., Singapore
- Director, 24m Technologies, Inc., USA
- Chairman of the Board, Tiger Energy Trading Pte. Ltd.
- Chairman of the Board, Global Power Synergy Public Companies Limited (GPSC)

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Yodphot Wongrukmit

(A list of state enterprise committee 2018)

Period: 8 August 2017 - Present

Date of Birth: 7 December 1959

Position:

Senior Executive Vice President, Corporate Management and Sustainability Development, Bangchak Corporation Public Co., Ltd. (Public Organization)

Key work experiences:

1. Senior Executive Vice President, Corporate Administration and Information Technology, Bangchak Petroleum Public Co., Ltd. (Public Organization)
2. Senior Executive Vice President, Marketing Business, Bangchak Petroleum Public Co., Ltd. (Public Organization)

Education:

- Master's Degree - MBA Middle Tennessee State University, USA
- Bachelor's Degree - Bachelor of Economics, University of the Thai Chamber of Commerce (2nd Class of Honors)

Members of committee at other organizations

Director of Bangchak Greenet Co., Ltd.

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)

Directors



Danucha Pichayanan

(A list of state enterprise committee 2014)

Period: 8 August 2017 - Present

Date of Birth: 5 August 1970

Position: Deputy Secretary General, the Office of the National Economics and Social Development Council

Key work experiences:

- Policy and Plan Advisor, Office of the National Economics and Social Development Council
- Director, the Bureau of the Analysis of Government's Investment Project
- Senior Professional Policy and Plan Analyst

Education:

- Master's Degree - M.S. Engineering Management, George Washington University, USA
- Bachelor's Degree - Bachelor of Engineering, Chulalongkorn University

Members of committee at other organizations

* None

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Yongyutdh Khomase

(A list of state enterprise committee 2018)

Period: 8 August 2017 - Present

Date of Birth: 16 November 1955

Position: Retired Government Official

Key work experiences:

- Director, Bureau of the Budget Area 6, Bureau of the Budget
- Director, Evaluations Division 2, Bureau of the Budget

Education:

- Master's Degree - Master of Public Administration, National Institute of Development Administration
- Bachelor's Degree - Bachelor of Economics (Finance), Ramkhamhaeng University

Members of committee at other organizations

* None

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Patdikom Wongsuwan

(A list of state enterprise committee 2016)

Period: 27 June 2018 - Present
Date of Birth: 23 March 1956
Position: Retired Government Official

Key work experiences:

- Director-General, Department of Corrections
- Deputy Director General, Department of Corrections
- Prison Warden, Khlong Prem Central Prison

Education:

- Master's Degree - Master of Political Science, Thammasat University
- Bachelor's Degree - Bachelor of Law, Thammasat University

Members of committee at other organizations

* None

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)

Sak Segkhoonthod, PhD.

(A list of state enterprise committee 2018)

Period: 8 August 2017 - Present
Date of Birth: 3 May 1966
Position: President and CEO, Digital Government Development Agency (Public Organization) - DGA

Key work experiences:

- Senior Executive Vice President, Office of Government Information Technology Management, National Science and Technology Development Agency
- Executive Vice President, Office of Government Information Technology Management, National Science and Technology Development Agency

Education:

- Doctorate's Degree - Electronic Systems Engineering, Essex University, United Kingdom
- Master's Degree - Computer Studies, Essex University, United Kingdom
- Bachelor's Degree - Bachelor of Industrial Technology in Electronics, King Mongkut's Institute of Technology Ladkrabang

Members of committee at other organizations

- Honorary Committee of the Electronics Transactions Commission
- Executive Committee of the National Electronics and Computer Technology Center
- Honorary Committee of the Office of the Official Information Commission

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)

Directors



Pannipa Apichatabutra

(A list of state enterprise committee 2018)

Period: 8 August 2017- Present

Date of Birth: 25 December 1955

Position: Retired

Key work experiences:

- Deputy Managing Director, Internal Audit, Krung Thai Bank PCL
- Assistant Managing Director, Capital and Capital Market Administration Group, Krung Thai Bank PCL

Education:

- Master's Degree - MBA, Ohio University, USA
- Bachelor's Degree - Bachelor of Accountancy, Chulalongkorn University

Members of committee at other organizations

- Management Audit Committee, Mahidol University
- Administrative Committee, Tobacco Authority of Thailand

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Nikorn Susiriwattananont

(A list of state enterprise committee 2018)

Period: 8 August 2017 - Present

Date of Birth: 30 June 1956

Position: Vice President, the Federation of Thai Industries

Key work experiences:

- Chairman, Thai Iron & Steel Industry Club, Federation of Thai Industries
- Committee, Iron & Steel Institute of Thailand

Education:

- Master's Degree - Master of Commerce, Thammasat University
- Bachelor's Degree - Social Sciences - Bachelor of Anthropology, Thammasat University

Members of committee at other organizations

* None

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Fig. Off. Kamolnai Chaixanien

Period: 8 August 2017 - Present
Date of Birth: 17 March 1958
Position: Assistant Managing Director, Thai Beverage Public Company Limited

Key work experiences:

- Deputy Managing Director, Asset Management, TCC Assets (Thailand) Co., Ltd.
- Deputy Managing Director - Asset Management, Overseas Hotels Group, TCC Assets (Thailand) Co., Ltd.

Education:

- Master's Degree - MBA, Cornell University, Johnson Graduate School of Management, New York, USA
- Master's Degree - Engineering in OR & IE, Cornell University, School of Industrial Engineering & Operations Research, New York, USA
- Bachelor's Degree - Chemical Engineering, University of New Hampshire, New Hampshire, USA

Members of committee at other organizations

- Committee, Amarin Printing & Publishing Co., Ltd.
- Committee, Varopakorn Public Co., Ltd.
- Committee, NCC Management & Development Co., Ltd.

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Panit Dhirapharbwongse, Ph.D.

(A list of state enterprise committee 2018)

Period: 8 August 2017 - Present
Date of Birth: 10 November 1967
Position: Legal Advisor, Office of the Permanent Secretary, Ministry of Finance

Key work experiences:

- Director of Legal Group, Office of the Permanent Secretary, Ministry of Finance
- Head of Legal Work Group, Legal Bureau, the Revenue Department

Education:

- Doctorate's Degree - Ph.D (Law), the Thai Government's Scholarship for the Revenue Department, Queen Mary College, the University of London, United Kingdom
- Master's Degree - LL.M in International Economic Law, the University of Warwick, United Kingdom
- Bachelor's Degree - Bachelor of Law, Thammasat University

Members of committee at other organizations

- Committee, Islamic Bank Asset Management Ltd.
- Committee, Krung Thai Law Firm Co., Ltd.

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)

Directors



Prof. Weerakorn Ongsakul, PhD.

(A list of state enterprise committee 2018)

Period: 27 June 2018 - Present
Date of Birth: 10 June 1967
Position: Professor, Asian Institute of Technology

Key work experiences:

- Dean, Office of Environment, Resources and Development of the Asian Institute of Technology

Education:

- Doctorate's Degree - PhD. In Electrical Engineering, Texas A&M University
- Master's Degree - M.S. in Electrical Engineering, Texas A&M University
- Bachelor's Degree - Bachelor of Electrical Engineering, Chulalongkorn University

Members of committee at other organizations

- Committee of Bangchak Initiative Innovation Center @ AIT, the Office of Environment, Resources and Development of the Asian Institute of Technology

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Assoc. Prof. Thira Jearsiripongkul, PhD.

(A list of state enterprise committee 2018)

Period: 27 June 2018 - Present
Date of Birth: 7 April 1975
Position: Dean, Faculty of Engineering, Thammasat University

Key work experiences:

- Director, the Office of the Registrar, Thammasat University
- Assistant to President, Rehabilitation of Rangsit Center, Thammasat University
- Director, the Engineering Programme (TEP) and the Engineering Programme in English, Thammasat University (TEPE)

Education:

- Doctorate's Degree - Applied Mechanics (Dynamics), Technische Universität Darmstadt, Darmstadt, Germany
- Master's Degree - Mechatronics School of Advanced Technologies (Exchanged Program), Asian Institute of Technology, Bangkok, Thailand
- Technical University, Hamburg-Harburg, Hamburg, Germany
- Bachelor's Degree - Bachelor of Mechanical Engineering, King Mongkut's Institute of Technology Ladkrabang

Members of committee at other organizations

* None

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)



Sermsakul Klaikaew

(A list of state enterprise committee 2016)

Period: 3 June 2015 - 9 November 2018
Date of Birth: 10 November 1958
Position: Governor of Provincial Electricity Authority (from 3 June 2015 - 9 November 2018)

Key work experiences:

- Deputy Governor (Human Resources)
- Director, Provincial Electricity Authority Area 1 (Central) Phra Nakhon Si Ayutthaya Province

Education:

- Master’s Degree - Master of Public, Private Management, National Institute of Development Administration
- Bachelor’s Degree - Bachelor of Engineering, Electrical Engineering, Kasetsart University

Member of committee at other organizations

* None

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)

Sompong Preeprem

(A list of state enterprise committee 2018)

Period: 12 November 2018 - Present
Date of Birth: 17 August 1961
Position: Governor, Provincial Electricity Authority (from 12 November 2018 - present)

Key work experiences:

- Deputy Governor, Planning and Power System Development
- Assistant Governor, Planning and Power System Development
- Assistant Governor, Office of the Governor and Deputy Managing Director PEA Encom International Co., Ltd.

Education:

- Master’s Degree - Master of Business Administration, Kasetsart University
- Bachelor’s Degree - Bachelor of Engineering, Electrical Engineering, Khon Kaen University

Members of committee at other organizations

* None

Shareholding in Energy-Related Companies and Business for over 10% of all company shares

* None

Any procurement/hiring agreement with PEA for a starting amount of 100 million baht

* None

(This includes a nominee of a company as a director or a shareholder)

Remarks

The auditing process is

- To inquire information directly from the executives
- To examine the Provincial Electricity Authority’s procurement database with a budget over 100 million baht
- To examine reports of any conflicts of interest. PEA’s executive directors must report if they have any conflicts of interest upon 1) accepting the offer of the position, 2) having any conflicts of interest and 3) holding any share in energy-related companies or businesses for over 10% of the total shares involving with voting rights. Then, PEA will report it to the Ministry of Interior.

PEA Executives

Sompong Preeprem



Position: Governor

Age: 57

Educational Institutes/Degrees/Fields

- Kasetsart University, Master of Business Administration
- Khon Kaen University, Bachelor of Engineering/Power Electrical Engineering

Previous Positions:

- | | |
|----------------|-----------------------------------------------------------|
| 12 November 18 | Governor, Provincial Electricity Authority |
| 1 October 17 | Deputy Governor, Planning and Power System Development |
| 1 October 16 | Assistant Governor, Planning and Power System Development |
| 1 October 15 | Assistant Governor, Office of the Governor |



Bussakorn Trisakchat

Position: Deputy Governor,
Office of the Governor

Age: 60

Educational Institutes/Degrees/Fields

- Thammasat University, Bachelor of Political Science/
Government and Politics

Previous Positions:

12 November 18 Deputy Governor, Office of the
Governor
1 October 17 Director, Office of the Governor
1 October 16 Director, Governor Function



Khemmarat Sartpreecha

Position: Deputy Governor, Office of the Governor
Age: 56

Educational Institutes/Degrees/Fields

- National Institute of Development Administration/Master of
Public Administration/Management for Executives
- Khon Kaen University/Bachelor of Engineering/Power Electrical
Engineering

Previous Positions:

1 October 17 Deputy Governor, Office of the Governor and
Acting Managing Director, PEA Encom
International Co., Ltd.
1 October 16 Director, Electricity Office, Area 2 (Chonburi),
Region 3
15 June 15 Director, Electricity Office, Area 3 (Lopburi),
Region 1



Saranyphong Atchvsunthon

Position: Deputy Governor, Planning and Power System
Development

Age: 59

Educational Institutes/Degrees/Fields

- Sri Pathum University/Bachelor of Engineering/Electrical
Engineering
- Ramkhamhaeng University/Bachelor of Liberal Arts/Political
Science
- Phra Nakorn Teachers' College/Bachelor of Education/
Industrial Art

Previous Positions:

12 November 18 Deputy Governor, Planning and Power
System Development
1 October 17 Assistant
Governor, Planning and Power System
Development
18 March 15 Director, Planning Power System



Poonsiri Dharmasaroj

Position: Deputy Governor, Corporate Strategy
Age: 59

Educational Institutes/Degrees/Fields

- Chiang Mai University/Master of
Business Administration
- Chiang Mai University/Bachelor of Engineering/
Electrical Engineering

Previous Positions:

1 October 15 Deputy Governor, Corporate Strategy
18 February 15 Assistant Governor, Corporate Strategy
1 January 15 Acting Assistant Governor, ICT
1 October 13 Assistant Governor, ICT

PEA Executives



Theeraphong Bureerug

Position: Deputy Governor, Electricity Authority Region 1

Age: 59

Educational Institutes/Degrees/Fields

- Chiang Mai University/Bachelor of Engineering/
Electrical Engineering

Previous Positions:

12 November 18 Deputy Governor, Region 1
1 October 15 Deputy Director, Electricity Office, Area
1 (Chiang Mai), Region 1
18 March 15 Director, Engineering and Services,
Electricity Office, Area 2 (Pitsanulok),
Region 1



Somluck Kingmala

Position: Deputy Governor, Electricity Authority Region 2

Age: 58

Educational Institutes/Degrees/Fields

- Ramkhamhaeng University, Master of Business
Administration
- Khon Kaen University/Bachelor of Engineering/Power Electrical
Engineering

Previous Positions:

12 November 18 Deputy Governor, Electricity Authority Region 2
1 October 18 Acting Deputy Governor, Electricity Authority
Region 2
1 October 17 Deputy Governor, Office of the Governor
18 February 15 Director, Area 1 Electricity Authority (Phra
Nakorn Si Ayutthaya Province), Region 3



Manoon Chantaraksa

Position: Deputy Governor, Electricity Authority Region 3

Age: 60

Educational Institutes/Degrees/Fields

- Ramkhamhaeng University/Master of Business Administration
- Khon Kaen University/Bachelor of Engineering/Power Electrical
Engineering

Previous Positions:

12 November 18 Deputy Governor, Electricity Authority Region 3
1 October 18 Acting Deputy Governor, Electricity Authority
Region 3
1 October 16 Deputy Governor, Electricity Authority Region 4
1 September 15 Acting Deputy Governor, Corporate Social
Responsibility
18 March 15 Deputy Governor, Office of the Governor



Pakorn Nudboonlert

Position: Deputy Governor, Electricity Authority Region 4

Age: 58

Educational Institutes/Degrees/Fields

- National Institute of Development Administration/
Master of Public and Private Administration
- Rajamangala University of Technology/Bachelor of Engineering/
Electrical Engineering
- Nakhon Ratchasima Teachers' College/Bachelor of Liberal Arts/
General Management

Previous Positions:

12 November 18 Deputy Governor, Electricity Authority Region 4
1 October 17 Director, Area 1 Electricity Authority
(Phra Nakorn Si Ayutthaya Province), Region 3
1 October 16 Director, Area 1 Electricity Authority
(Phetchaburi Province), Region 4



Anulom Utamaphan

Position: Deputy Governor, Engineering
Age: 57

Educational Institutes/Degrees/Fields

- Kasetsart University/Master of Business Administration
- Khon Kaen University/Bachelor of Engineering/Power Electrical Engineering

Previous Positions:

- 12 November 18 Deputy Governor, Engineering
- 1 October 16 Assistant Governor, Engineering
- 1 October 15 Director, Substation Work



Suwat Chiochanchai

Position: Deputy Governor, ICT
Age: 59

Educational Institutes/Degrees/Fields

- Kasetsart University/Master of Business Administration
- Kasetsart University/Bachelor of Engineering/Electrical Engineering

Previous Positions:

- 18 February 15 Deputy Governor, Information and Communications
- 1 October 14 Acting Deputy Governor, Engineering Business
- 1 October 13 Deputy Governor, Planning and Power System Development



Piyapoj Ruthirago

Position: Deputy Governor, Construction and Project Management
Age: 58

Educational Institutes/Degrees/Fields

- Prince of Songkla University/Bachelor of Engineering/Electrical Engineering

Previous Positions:

- 1 October 16 Deputy Governor, Construction and Project Management
- 15 June 15 Director, Area 2 Electricity Authority (Chonburi Province), Region 3
- 18 February 15 Director, Area 3 Electricity Authority (Lopburi Province), Region 1



Wallop Kittiwat

Position: Deputy Governor, Operations and Maintenance
Age: 57

Educational Institutes/Degrees/Fields

- Kasetsart University/Master of Business Administration
- King Mongkut's Institute of Technology Ladkrabang/Bachelor of Engineering/Electrical Engineering

Previous Positions:

- 1 October 17 Deputy Governor, Operations and Maintenance
- 1 October 15 Assistant Governor, Operations and Maintenance
- 18 March 15 Director, Operations and Maintenance Department, Area 3 (Nakhon Pathom), Region 3

PEA Executives



Thirawut Kasemsant na Ayuthaya

Position: Deputy Governor, General Service
Age: 57

Educational Institutes/Degrees/Fields

- Ramkhamhaeng University/Master of Business Administration
- Prince of Songkla University/Bachelor of Liberal Arts/Social Studies

Previous Positions:

- 12 November 18 Deputy Governor, General Service
- 1 October 17 Assistant Governor, General Service
- 1 October 16 Director Procurement



Chinsanee Unchitti

Position: Deputy Governor, Finance and Accounting
Age: 59

Educational Institutes/Degrees/Fields

- Kasetsart University/Master of Business Administration
- Ramkhamhaeng University/Bachelor of Business Administration/Banking and Finance

Previous Positions:

- 1 October 17 Deputy Governor, Finance and Accounting
- 1 October 16 Assistant Governor, Finance and Accounting
- 18 March 15 Director, Finance



Lt. Supot Chaibangyang

Position: Deputy Governor, Human Resource
Age: 59

Educational Institutes/Degrees/Fields

- Technic Siam College/Bachelor of Business Administration/Personnel Administration

Previous Positions:

- 12 November 18 Deputy Governor, Human Resource
- 1 October 17 Assistant Governor, Human Resource
- 18 March 15 Director, Human Resource Strategy
- 1 September 12 Deputy Director, Human Resource



Panumart Limsuwan

Position: Deputy Governor, Corporate Social Responsibility
Age: 54

Educational Institutes/Degrees/Fields

- Ramkhamhaeng University/Master of Business Administration
- Rajamangala University of Technology/Bachelor of Engineering/Electrical Engineering

Previous Positions:

- 12 November 18 Deputy Governor, Corporate Social Responsibility
- 1 October 15 Director, Electricity Office, Area 2 (Nakhon Si Thammarat) Region 4
- 18 March 15 Director, Operations and Maintenance, Area 2 (Nakhon Si Thammarat) Region 4
- 16 October 13 Director, Operations and Network, Area 2 (Nakhon Si Thammarat) Region 4

Key Current Investments and Future Plans

PEA has produced its work plans and projects in response to electricity demands in the future and also created an investment plan framework for electricity system development plan according to the National Economic and Social Development Plan. Its key objectives are to develop PEA's electricity system to be sufficient, reliable, standardized and to cover all areas of users. This development can help lay a strong foundation for Thailand to become well developed with stability, prosperity and sustainability in compliance with the self-sufficiency philosophy. In addition, PEA aims at developing PEA smart grid system with the use of information and communication technology to measure and control its electricity network and leverage it to be an automatic system. By doing so, PEA needs to develop a new and fundamental infrastructure for electricity system to serve renewable energy and to enhance its power usage management technology with efficiency in the near future. This is in line with the national strategy of the government. PEA's investment plan also responds to the forecast result for electricity demands made by a working group whose study was approved on 12 September 2018. The result of the study is used to support a budgetary planning for investment plan in preparation for intensifying energy and environmental crisis. The national development has resulted in increasing energy demands which are a basic need in life. Hence, PEA has realized that an electricity power service must be of good quality, and become more efficient, secured, modernized, fast and sustainable with growing community, society and environment.

As of 12 September 2018, PEA's power demand forecast for the first 5 years (2018 - 2022) of the National Strategy 2018 - 2037 there will be an electricity power consumption for about 154,968 million units, demands for electricity power can be peaked at 23,808 MW and a number of electricity users can be 21.62 million people with an average increase rate per year of 3.20% and 3.32% and 2.49% respectively.

Work Plans and Projects

Work plans and government policies that are involved with electricity power services

PEA's Electricity System Development Plan under the current National Economics and Social Development Plan has taken into account the energy policy of the government. They are as followed:

1. To promote and drive the energy industry to generate revenues for the country and to increase investment in energy infrastructure and develop a regional energy business center by making use of geo-strategic advantage of the country.

2. To enhance the national energy security by searching for and develop power sources and electricity system, both domestically and internationally, and diversify types of power and make it more sustainable.

3. To promote a production, a consumption, and research and a development of alternative and renewable energy with a target to replace fossil fuel energy by 25% within 10 years, and support a development of integrated energy industry.

4. To promote an energy conservation with a reduction of an energy consumption against its production by 25% within 10 years together with an integrated energy development, and support a use of equipment and buildings with energy efficiency and clean energy development to reduce greenhouse gas and resolve global warming. Also, cultivate a mindset among energy-related users - all production, transport and residential sectors - to use energy efficiently and effectively.

Objectives of the Electricity System Development Plan

1. To increase efficiency for PEA's operation and to leverage the organization's potential to be an excellent leader in electricity distribution business

2. To respond to demands of all groups of stakeholders

3. To focus on innovation and technology development, and expand its business by supporting a business operation involved, both locally and internationally

4. To promote a use and a capacity development of information system efficiently

Investment Planning

PEA has made an investment plan under the Electricity System Development Plan to be in line

with the directions of the National Strategy and framework of the National Economic and Social Development Plan, and to respond to increasingly ongoing demands for electricity in the future, and PEA's financial status. Its key current investment projects are consisted of 16 ongoing projects with 2 work plans, and another 6 projects with 3 work plans in the future (tentatively in the next 3 years). They are as followed:

Key Current Investment Projects and Future Plans

Unit : Million Baht

Projects	Investment Budget (Million Baht)			Operational Status
	Domestic Loans	PEA's Revenues	Total Budgets	
Projects Under Operation				
1. A Development Project for Transmission Line System and Power Station, 9 th Stage (Phase 1)	4,095	2,965	7,060	Progress result for 69.59%
2. A Development Project for Transmission Line System and Power Station, 9 th Stage (Phase 2)	3,105	1,435	4,540	Progress result for 44.54%
3. A Development Project for Transmission Line System and Power Station, 9 th Stage (Phase 3)	11,314	3,771	15,085	Progress result for 59.40%
4. A Development Project for Transmission Line System and Power Station, 9 th Stage (Phase 4)	3,360	1,125	4,485	Progress result for 56.77%
5. A Construction and Improvement Project for Distribution System, 7 th Stage	12,854	4,418	17,272	Progress result for 100%
6. A Reliability Enhancement Project for Power System, 3 rd Stage	10,965	4,190	15,155	Progress result for 78%



Projects	Investment Budget (Million Baht)			Operational Status
	Domestic Loans	PEA's Revenues	Total Budgets	
Projects Under Operation				
7. A Project to Expand Electricity Areas for New Household Users	2,761	926	3,687	Already done for 130,054 households or 102.74%
8. A Project to Expand Power System for Remote Households	690.05	524.95	1,215	Already done for 9,186 households or 97.03%
9. A Project to Increase Efficiency for Power Distribution's Commanding Center	3,395	1,135	4,530	Progress result for 22.63%
10. A Smart Grid Development Project in Pattaya, Chonburi	500	569	1,069	- In the procurement process for price offering - Progress result for 27.35%
11. A Development Project for Transmission and Distribution System, 1 st Stage	24,009	38,670	62,679	Progress result for 7.45%
12. A Development Project for Power System to Serve Special Economic Zone Development, 1 st Stage (Tak, Sa Kaeo, Trat, Mukdahan, Songkhla and Nong Khai provinces)	2,055	1,085	3,140	Progress result for 15.49%
13. A Project to Expand Electricity Area for Agricultural Farming, 2 nd Stage	1,122	908	2,030	Progress result for 101.09%
14. A Development Project for Power System in Big Cities, 1 st Stage	8,750	2,920	11,670	Progress result for 3.36%
15. A Development Project for Micro Grid Power System at Mae Sarieng, Mae Hong Son Province	-	265	265	Progress result for 45.10%

Projects	Investment Budget (Million Baht)			Operational Status
	Domestic Loans	PEA's Revenues	Total Budgets	
Projects Under Operation				
16. A Development Work Plan for Power System's Geo-Information, 3 rd Stage	1,560	530	2,090	Under the process of submission the computer machines, and installation of software and related devices
17. A Long-Term Plan for a Construction of Underground Cables	1,000	1,350	2,350	Under the process
18. A Development Work Plan for Power Disruption Solution and Analysis Center	17	5.44	22.44	1 st Stage - 12 areas, complete
	96	32.30	128.30	2 nd Stage - 23 areas, 22 are complete
	529	176	705	3 rd Stage - 144 areas, 27 are complete
19. A Power System Development Project to Support Special Economic Zone Development, 2 nd Stage (Chiang Rai, Narathiwat, Nakhon Phanom and Kanchanaburi provinces)	3,000	1,000	4,000	Progress result for 3.85%
20. A Project to Expand Power System Areas for New Households, 2 nd Stage	4,923	1,642	6,565	Progress result for 1.62%
Total projects under operation	100,100.05	69,642.69	169,742.74	



Projects	Investment Budget (Million Baht)			Operational Status
	Domestic Loans	PEA's Revenues	Total Budgets	
Planned Projects for Investment in the Next 3 Years				
1. A Small Hydropower Development Project by PEA at the Royal Irrigation Department (RID)'s Drainage Gates (10 locations: Lampang, Chiang Mai, Rayong (2 areas), Sakon Nakhon, Petchaboon, Songkhla and Trad (3 areas)	-	808	808	- Feasibility study for operation is done. There are two potential areas: Kiew Lom Dam, Lampang; and Mae Guang in Chiang Mai - In the process to ask for a permission from Royal Irrigation Department (RID)
2. A Construction Project for 115 - kV Submarine Cables to Replace and Increase Capacity for Power Distribution to the Samui Island, Surat Thani province	1,597	533	2,130	In the process to ask for a permission from the Cabinet
3. A Development Project for Transmission and Distribution System, 2 nd Stage	58,215	19,405	77,620	Proposed to the Governor for consideration ,and to PEA's Boards of Directors for approval
4. A Development Project for Electricity Production System by Renewable Energy at Kood and Mak Islands in Trad province	241	81	322	Proposed a project development of micro-grid power system on Paluay, Surat Thani to PEA's Governor
5. A Work Plan for Electricity Voltage Conversion in the South from 33 kV to 22 kV, 1 st Stage	799	266	1,065	In the process to consider whether the work plan to converse electricity voltage is suitable or not
6. A Hydropower Project for Communities	225	75	300	In the process to consider suitability of the project
7. A Power System Development Project in Islands	4,973	1,657	6,630	In the process to consider suitability of the project
8. A Power System Development Project in Major Cities, 2 nd Stage	5,925	1,975	7,900	In the process to consider suitability of the project

Projects	Investment Budget (Million Baht)			Operational Status
	Domestic Loans	PEA's Revenues	Total Budgets	
Planned Projects for Investment in the Next 3 Years				
9. A Project to Increase Power Distribution Capacity with Underwater Cables in Various Islands with Electrification	1,623	542	2,165	In the process of conducting an environment impact assessment study
10. A Project to Expand Power Installation Areas on Islands (Panyee Island, Pang Nga)	165	56	221	In the process of submission to the Cabinet for approval
11. A Plan to Increase Efficiency of Geo-Information for the Power System	1,005	335	1,340	In the process of current data collection and trends new technology to increase efficiency for the power system's geo-information
12. A Development Project for Smart Grid System, 1 st Stage	4,970	1,660	6,630	In the process to consider suitability of the project
13. A Project for Advanced Metering Infrastructure (AMI) for Large Power Producer	1,357	453	1,810	In the process of project submission to the Cabinet for approval
14. A Development Project for Small Grid Power System, 1 st Stage	825	275	1,100	In the process of impact study for the project by signing a collaboration for the study between EGAT and PEA
15. A Development Work Plan for System Management of Electricity System Assets	716	240	956	In the process of Preparing a TOR for hiring consultants to study condition based risk management (CBRM)
A summary of planned projects for investment in the next 3 years	82,636.00	28,361.00	110,997.00	
Total	182,736.05	98,003.69	280,739.74	



Capital Investments

Sources of capital investment consist of institutional loans in the country or fund raising and capital investments from PEA. They are as followed:

Sources of Capital Investment	Budget (Million Baht)	Ratio (Percentage)
1. Domestic loans/Fund raising	182,736.05	65.09
2. PEA's revenues	98,003.69	34.91
Total	280,739.74	100.00

Expected Results

PEA has managing projects according to its Operational Plan for Power System 2018 - 2037 and the National Strategy 2018 - 2037. Its expected benefits and results are

1. An expansion of electricity services

PEA is capable of sufficiently expanding its electricity power service to respond to increasing electricity demands that serve a growth of national economy, industry, tourism and smart grid or PEA smart grid that are going to happen in the future, and connect electricity distribution system and expand areas for electrification and its service to cover all households

2. An improvement of stability quality for electricity distribution

PEA is capable of providing electricity power service efficiently with modernized and international standard, increasing efficiency of its smart grid administration to serve an information and communication connection with devices via a network more easily and smoothly. Then, PEA can plan for management and reduce operational and maintenance problems of electricity system. This will result in a stability quality improvement for electricity distribution, reduce power disruption and loss in the power system. In addition, the system can connect with renewable energy sources and link to small power producers with high reliability and serve increasing demands of electricity users.

3. Social and economic benefits

- 3.1 Able to manage power efficiently
- 3.2 Able to enhance electricity system capacity and service quality for all users
- 3.3 Increase rate of renewable and clean energy while reducing greenhouse gas
- 3.4 Reduce opportunities to have a large power plant and reduce foreign currencies for power import
- 3.5 Stabilize electricity system by diminishing rates for power block-out. As a result, a period of the power block-out is shortened.
- 3.6 Electricity users can choose to manage electricity within their own household, offices and buildings worthwhile with their preferred models and can reduce costs for electricity expenses
- 3.7 Support an economic capacity development and leverage quality of life with distribution of basic infrastructure service towards people in the region and rural areas thoroughly
- 3.8 Support an urban development in the region to be a pleasant town for living with power system management that creates nice views
- 3.9 Encourage a job creation in the rural areas through household industry development and rural & community industry. This can help local people more with increased income and reduced migration to major cities

A power development by focusing on natural resources and environmental impacts can enable people to have a good quality of life and health.

Key Data Report

Items	2018	2017	Increase (Decrease) 2018 - 2017	
			Amount	Percentage
Revenue from Electricity Sales (Million Baht)	483,477	467,486	15,991	3.42
Other revenue from operation (Million Baht)	13,997	13,516	481	3.56
Operation expenses (Million Baht)	475,650	452,888	22,762	5.03
Operation profits (Million baht)	21,824	28,144	(6,290)	(22.37)
Investment Assets (Million Baht)	34,385	33,476	909	2.72
Loans (Million Baht)	71,580	76,151	(4,571)	(6.00)
Total Assets (Million Baht)	414,880	397,836	17,044	4.28
Numbers of Power Users (Cases)	19,768,754	19,360,779	407,975	2.11
Sale Units + Free-of-charge electricity (Million Units)	134,674	132,401	2,273	1.72
Average sale units (Units/Users)	6,812	6,839	(27)	(0.39)
Average electricity fee (Baht/Unit)	3.49	3.47	0.02	0.58
Maximum Electricity power demands (MW)	19,139	19,721	(582)	(2.95)
Electricity Power (Million Units)	142,296	139,548	2,748	1.97
- Purchase (Million Units)	142,191	139,443	2,748	1.97
- Self-production (Million Units)	105	105	0	0.00
Transmission Line System (Circuit-Kms)	12,765	12,258	507	3.97
High-Voltage Distribution System (Circuit-Kms)	313,424	308,988	4,436	1.44
Low-Voltage Distribution System (Circuit-Kms)	472,464	462,786	9,678	2.05
Numbers of PEA Offices (Offices)	958	946	12	1.27
Numbers of PEA Employees (Persons)	29,659	29,835	(172)	(0.58)
Numbers of Villages Nationwide	74,304	74,304	0	0.00
Numbers of Villages with Electricity	74,300	74,297	3	0.004
Percentage of Villages with Electricity	99.99	99.99	0	0.00



Numbers of Electricity Users

Electricity users classified by type of rate categories

Units : Cases

Types of Users	2018	2017	2016	2015	2014
Residences (<150 KWh)	10,073,417	9,982,438	9,994,895	10,028,627	10,051,293
Residences (>150 KWh)	7,377,065	7,119,077	6,744,937	6,310,899	5,868,536
Small-sized businesses	1,639,386	1,610,008	1,539,248	1,463,744	1,408,156
Medium-sized businesses	77,285	74,266	72,459	68,761	65,360
Large-sized businesses	6,812	6,625	6,396	6,112	5,836
Specific type of businesses	12,896	12,530	12,598	11,622	10,714
Government and non-profit organizations	1,131	1,305	1,261	1,237	1,385
Water pumping for agriculture	5,484	5,046	4,935	4,415	4,641
Electricity for temporary use	331,913	312,699	292,382	275,882	262,631
Electricity back-up	82	64	55	51	48
Interruptible power distribution	4	3	3	3	3
Electric vehicles (EVs)	0	0	0	0	0
Free electricity	243,279	236,718	225,468	220,090	211,891
Total	19,768,754	19,360,779	18,894,637	18,391,443	17,890,494
Increase (%)	2.11	2.47	2.74	2.80	3.04
Index (2014 = 100%)	110.50	108.22	105.61	102.80	100.00

Sale Units

Sale units classified by types of electricity users

Units : Million Units

Types of electricity users	2018	2017	2016	2015	2014
Residences (<150 KWh)	8,110	8,141	8,198	8,270	8,291
Residences (>150 KWh)	23,969	23,192	22,736	20,649	19,012
Small-sized businesses	13,347	13,035	12,697	12,033	11,373
Medium-sized businesses	21,756	21,157	20,902	19,988	19,214
Large-sized businesses	57,018	56,729	55,048	52,556	51,617
Specific type of businesses	4,309	4,183	4,172	3,876	3,636
Government and non-profit organizations	71	66	76	70	56
Water pumping for agriculture	365	298	267	387	414
Electricity for temporary use	942	977	985	989	982
Electricity back-up	112	80	138	172	141
Interruptible power distribution	1,936	1,925	2,001	1,945	1,761
Electric vehicles (EVs)	0	0	0	0	0
Free electricity	2,739	2,618	2,454	2,277	2,135
Total	134,674	132,401	129,674	123,212	118,632
Increase (%)	1.72	2.10	5.24	3.86	3.51
Index (2014 = 100%)	113.52	111.61	109.31	103.86	100.00



Key Sources of Electricity Power

Electricity power generation and purchase

Units : Million Units

Sources	2018	2017	2016	2015	2014
Generated by Provincial Electricity Authority	105	105	104	91	104
Purchased from Electricity Generation Authority of Thailand	131,861	130,252	129,328	124,376	120,194
Purchased from Department of Alternative Energy Development and Efficiency (DEDE)	103	112	85	70	101
Purchased from Very Small Power Producers (VSPPs)	10,131	8,981	7,472	5,796	5,077
Purchased from solar rooftop	96	98	89	57	9
Total	142,296	139,548	137,078	130,390	125,484

Electricity Power for Lighting, Business and Industry

Electricity power classified by types (excluding free electricity)

Units : Million Units

Types	2018	2017	2016	2015	2014
Lighting	33,457	32,674	32,262	30,365	28,754
Business and industry	98,478	97,109	94,958	90,570	87,743
Total	131,935	129,783	127,220	120,935	116,497
Increase (%)	1.66	2.01	5.20	3.81	3.46
Index (2014 -100%)	113.25	111.40	109.20	103.81	100.00

Fiscal Years	Lighting		Business and Industry		Total	
	Million Units	%	Million Units	%	Million Units	%
2014	28,754	24.68	87,743	75.32	116,497	100.00
2015	30,365	25.11	90,570	74.89	120,935	100.00
2016	32,262	25.36	94,958	74.64	127,220	100.00
2017	32,674	25.18	97,109	74.82	129,783	100.00
2018	33,457	25.78	98,478	75.88	131,935	100.00

Employees

Numbers of employees classified by educational degrees

Units : Persons

Degrees	2018	2017	2016	2015	2014
Bachelor and higher degrees	9,148	8,949	8,897	8,167	8,020
Diploma - High-Level Professional Certificates	15,785	15,409	15,193	14,296	13,177
Professional certificates - Grade 12	3,933	4,484	4,856	5,237	5,372
Others	793	993	1,168	1,393	1,540
Total	29,659	29,835	30,114	29,093	28,109





Corporate Social Responsibility



PEA has committed to provide an electricity power service, and to expand electricity distribution to remote areas in order to have all people nationwide gain access to electrification. Meanwhile, PEA has always realized an importance of a social and environmental responsibility, both inside and outside the organization. Thus, PEA has supported a development of social responsibility according to the ISO 26000 standard at all stages of PEA's work. All PEA's operating functions must have a Social and Environmental Responsibility Master Plan 2017 - 2021 with an annual review to be ensure that PEA is capable of responding to demands of all groups of the stakeholders properly.

In addition, PEA has organized an operational training workshop to conduct the strengths, weaknesses, opportunities and threats (SWOT) analysis for its social responsibility objectives and a creation of an "ISO 26000 In Process Self-Assessment Manual" to be used as a mechanism to evaluate the organization according to key work process. PEA has encouraged all staff to have a good knowledge and understanding of social and environmental responsibility's principles and practices through its

quality in-process and after-process corporate social responsibility (In-process and After-process CSR). There is a prevention and an impact reduction of its products and services, including operational work with all internal and external stakeholders. There is a concrete evaluation system of CSR with a gap data to be improved for further quality development. By doing so, PEA's operation work process will be improved with increased excellence every year. This is in line with PEA's Social and Environmental Responsibility Master Plan which is divided into 7 topics according to the ISO 26000. They are:

I. Organizational Governance

PEA has leveraged its social responsibility work by making the PEA's Strategic Plan and a Social and Environmental Responsibility Master Plan which focusing on all processes and its stakeholders, delivering products and services with efficiency, stability and safety. PEA has encouraged its staff to do their work with social and environmental responsibilities according to the ISO 26000 standard with a focus on creating shared values (CSV) by improving operational activities at each area under PEA's responsibility in response to

stakeholders' needs, and applying the international practice of sustainable development to be managed and administered with PEA's work. Besides, PEA has given an importance on a development of innovation for sustainable environment in its business process. They are, for example, a promotion of technology research and development to create innovation that is linked to communities, a promotion of renewable energy for tourism and safety, and a promotion of community business to use clean energy.

2. Human Rights

PEA is committed to an equal practice with a respect to individual's rights and human rights with all internal and external stakeholders. In 2018, PEA has organized ongoing activities to promote and develop quality of life for all the less privileged such as a project to recruit staff and wage workers with disability according to the Article 33 to work with PEA for 87 persons, a project in partnership with the Universal Foundation for Persons with Disabilities to create jobs for 119 disable people according to the self-sufficiency philosophy, and a site allocation for product sales and a new service for the disable or a caretaker for the disable at its Head Office and other 91 electricity offices nationwide. This is in accordance with an equal practice with fairness for the less privileged.

For human rights' practices at workplace, PEA has arranged various kinds of welfares for all staff. They are, for example, a scholarship and staff loan for several welfares, a nursery service for baby care and development, a medical service at PEA clinics. Besides, PEA has a fair and transparent management with equal practices throughout the organization. It also offers its staff and wage workers to have an opportunity for his/her professional development with additional skill trainings for learning and development from the time when they have joined the organization until they are promoted to a higher position.

3. Labor Practices

PEA has planned and supported its skilled and experienced staff to have a professional growth in the organization efficiently. We have also

maintained a good working environment with healthcare and safety, and provided the staff with social welfare and benefits by creating a communication channel for them to share what they want, including ideas to bring about a satisfaction at work and build a bonding relationship with the organization. PEA has also conducted a survey and studied its result to see what is expected by the staff because there are different expectation, depending on types of their work and responsibilities. The result is useful for PEA to improve its benefit and welfare policy to best respond to the employee's expectation.

Besides, PEA has given an importance on a stability and vocational health safety for its staff and attempted to improve our workplace to be increasingly safe with vocational health safety. A committee for vocational health safety and environmentally safe workplace is about to be set up to help cover all operational areas of PEA's work. In 2018, PEA has appointed about 214 persons as staff representatives, of which 50% representing the employer and the other 50% representing the employees. There are also safety-related agencies to help responsible for their operation linked to safety measures. PEA has also pro-actively applied the vocational health safety by arranging a risk assessment for the employees' health, an accident prevention from various workplaces, and an inspection and monitoring of workplace's environment regularly.

4. Environment

PEA has realized the importance of environmental responsibilities at all stages of our work to prevent any potential impacts on communities and environment. Thus, before any construction project will be started, PEA will have an environmental impact assessment (EIA) study first, and follow laws involved strictly. Take for example, the National Environmental Promotion and Preservation Act 1992. To avoid any environmental impacts, PEA will follow rules by asking for permission and approval from agencies and parties involved and ensure that all projects be approved by the Cabinet.



PEA has a standard for a construction of power stations, transmission system, and power distribution system. All these projects must be done with engineering rules and safety. PEA has applied a national and international standard in designing a power station, transmission system and power distribution system. They are an International Electrotechnical Commission (IEC), an Institute of Electrical and Electronics Engineers (IEEE) and an engineering standard of the Engineering Institute of Thailand under H.M. the King's patronage.

In addition, since 2014 PEA has started a 'green office' concept to promote all its departments and divisions to use resources worthwhile with environmentally friendly concerns. We have managed to reduce greenhouse gas from its operations and prepared our organization to be internationally friendly with the environment. We have aimed at changing all employees' and wage workers' behaviors to be more conscious of environmental impacts. Take for example, we reduce a use of electricity, fuel, and water consumption with 3Rs - reuse, recycle and reduce. This is aimed at reducing waste, products and hazardous chemicals within the organization in order not to cause any pollution to the environment. PEA has so far been awarded a Green Office for 101 offices. They are a Gold (Excellent) Award for 4 offices in 2014, 12 offices in 2015, 24 offices in 2016, 29 offices in 2017, and 30 offices and 2 offices for the Silver Award in 2018. PEA has a plan to expand this green office concept to cover all PEA's offices nationwide by 2021.

5. Fair Operating Practices

PEA has emphasized the importance of corruption prevention and protection with the PEA's Master Plan for Good Regulations for Corruption Prevention and Protection (2017 - 2021). Under the plan, there are 4 key strategies: 1) to enhance the Board of Directors' commitment to have good regulations corruption prevention and protection; 2) to create an anti-corruption society and culture; 3) to develop good standard for organization regulations and pro-active corruption crackdown system and 4) to develop a mechanism and process

for corruption crackdown, and monitoring and inspection with efficient punishment and international acceptance in 2018. PEA has announced a transparent and sustainable policy to focus on 6 issues: 1) a fair service that can be examined; 2) a disclosure of financial and non-financial data; 3) a management of complaints systematically; 4) an anti-corruption and a corruption prevention; 5) regulations, and operation monitoring and assessment with transparency and 6) a promotion of civil society network.

In addition, PEA has implemented core activities: a leverage of "PEA Transparency 2.0 Plan" to "PEA's Sustainable Transparency", an Integration Plan for a Development of Corporate Government with e-Information System for (CG-eSystem), a Follow-up Plan for an Explanation of Internal Control of Departments or Division with Corruption, a Development Plan for Efficiency Increase of Complaint Management Process for Services and Corruption of ACOC PEA, and a Standard Development Work Plan for Information Technology Regulations and Investigation and Monitoring System Development (e-Investigation). PEA has also given an importance on providing all the executive board and its staff of all levels with policy communication and trainings, including anti-corruption measures of the organization.

6. Consumer Issues

PEA is well aware that consumers and customers are a key stakeholder. Thus, it has created a project management plan and a development plan for system improvement by focusing on building and managing customers' relations and giving an importance on listening to voice of customer (VOC) to become a customer-centric organization. This can help PEA analyze customers' needs and expectations and improve its work plan, activities and projects to be capable of satisfying each group of customers efficiently. In 2018, PEA has developed a full customer service system via Internet called "PEA Smart Plus" - a mobile application on smart phones - to help facilitate the customers with all services such as electricity bill information, electricity calculation,

bill payment via a credit card and a bank, an online request for electricity use, a reconnection of meter in case of any overdue debts, a power disruption, a submission of any recommendations/complaints, a search for points of service and a public relations news.

Besides, PEA has used social media and website technology as a channel to listen to and collect feedbacks from the customers about its products and services. These tools are an emergency line, 1129 PEA call center, a message reply for information with customers via a telephone, a queue management system, a smile box for customer's satisfaction assessment and a key account management for valued customers

7. Community Involvement and Development

PEA has built relationships with communities to create understanding, inquire any problems or impacts that the communities may face from PEA's project management and operation. We have also provided them with knowledge about safety in electricity use and energy conservation and how to apply clean energy to serve increasing demand for power in the future. In 2018, PEA has organized relations-building activities with 15 communities nationwide. Our staff has gone to see community people, listening to their problems and impacts that may be happening in their community such as a safety concern from a power transformer installed in the community, a setup of high-voltage electricity pole across their residential area, and a danger from electricity leak. A body of knowledge creation about energy conservation and safety from electricity use and an application of clean energy with community enterprises are done via the following projects:

I District I Electrician Project

PEA has surveyed on electricians in the communities where PEA offices are located for about 7,087 districts (Tambon) and found that there is a shortage of electrician with skills and knowledge

to work in each district. PEA has, therefore, organized a "1 District 1 Electrician Project" nationwide to provide vocational training to enhance more professional skills for interested public living in the district to be capable of providing electricity-related service. This significantly helps create a job and income for the community people and promote a public participation of PEA staff with the community. Meanwhile, this project helps build a stronger collaboration among the government agencies. In 2018, PEA has allocated a budget of 8,000,000 million baht for the project which attracted around 2,000 people from the communities. The survey showed a result of participants' satisfaction for 94%.

Safe Community Using PEA Electricity Project

Since 2013 PEA has organized a Safe Community Using PEA Electricity Project and it is ongoing until now. Its objectives are to disseminate information and knowledge about energy conservation and how to use it with safety in order to reduce risk from a wrong use that causes a loss of lives and damages. Its target audiences are the government agencies, private sector, educational institutes, communities, vocational students majoring in electricity power with professional certificates and high-level certificates. They can then help inspect and improve electricity system in the area responsible by PEA nationwide. In 2018 PEA has also allocated a budget of 5,260,800 baht for training. It can attract about 1,200 representatives from the Department of Local Administration and municipalities, 600 students from vocational colleges and 360 persons from educational institutes and 600 students from primary schools. These people can help inspect electricity system in the communities for a total of 5,828 households. Under this project, 12 learning centers are also built to help create a pilot community for safe power and energy conservation, and first-aid care for those who are suffered from electricity.



Report of the PEA Audit Committee for the year 2018

The PEA's Audit Committee, appointed by the PEA's Board of Directors, consists of professional directors with qualifications, knowledge, experiences in the fields of internal audit, business administration, finance and law. Names of members of the Audit Committee are as follow;

1. Ms. Pannipa Apichatabutra Chairman of Audit Committee
2. Mr. Nikorn Susiriwattananon Audit Committee
3. Mr. Panit Dhirapharabwongse Audit Committee

Noted that the Executive Director of Internal Audit Bureau acts as the secretary of the Audit Committee.

The Audit Committee has performed their duties within the scope of responsibilities according to the PEA's regulations for the PEA's Audit Committee compliance with the guidelines specified in the State Enterprise Audit Committee, revised version B.E.2555 (2012), the State Enterprise Policy Office (SEPO), Ministry of Finance and the best practices.

For the year 2018, the Audit Committee has organized the meeting 12 times with executive, internal auditor, and auditor (State Audit Office of the Kingdom of Thailand : SAO) to discuss related agendas. Besides, the Audit Committee visited and met with PEA staff in other regional offices for 4 times in total to obtain key information, problems and challenges from the operation of such offices. As a result, the Audit Committee clearly and independently provided opinions and recommendations of operation. Noted that the Audit Committee reported the performance to PEA's Board of Directors in every meeting. It can be summarized the key issues as follow;

1. Review of the financial report - the Audit Committee reviewed information in monthly, quarterly and annual financial statements of PEA and its subsidiaries along with executives, internal auditors, and auditors (State Audit Office of the Kingdom of Thailand : SAO). The Audit Committee considered key issues and useful opinions to give assurance that the financial statements would be prepared accurately in the materiality which complies with the laws and financial report standards included with having the information disclosure that adequate, reliable and useful for the users of financial statements.

2. Review of risk management, internal control, and good corporate governance - the Audit Committee reviewed the adequacy of the internal control system to ensure that such system complies with the standard that stipulated by the State Audit Commission (SAC). The Audit Committee also reviewed the risk management process to ensure that a risk management plan, in which materiality, has been applied in order to remain risk under the acceptable level. Furthermore, good corporate governance has been reviewed that PEA would operate in accordance with laws, rules, regulations and other related orders which is to cultivate in every staff of all levels to work with ethics, transparency, and can be examined.

3. Governance of Internal audit process - the Audit Committee reviewed and permitted the regulations of PEA for Internal Audit Charter, 5-year audit plan and annual audit plan. The Audit Committee considered giving approval of self-assessment form and assessment criteria according to the best practices. The Audit Committee also approved for the strategic plan and operational plan to improve an internal audit process and evaluated the appropriateness and sufficiency of resources. Moreover, the Audit Committee reviewed and monitored the progress of performance by providing recommendations for enhancing the internal audit process more efficient.

4. Quality control of the Audit Committee - to ensure that the Audit Committee has performed efficiently and achieved its objectives as specified. The Audit Committee reviewed the PEA's regulations for the PEA's Audit Committee, including development, continuous training, and self-assessment compliance with the best practices of the State Enterprise Policy Office (SEPO), Ministry of Finance which has an outstanding efficiency in operation performance.

5. Discussion with the auditor (State Audit Office of the Kingdom of Thailand : SAO) - the Audit Committee had the meeting in particularly with the representatives of SAO in order to consider the scope and guidelines of audit and the opinions that SAO would like the state enterprise to perform. Thus, this collaboration would help to increase efficiency at work.

In summary, the Audit Committee has performed its duties following with responsibilities specified in the PEA's regulations for the PEA's Audit Committee by applying knowledge with independent and adequate. In 2018, the Audit Committee had the opinion that PEA and its subsidiaries prepared the financial report with accuracy, reliability according to financial standards and adequate disclosure. Moreover, PEA's operation is under good governance. There are risk management and sufficient internal control. The internal auditing is independent and operates in accordance with the Auditing standards, laws, rules, regulations and key policies. There was no any material deficiency in performing their duties. The Audit Committee has given opinions independently and recommendations directly to the executives and participants by mainly focusing on the interests of PEA.



(Miss Pannipa Apichatabutra)
Chairman of the PEA Audit Committee

PEA Risk Management & Internal Control Committee Report

Provincial Electricity Authority (PEA) has used risk management principles under an applied risk management process in accordance with an international standard of Committee of Sponsoring Organizations of The Treadway Commission Enterprise Risk Management (COSO ERM). There is also a policy for an internal control system development according to a conceptual framework of Committee of Sponsoring Organizations of The Treadway Commission (COSO-2013) for using throughout the organization. A structure arrangement for risk management and an internal control system are made and systematically divided into a level of organization and function line with a reporting channel, and monitoring and assessment for both risk management and internal control. This is to ensure that PEA has used risk management and internal control system throughout the organization to serve an uncertainty of changing surroundings that may have any effects on its operation, and bring about positive results for the task of PEA, both at present and in the future.

In 2018, PEA has assessed its risk by considering both internal and external factors that may cause impacts on its operation and has prepared a response plan to build confidence for the organization to achieve its strategic objectives. By doing so, the PEA's Risk Management and Internal Control Committees have provided ideas for risk factors that PEA have managed. There are nine risk factors as followed:

1. A leverage of an organizational service and power distribution to be carried out continually
2. A loss management as a whole
3. An asset management for an ultimate efficiency
4. A success of investment of business model involved
5. A development of staff's potentials to serve an operation of main business and other related businesses
6. A cyber security
7. An organization transformation with digital technology
8. An analysis of business potential for affiliates and subsidiaries involved
9. An analysis of competitive capacity and income loss from medium-/large-sized businesses that have shifted to use alternative and renewable energy

With an internal control system, PEA has monitored and assessed, and improved its internal control system to ensure that the internal control system is modernized, sufficient, appropriate, and efficient to help prevent and reduce risks to at an acceptable level and has made a certified letter for PEA's internal control assessment to be submitted to the Ministry of Interior within 90 days after the end of the year. PEA has also sent a copy of certified letter to the PEA's Executive Committee as well as the Audit Committee.

The Committee has a meeting with PEA's executives to set measures to enable the organization to manage risk successfully with monitoring and assessment for risk management and internal control system, some situation tendencies that may cause significant impacts on the organization every quarter for 4 times, and one operational site visit to provide policies at regional electricity authority offices.

The PEA's Risk Management and Internal Control Committees have committed to perform their duties in regulating and managing key risks and internal control system efficiently and properly to enable the operation of PEA to achieve its objectives, and are truly confident that a joint participation by all staff in administrating risk management measures in accordance with the internal control system that PEA has arranged to enhance opportunities for a success, and reduce further problems and obstacles as well as an uncertainty that may happen to an overall operation of PEA. This will ensure that PEA is a leading organization that can move forwards to "The Electric Utility of the Future".



(Mr. Surong Burakul)

Chairman of Risk Management and Internal Control Committee, PEA

Auditor's Report

To: The Board of Directors of Provincial Electricity Authority

Opinion

The State Audit Office of the Kingdom of Thailand has audited the accompanying consolidated financial statements of Provincial Electricity Authority and its subsidiary (the Group), and separate financial statements of Provincial Electricity Authority (the Company), which comprise the consolidated and separate statements of financial position as at December 31, 2018, and 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 State Audit Office of the Kingdom of Thailand's opinion, the consolidated and separate financial statements referred to above present fairly, in all material respects, the consolidated financial position of Provincial Electricity Authority and its subsidiary, and separate financial position of Provincial Electricity Authority, respectively, as at December 31, 2018, and its consolidated and separate financial performance and its cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

The State Audit Office of the Kingdom of Thailand conducted the audit in accordance with Thai Standards on Auditing (TSAs). The State Audit Office of the Kingdom 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 State Audit Office of the Kingdom of Thailand's report. The State Audit Office of the Kingdom of Thailand is independent of the Group and the Company in accordance with the State Audit Standards issued by the State Audit Commission and the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions that are relevant to the State Audit Office of the Kingdom of Thailand's audit of the consolidated and separate financial statements, and has fulfilled other ethical responsibilities in accordance with these requirements. The State Audit Office of the Kingdom of Thailand believes that the audit evidence obtained is sufficient and appropriate to provide a basis for the State Audit Office of the Kingdom 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 the auditor's report thereon. The annual report is expected to be made available to the State Audit Office of the Kingdom of Thailand after the date of this auditor's report.

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

In connection with the audit of the consolidated and separate financial statements, the State Audit Office of the Kingdom 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 State Audit Office of the Kingdom of Thailand's knowledge obtained in the audit, or otherwise appears to be materially misstated.



When the State Audit Office of the Kingdom of Thailand reads the annual report, if the State Audit Office of the Kingdom of Thailand concludes that there is a material misstatement therein, the State Audit Office of the Kingdom 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 State Audit Office of the Kingdom 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 State Audit Office of the Kingdom 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 State Audit Office of the Kingdom of Thailand exercises professional judgment and maintain professional skepticism throughout the audit. The State Audit Office of the Kingdom 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 State Audit Office of the Kingdom 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 State Audit Office of the Kingdom of Thailand concludes that a material uncertainty exists, the State Audit Office of the Kingdom of Thailand is required to draw attention in the State Audit Office of the Kingdom of Thailand's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify the State Audit Office of the Kingdom of Thailand's opinion. The State Audit Office of the Kingdom of Thailand's conclusions are based on the audit evidence obtained up to the date of the State Audit Office of the Kingdom of Thailand's report. 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 State Audit Office of the Kingdom of Thailand is responsible for the direction, supervision and performance of the group audit. The State Audit Office of the Kingdom of Thailand remains solely responsible for the State Audit Office of the Kingdom of Thailand's audit opinion.

The State Audit Office of the Kingdom 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 State Audit Office of the Kingdom of Thailand identifies during the State Audit Office of the Kingdom of Thailand's audit.

May 27, 2019

English translation of the Auditor's Report has not been reviewed
by the State Audit Office of the Kingdom of Thailand



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF FINANCIAL POSITION
AS AT DECEMBER 31, 2018

Unit : Baht

Consolidated financial statements				
	Notes	Dec. 31, 2018	Dec. 31, 2017 (Restated)	Jan. 1, 2017 (Brought forward) (Restated)
Assets				
Current Assets				
Cash and cash equivalents	3.1, 5.1	3,427,643,764	3,468,958,206	2,114,251,315
Short-term investments	5.2	18,615,735,678	23,048,469,659	21,610,990,901
Trade accounts receivable	3.2, 4.2, 5.3	35,805,167,877	33,989,665,291	31,498,089,648
Other current receivables	5.4	736,140,735	648,452,756	392,434,436
Accrued revenues	5.5	1,968,193,881	4,273,364,139	5,784,083,731
Materials and supplies	3.3, 4.2, 5.6	2,145,836,307	1,893,215,115	1,871,268,070
Special-purpose deposits at financial institutions	3.4, 5.7	39,868,420,674	36,507,258,445	33,172,224,163
Undue input VAT		2,536,466,914	2,153,924,038	2,081,321,471
Advance payments to suppliers		1,729,475,224	1,966,920,110	1,404,359,783
Other current assets		304,937,453	130,870,391	109,534,193
Non-current assets held for sale	5.8	4,860,892	-	-
Total Current Assets		107,142,879,399	108,081,098,150	100,038,557,711
Non-current Assets				
Investments in associates	3.5, 5.9	366,595,672	304,541,728	272,046,070
Investments in joint venture	3.5, 5.10	5,386,039	5,434,289	-
Other non-current receivables	4.1	83,140,138	66,370,952	91,941,184
Constructions in progress	3.7, 4.2, 5.12	42,477,599,986	33,911,123,268	31,520,331,755
Investment property	3.8, 5.13	555,540,242	586,023,502	705,798,177
Property, plant and equipment	3.9, 5.14	263,478,587,553	253,297,161,830	242,498,008,933
Intangible assets	3.10, 5.15	1,021,866,224	1,770,503,688	2,590,321,928
Other non-current assets	4.1, 5.16	110,540,888	111,235,742	83,970,156
Total Non-current Assets		308,099,256,742	290,052,394,999	277,762,418,203
Total Assets		415,242,136,141	398,133,493,149	377,800,975,914

The notes to financial statements are an integral part of these financial statements.

PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF FINANCIAL POSITION
AS AT DECEMBER 31, 2018

Unit : Baht

Consolidated financial statements				
	Notes	Dec. 31, 2018	Dec. 31, 2017 (Restated)	Jan. 1, 2017 (Brought forward) (Restated)
Liabilities and Equity				
Current Liabilities				
Trade accounts payable	4.2	47,577,187,663	38,064,425,597	34,214,228,498
Other current payables	5.17	4,332,306,900	2,377,032,197	2,287,885,689
Accrued expenses		3,871,353,830	4,266,445,279	3,861,762,911
Current portion of long-term loans	3.11, 3.12, 5.18, 7.2, 7.3	7,831,840,812	7,538,410,551	5,234,599,704
Current portion of finance lease liabilities	5.19	1,160,554,883	1,020,374,225	884,896,194
Accrued interest payable on loans		630,942,467	697,038,417	730,134,011
Accrued remittance to the Ministry of Finance	5.20	8,511,500,000	8,164,500,000	7,094,500,000
Advance received per contract	4.2	1,153,583,242	1,392,436,381	1,262,949,830
Deposits payable	5.21	330,539,830	680,523,212	699,433,832
Other current liabilities	4.2, 5.22	295,579,531	322,845,013	357,253,692
Total Current Liabilities		75,695,389,158	64,524,030,872	56,627,644,361
Non-current Liabilities				
Long-term loans	3.11, 3.12, 5.18, 7.2, 7.3	63,747,736,688	68,612,498,966	72,840,392,754
Other non-current payables	4.1	72,363,165	70,186,665	96,015,485
Long-term provisions	3.13, 5.23	243,083,436	208,007,755	197,639,799
Construction obligations	4.2, 5.24	9,094,159,731	9,064,719,577	9,531,775,244
Finance lease liabilities	5.19	1,084,912,615	1,626,262,403	2,043,544,704
Deferred revenues	3.14, 5.25	51,032,361,727	48,890,424,439	46,175,035,148
Electricity usage guarantee	3.15, 5.26	29,240,737,965	27,353,866,171	25,544,476,466
Sales and service guarantee	4.2	902,964,486	938,352,507	899,353,870
Employee benefit obligations	3.17, 5.27	12,974,244,938	13,083,695,706	12,832,850,408
Other non-current liabilities	3.16, 4.1, 5.28	276,416,636	214,064,816	147,638,033
Total Non-current Liabilities		168,668,981,387	170,062,079,005	170,308,721,911
Total Liabilities		244,364,370,545	234,586,109,877	226,936,366,272

The notes to financial statements are an integral part of these financial statements.



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF FINANCIAL POSITION
AS AT DECEMBER 31, 2018

Unit : Baht

Consolidated financial statements				
	Notes	Dec. 31, 2018	Dec. 31, 2017 (Restated)	Jan. 1, 2017 (Brought forward) (Restated)
Equity				
Initial capital		87,003,887	87,003,887	87,003,887
Contributions from the government		4,802,500,915	4,802,500,915	4,802,500,915
Retained Earnings				
Appropriated		6,089,030	4,273,341	-
Unappropriated	4.2	165,982,171,764	158,653,605,129	145,975,104,840
Total Equity		170,877,765,596	163,547,383,272	150,864,609,642
Total Liabilities and Equity		415,242,136,141	398,133,493,149	377,800,975,914

The notes to financial statements are an integral part of these financial statements.

PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF FINANCIAL POSITION
AS AT DECEMBER 31, 2018

Unit : Baht

	Separate financial statements			
	Notes	Dec. 31, 2018	Dec. 31, 2017 (Restated)	Jan. 1, 2017 (Brought forward) (Restated)
Assets				
Current Assets				
Cash and cash equivalents	3.1, 5.1	2,542,238,359	2,997,425,587	1,815,000,305
Short-term investments	5.2	18,501,756,571	22,935,888,058	21,500,000,000
Trade accounts receivable	3.2, 4.2, 5.3	35,798,896,612	33,970,862,240	31,475,368,034
Other current receivables	5.4	712,577,221	644,655,014	391,796,684
Accrued revenues	5.5	1,947,890,424	4,179,630,107	5,778,825,350
Materials and supplies	3.3, 4.2, 5.6	2,140,515,454	1,886,871,481	1,868,272,776
Special-purpose deposits at financial institutions	3.4, 5.7	39,818,420,674	36,457,258,445	33,172,224,163
Undue input VAT		2,535,751,252	2,153,787,603	2,081,312,682
Advance payments to suppliers		1,698,836,478	1,970,997,587	1,404,359,783
Other current assets		302,798,781	129,963,241	109,500,994
Non-current assets held for sale	5.8	4,860,892	-	-
Total Current Assets		106,004,542,718	107,327,339,363	99,596,660,771
Non-current Assets				
Investments in subsidiary	3.6, 5.11	1,441,283,750	782,283,750	557,283,750
Other non-current receivables	4.1	77,049,093	66,370,952	91,941,184
Constructions in progress	3.7, 4.2, 5.12	42,206,717,303	33,911,123,268	31,520,331,755
Investment property	3.8, 5.13	555,540,242	586,023,502	705,798,177
Property, plant and equipment	3.9, 5.14	263,476,335,170	253,294,965,419	242,495,514,744
Intangible assets	3.10, 5.15	1,021,610,884	1,770,364,082	2,590,190,312
Other non-current assets	4.1, 5.16	96,937,573	97,240,196	82,656,478
Total Non-current Assets		308,875,474,015	290,508,371,169	278,043,716,400
Total Assets		414,880,016,733	397,835,710,532	377,640,377,171

The notes to financial statements are an integral part of these financial statements.



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF FINANCIAL POSITION
AS AT DECEMBER 31, 2018

Unit : Baht

	Separate financial statements			
	Notes	Dec. 31, 2018	Dec. 31, 2017 (Restated)	Jan. 1, 2017 (Brought forward) (Restated)
Liabilities and Equity				
Current Liabilities				
Trade accounts payable	4.2	47,577,187,663	38,064,425,597	34,214,228,498
Other current payables	5.17	4,271,898,689	2,350,018,354	2,249,368,103
Accrued expenses		3,837,532,200	4,190,255,703	3,858,358,447
Current portion of long-term loans	3.11, 3.12, 5.18, 7.2, 7.3	7,831,840,812	7,538,410,551	5,234,599,704
Current portion of financial lease liabilities	5.19	1,160,406,174	1,019,613,245	884,185,050
Accrued interest payable on loans		630,942,467	697,038,417	730,134,011
Accrued remittance to the Ministry of Finance	5.20	8,511,500,000	8,164,500,000	7,094,500,000
Advance received per contract	4.2	1,153,583,242	1,396,325,013	1,262,949,830
Deposits payable	5.21	330,539,830	680,523,212	699,433,832
Other current liabilities	4.2, 5.22	290,960,694	321,755,320	356,640,873
Total Current Liabilities		75,596,391,771	64,422,865,412	56,584,398,348
Non-current Liabilities				
Long-term loans	3.11, 3.12, 5.18, 7.2, 7.3	63,747,736,688	68,612,498,966	72,840,392,754
Other non-current payables	4.1	72,363,165	70,186,665	96,015,485
Long-term provisions	3.13, 5.23	243,083,436	208,007,755	197,639,799
Construction obligations	4.2, 5.24	9,094,159,731	9,064,719,577	9,531,775,244
Finance lease liabilities	5.19	1,084,912,615	1,626,174,914	2,042,757,455
Deferred revenues	3.14, 5.25	51,032,361,727	48,890,424,439	46,175,035,148
Electricity usage guarantee	3.15, 5.26	29,240,737,965	27,353,866,171	25,544,476,466
Sales and service guarantee	4.2	902,982,166	938,352,507	899,324,470
Employee benefit obligations	3.17, 5.27	12,972,725,917	13,082,835,784	12,831,935,361
Other non-current liabilities	3.16, 4.1, 5.28	276,416,636	214,064,816	147,638,033
Total Non-current Liabilities		168,667,480,046	170,061,131,594	170,306,990,215
Total Liabilities		244,263,871,817	234,483,997,006	226,891,388,563

The notes to financial statements are an integral part of these financial statements.

PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF FINANCIAL POSITION
AS AT DECEMBER 31, 2018

Unit : Baht

	Separate financial statements			
	Notes	Dec. 31, 2018	Dec. 31, 2017 (Restated)	Jan. 1, 2017 (Brought forward) (Restated)
Equity				
Initial capital		87,003,887	87,003,887	87,003,887
Contributions from the government		4,802,500,915	4,802,500,915	4,802,500,915
Unappropriated retained earnings	4.2	165,726,640,114	158,462,208,724	145,859,483,806
Total Equity		170,616,144,916	163,351,713,526	150,748,988,608
Total Liabilities and Equity		414,880,016,733	397,835,710,532	377,640,377,171

The notes to financial statements are an integral part of these financial statements.



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Consolidated financial statements		
	Notes	2018	2017 (Restated)
Revenues			
Sales and service revenues	4.2	497,658,241,704	481,151,040,602
Other revenues	4.2	1,865,169,953	1,971,213,511
Total Revenues	3.19, 5.30	499,523,411,657	483,122,254,113
Expenses			
Cost of electricity	4.2	417,876,920,354	395,775,979,404
Employee compensations		22,586,009,650	23,474,950,724
Employee benefit expenses		1,160,168,355	1,073,787,472
Executives' remunerations	3.20, 5.29	129,499,151	131,215,864
Preventive, repair and maintenance, and construction expenses		5,325,584,401	4,724,978,825
Depreciation and amortization expenses		20,219,997,889	19,703,082,174
Other operating expenses		8,563,627,726	8,154,582,594
Other expenses		145,951,853	349,521,226
Financial costs	3.21, 5.30	2,903,470,985	3,056,539,682
Total Expenses	5.30	478,911,230,364	456,444,637,965
Share of profit of associates and joint venture	5.30	71,138,194	71,479,316
Profit before tax	5.30	20,683,319,487	26,749,095,464
Income tax expense		1,050,852	-
Profit for the year		20,682,268,635	26,749,095,464
Other comprehensive income:			
Items that may be reclassified subsequently to profit or loss			
Loss on available-for-sale investments		(1,717,770)	-
Items that will not be reclassified to profit or loss			
Actuarial loss on post-employment benefit plans	3.17, 5.27	(168,541)	(208,710,201)
Total comprehensive income for the year		20,680,382,324	26,540,385,263

The notes to financial statements are an integral part of these financial statements.

PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Separate financial statements		
	Notes	2018	2017 (Restated)
Revenues			
Sales and service revenues	4.2	497,474,413,667	481,002,316,012
Other revenues	4.2	1,841,418,926	1,961,101,150
Total Revenues	3.19, 5.30	499,315,832,593	482,963,417,162
Expenses			
Cost of electricity	4.2	417,876,920,354	395,775,979,404
Employee compensations		22,561,809,855	23,459,208,440
Employee benefit expenses		1,159,677,798	1,073,490,065
Executives' remunerations	3.20, 5.29	128,062,306	130,191,209
Preventive, repair and maintenance, and construction expenses		5,324,413,262	4,714,055,241
Depreciation and amortization expenses		20,218,832,710	19,702,087,464
Other operating expenses		8,380,579,193	8,033,029,893
Other expenses		145,951,853	349,521,198
Financial costs	3.21, 5.30	2,903,436,102	3,056,454,964
Total Expenses	5.30	478,699,683,433	456,294,017,878
Profit for the year	5.30	20,616,149,160	26,669,399,284
Other comprehensive income:			
Items that may be reclassified subsequently to profit or loss			
Loss on available-for-sale investments		(1,717,770)	-
Items that will not be reclassified to profit or loss			
Actuarial loss on post-employment benefit plans	3.17, 5.27	-	(209,062,733)
Total comprehensive income for the year		20,614,431,390	26,460,336,551

The notes to financial statements are an integral part of these financial statements.



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF CHANGES IN EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Consolidated financial statements				
	Notes	Initial Capital and Contributions from the Government	Retained Earnings		Total Equity
			Appropriated	Unappropriated	
Balance as at January 1, 2017		4,889,504,802	-	145,975,104,840	150,864,609,642
Accumulated amount from:					
Adjustment for remittance to the Ministry of Finance for the year 2016 (addition)		-	-	(611,633)	(611,633)
Balance after adjustment		4,889,504,802	-	145,974,493,207	150,863,998,009
Legal reserve		-	4,273,341	(4,273,341)	-
Interim remittance to the Ministry of Finance from net profit for the year 2017	5.20	-	-	(5,692,500,000)	(5,692,500,000)
Reserve for remittance to the Ministry of Finance from net profit for the year 2017	5.20	-	-	(8,164,500,000)	(8,164,500,000)
Total comprehensive income for the year 2017		-	-	26,540,385,263	26,540,385,263
Balance as at January 1, 2018		4,889,504,802	4,273,341	158,653,605,129	163,547,383,272
Legal reserve		-	1,815,689	(1,815,689)	-
Interim remittance to the Ministry of Finance from net profit for the year 2018	5.20	-	-	(4,838,500,000)	(4,838,500,000)
Reserve for remittance to the Ministry of Finance from net profit for the year 2018	5.20	-	-	(8,511,500,000)	(8,511,500,000)
Total comprehensive income for the year 2018		-	-	20,680,382,324	20,680,382,324
Balance as at December 31, 2018		4,889,504,802	6,089,030	165,982,171,764	170,877,765,596

The notes to financial statements are an integral part of these financial statements.

PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF CHANGES IN EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Separate financial statements			
	Notes	Initial Capital and Contributions from the Government	Unappropriated Retained Earnings	Total Equity
Balance as at January 1, 2017		4,889,504,802	145,859,483,806	150,748,988,608
Accumulated amount from:				
Adjustment for remittance to the Ministry of Finance for the year 2016 (addition)	5.20	-	(611,633)	(611,633)
Balance after adjustment		4,889,504,802	145,858,872,173	150,748,376,975
Interim remittance to the Ministry of Finance from net profit for the year 2017	5.20	-	(5,692,500,000)	(5,692,500,000)
Reserve for remittance to the Ministry of Finance from net profit for the year 2017	5.20	-	(8,164,500,000)	(8,164,500,000)
Total comprehensive income for the year 2017		-	26,460,336,551	26,460,336,551
Balance as at January 1, 2018		4,889,504,802	158,462,208,724	163,351,713,526
Interim remittance to the Ministry of Finance from net profit for the year 2018	5.20	-	(4,838,500,000)	(4,838,500,000)
Reserve for remittance to the Ministry of Finance from net profit for the year 2018	5.20	-	(8,511,500,000)	(8,511,500,000)
Total comprehensive income for the year 2018		-	20,614,431,390	20,614,431,390
Balance as at December 31, 2018		4,889,504,802	165,726,640,114	170,616,144,916

The notes to financial statements are an integral part of these financial statements.



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY

STATEMENTS OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Note	Consolidated financial statements	
		2018	2017
Cash Flows from Operating Activities:			
Profit for the year		20,683,319,487	26,749,095,464
Adjustments of profit to net cash provided by (used in)			
operating activities:			
Depreciation and amortization		20,423,759,226	19,874,618,267
Bad debts and doubtful accounts		(57,327,470)	13,014,796
Provision for obsolete materials and supplies		(1,812,799)	(3,675,456)
Amortization of deferred revenues		(4,166,471,744)	(3,930,159,376)
Contribution revenues		(2,229,165)	-
Employee benefit obligations		(109,619,310)	42,135,097
Long-term provisions		37,538,392	9,884,956
(Gain) loss on disposal of assets		(18,999,066)	147,990,449
Loss (gain) on disposal of materials and supplies		4,505,350	(6,378,674)
(Gain) loss on foreign exchange		(32,921,465)	10,555,759
Other non-operating revenues		(3,474,341)	-
Revenues from renting or using other assets		(6,916,636)	-
Share of profit of associates		(71,138,194)	(71,479,316)
Interest income		(1,085,297,599)	(1,154,028,011)
Interest expense		2,901,766,235	3,054,550,099
Profit from operating activities before changes in operating assets and liabilities		38,494,680,901	44,736,124,054
Changes in operating assets (increase) decrease			
Trade accounts receivable		(1,721,198,130)	(2,497,927,971)
Other current receivables		(70,870,487)	(262,680,787)
Accrued revenues		2,156,865,867	(145,396,205)
Interest received		1,233,181,855	1,154,532,175
Materials and supplies		217,964,803	380,122,950
Special-purpose deposits at financial institutions		(3,361,162,230)	(3,335,034,281)
Undue input VAT		(382,542,876)	(72,602,567)

The notes to financial statements are an integral part of these financial statements.

PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY

STATEMENTS OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Note	Consolidated financial statements	
		2018	2017
Advance payments to suppliers		237,444,886	(562,560,328)
Other current assets		(174,067,062)	(21,336,197)
Other non-current receivables		(63,226,892)	25,570,231
Other non-current assets		694,854	(27,265,586)
Changes in operating liabilities increase (decrease)			
Trade accounts payable		9,512,762,066	3,850,197,099
Other current payables		2,363,794,554	20,327,991
Advance received per contract		(238,853,140)	129,486,551
Deposits payable		(349,983,382)	(18,910,620)
Accrued expenses		(396,142,302)	404,682,369
Other current liabilities		(29,728,192)	(33,925,679)
Other non-current payables		2,176,500	(25,828,820)
Construction obligations		29,440,154	(467,055,667)
Deferred revenues		6,103,840,858	6,645,548,667
Electricity usage guarantee		1,886,871,794	1,809,389,705
Sales and service guarantee		(35,388,020)	38,998,637
Employee gratuity fund		(5,733,472)	761,520
Other non-current liabilities		68,085,292	65,665,263
Net cash provided by operating activities		55,478,908,199	51,790,882,504
Cash Flows from Investing Activities:			
Proceeds from (paid in) short-term investments		4,434,490,551	(1,437,478,758)
Payment of investment in associates and joint venture		(32,200,000)	(5,473,130)
Dividend received from associates		41,332,500	39,022,500
Payment of constructions in progress		(35,752,373,443)	(26,843,229,497)
Payment of investment property		(1,950,000)	(425,374)
Payment of property, plant and equipment		(2,451,890,587)	(4,653,567,996)
Interest expense capitalized to constructions in progress		(205,597,461)	(293,320,470)
Payment of intangible assets		(22,018,435)	(25,609,232)
Net cash used in investing activities		(33,990,206,875)	(33,220,081,957)

The notes to financial statements are an integral part of these financial statements.



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY

STATEMENTS OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Note	Consolidated financial statements	
		2018	2017
Cash Flows from Financing Activities:			
Interest paid		(2,794,876,955)	(2,897,866,249)
Payment of long-term loans		(7,538,410,551)	(5,234,638,702)
Proceeds from long-term loans		3,000,000,000	3,300,000,000
Payment of financial lease liabilities		(1,193,728,260)	(1,251,588,705)
Remittance to the Ministry of Finance		(13,003,000,000)	(11,132,000,000)
Net cash used in financing activities		(21,530,015,766)	(17,216,093,656)
Net increase (decrease) in cash and cash equivalents		(41,314,442)	1,354,706,891
Cash and cash equivalents at the beginning of the period		3,468,958,206	2,114,251,315
Cash and cash equivalents at the end of the period	3.1, 5.1	3,427,643,764	3,468,958,206

Non-cash items

Payables from purchases of property, plant and equipment	60,933,908	29,356,628
Payables from purchases of constructions in progress	619,110,891	1,059,208,022

The notes to financial statements are an integral part of these financial statements.

PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY

STATEMENTS OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Note	Separate financial statements	
		2018	2017
Cash Flows from Operating Activities:			
Profit for the year		20,616,149,160	26,669,399,284
Adjustments of profit to net cash provided by (used in) operating activities:			
Depreciation and amortization		20,422,594,047	19,873,623,557
Bad debts and doubtful accounts		(57,327,470)	13,014,796
Provision for obsolete materials and supplies		(1,812,799)	(3,675,456)
Amortization of deferred revenues		(4,166,471,744)	(3,930,159,376)
Contribution revenues		(2,229,165)	-
Employee benefit obligations		(110,109,868)	41,837,690
Long-term provisions		37,538,392	9,884,956
(Gain) loss on disposal of assets		(18,999,066)	147,990,449
Loss (gain) on disposal of materials and supplies		4,505,350	(6,378,674)
(Gain) loss on foreign exchange		(32,921,465)	10,555,759
Other non-operating revenues		(3,474,341)	-
Interest income		(1,077,778,111)	(1,148,905,787)
Interest expense		2,901,731,352	3,054,465,381
Profit from operating activities before changes in operating assets and liabilities		38,511,394,272	44,731,652,579
Changes in operating assets (increase) decrease			
Trade accounts receivable		(1,734,124,619)	(2,501,846,535)
Other current receivables		(51,104,716)	(259,520,796)
Accrued revenues		2,083,131,833	(56,833,748)
Interest received		1,226,385,960	1,149,323,145
Materials and supplies		216,942,023	383,471,290
Special-purpose deposits at financial institutions		(3,361,162,230)	(3,285,034,281)
Undue input VAT		(381,963,649)	(72,474,921)

The notes to financial statements are an integral part of these financial statements.



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY

STATEMENTS OF CASH FLOWS

FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Note	Separate financial statements	
		2018	2017
Advance payments to suppliers		272,161,109	(566,637,805)
Other current assets		(172,835,540)	(20,462,247)
Other non-current receivables		(64,077,914)	25,570,231
Other non-current assets		302,622	(14,583,717)
Changes in operating liabilities increase (decrease)			
Trade accounts payable		9,512,762,066	3,850,197,099
Other current payables		2,330,400,186	31,831,735
Advance received per contract		(242,741,772)	133,375,183
Deposits payable		(349,983,382)	(18,910,620)
Accrued expenses		(352,723,503)	331,897,256
Other current liabilities		(33,257,336)	(34,402,553)
Other non-current payables		2,176,500	(25,828,820)
Construction obligations		29,440,154	(467,055,667)
Deferred revenues		6,103,840,858	6,645,548,667
Electricity usage guarantee		1,886,871,794	1,809,389,705
Sales and service guarantee		(35,370,340)	39,028,037
Employee gratuity fund		(5,733,472)	761,520
Other non-current liabilities		68,085,292	65,665,263
Net cash provided by operating activities		55,458,816,196	51,874,120,000
Cash Flows from Investing Activities:			
Proceeds from (paid in) short-term investments		4,435,888,058	(1,435,888,058)
Payment of investment in subsidiary		(659,000,000)	(225,000,000)
Payment of constructions in progress		(35,481,490,759)	(26,843,229,497)
Payment of investment property		(1,950,000)	(425,374)
Payment of property, plant and equipment		(2,450,713,703)	(4,652,909,616)
Interest expense capitalized to constructions in progress		(205,597,461)	(293,320,470)
Payment of intangible assets		(21,858,435)	(25,562,689)
Net cash used in investing activities		(34,384,722,300)	(33,476,335,704)

The notes to financial statements are an integral part of these financial statements.

PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
STATEMENTS OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2018

Unit : Baht

	Note	Separate financial statements	
		2018	2017
Cash Flows from Financing Activities:			
Interest paid		(2,794,876,955)	(2,897,866,249)
Payment of long-term loans		(7,538,410,551)	(5,234,638,702)
Proceeds from long-term loans		3,000,000,000	3,300,000,000
Payment of financial lease liabilities		(1,192,993,618)	(1,250,854,063)
Remittance to the Ministry of Finance		(13,003,000,000)	(11,132,000,000)
Net cash used in financing activities		(21,529,281,124)	(17,215,359,014)
Net increase (decrease) in cash and cash equivalents		(455,187,228)	1,182,425,282
Cash and cash equivalents at the beginning of the period		2,997,425,587	1,815,000,305
Cash and cash equivalents at the end of the period	3.1, 5.1	2,542,238,359	2,997,425,587

Non-cash items

Payables from purchases of property, plant and equipment	60,933,908	29,356,628
Payables from purchases of constructions in progress	619,110,891	1,059,208,022

The notes to financial statements are an integral part of these financial statements.



PROVINCIAL ELECTRICITY AUTHORITY AND ITS SUBSIDIARY
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2018

I. General Information

Provincial Electricity Authority was established as a state enterprise for public utility under Provincial Electricity Authority Act, B.E. 2503 (1960) and is located at 200 Ngamwongwan Road, Ladyao, Chatuchak, Bangkok 10900. The main objective of Provincial Electricity Authority is to generate, obtain, distribute and sell electricity energy to people, businesses and industrial sectors in 74 provinces throughout Thailand, with the exception of Bangkok, Nonthaburi, and Samut Prakan provinces.

Provincial Electricity Authority has extensive transactions and relationships with Electricity Generating Authority of Thailand (EGAT). Most of electricity energy sold to customers by Provincial Electricity Authority was purchased from EGAT. Accordingly, the financial statements may not necessarily be indicative of the conditions that would have existed or the results of operations that would have occurred if Provincial Electricity Authority has operated without such affiliations.

2. Basis of Financial Statement Presentation

2.1 Basis of consolidated and separate financial statements preparation

The consolidated and the separate financial statements have been prepared in accordance with Thai Financial Reporting Standards and generally accepted accounting principles under Accounting Act, B.E. 2543 (2000), which include accounting standards under the Accounting Profession Act, B.E. 2547 (2004), including interpretations and guidelines promulgated by the Federation of Accounting Professions (FAP), and the notification of Department of Business Development “Definition of the abbreviated components required in the Financial Statements (2nd Edition), B.E. 2559 (2016)”, dated October 11, B.E. 2559 (2016).

The consolidated and the separate financial statements have been prepared under the historical cost convention with the exception as disclosed in Note 3 Summary, of Significant Accounting Policies.

Consolidated financial statements include financial statements of Provincial Electricity Authority and financial statements of its subsidiary, PEA Encom International Company Limited after elimination of related company’s significant transactions and balances. PEA Encom International Co., Ltd. was established in Thailand in which Provincial Electricity Authority has controlled and held over 50% of paid-up share capital.

Shareholding proportion and amount of investments in associates, investments in joint venture and investments in subsidiary are presented in Notes 5.9, 5.10 and 5.11, respectively.

Investments in associates and joint venture have been presented in the consolidated financial statements under the equity method.

Separate financial statements include financial statements of Provincial Electricity Authority, which include transactions of PEA Employee Gratuity Fund and investments in subsidiary and associates have been presented in the separate financial statements under the cost method.

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



2.2 Thai Accounting Standards, Thai Financial Reporting Standards, Thai Standing Interpretations and Thai Financial Reporting Interpretations

are announced in Government Gazette as follows:

2.2.1 Effective for the current accounting period

Provincial Electricity Authority has applied Thai accounting standards, Thai financial reporting standards, Thai standing interpretations and Thai financial reporting interpretations, which are newly issued and revised by FAP which are effective for accounting periods beginning on or after January 1, 2018 onward. The management of Provincial Electricity Authority determined that the applications will not have significant impacts on accounting policies and the financial statements of Provincial Electricity Authority and its subsidiary.

2.2.2 Effective for accounting periods beginning on or after January 1, 2019 are as follows:

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



No.3 (revised 2018)	Business Combinations
No.4 (revised 2018)	Insurance Contracts
No.5 (revised 2018)	Non-current Assets Held for Sale and Discontinued Operations
No.6 (revised 2018)	Exploration for and Evaluation of Mineral Resources
No.8 (revised 2018)	Operating Segments
No.10 (revised 2018)	Consolidated Financial Statements
No.11 (revised 2018)	Joint Arrangements
No.12 (revised 2018)	Disclosure of Interests in Other Entities
No.13 (revised 2018)	Fair Value Measurement
No.15 (revised 2018)	Revenue from Contracts with Customers

Thai Standing Interpretations

No.10 (revised 2018)	Title Government Assistance - No Specific Relation to Operating Activities
No.15 (revised 2018)	Operating Leases - Incentives
No.25 (revised 2018)	Income Taxes - Changes in the Tax Status of an Entity or its Shareholders
No.27 (revised 2018)	Evaluating the Substance of Transactions Involving the Legal Form of a Lease
No.29 (revised 2018)	Service Concession Arrangements: Disclosures
No.32 (revised 2018)	Intangible Assets - Web Site Costs

Thai Financial Reporting Interpretations

No.1 (revised 2018)	Title Changes in Existing Decommissioning, Restoration and Similar Liabilities
No.4 (revised 2018)	Determining whether an Arrangement contains a Lease
No.5 (revised 2018)	Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds
No.7 (revised 2018)	Applying the Restatement Approach Under TAS 29 (revised 2018) Financial Reporting in Hyperinflationary Economies
No.10 (revised 2018)	Interim Financial Reporting and Impairment
No.12 (revised 2018)	Service Concession Arrangements
No.14 (revised 2018)	TAS 19 (revised 2018) - The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction
No.17 (revised 2018)	Distributions of Non-cash Assets to Owners
No.20 (revised 2018)	Stripping Costs in the Production Phase of a Surface Mine
No.21 (revised 2018)	Levies
No.22 (revised 2018)	Foreign Currency Transactions and Advance Consideration

The management of Provincial Electricity Authority and its subsidiary have assessed that the adoption of these new and revised Thai accounting standards, Thai financial reporting standards, Thai standing interpretations, and Thai financial reporting interpretations as mentioned above, will not have significant impacts on the financial statements for the period when they are initially applied.

3. Summary of Significant Accounting Policies

3.1 Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, deposits at banks and financial institutions with original maturities of 3 months or less, excluding deposits at banks used as collateral.

3.2 Trade accounts receivable

Trade accounts receivable are stated at net realizable value. Allowance for doubtful accounts are based on contingent loss from uncollectible receivables which are estimated from historical collection experiences and a review of the current status of the non-governmental or state enterprise receivables outstanding at the statements of financial position date, after deducting electricity usage guarantee in accordance with the regulation of the Ministry of Finance regarding “Accounting and Finance of Government Enterprise, B.E. 2548 (2005)” and a resolution of PEA’s Audit Committee Meeting No. 3/2549 dated on March 10, 2006 as follows:

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

Increases and decreases in allowance for doubtful accounts are recognized as expenses or income for the period when incurred.

3.3 Materials and supplies

Materials and supplies are stated at the lower of the cost or net realizable value. The cost is determined using the weighted average cost method. Allowance is made in full for obsolete materials and supplies and for materials and supplies pending for improvement.

3.4 Special-purpose deposits at financial institutions

Special-purpose deposits at financial institutions consist of:

3.4.1 Special-purpose deposits at financial institutions, which are presented as **current assets** in statements of financial position, are deposits to be used within one accounting period and with the specific purposes and conditions. Special-purpose deposits comprises of electricity usage guarantee fund, sinking fund for repayment of bonds, and restricted cash. All of which can be used in Provincial Electricity Authority’s activities in case of Provincial Electricity Authority having the deficits in working capital. Interest from electricity usage guarantee fund is used for benefits of electricity users and KFW special fund is used for scholarships, training, analysis and research.

3.4.2 Special-purpose deposits at financial institutions, which are presented as **non-current assets** in the statements of financial position, are deposits to be used longer than one accounting period and cannot be used for operating activities are PEA Employee Gratuity Fund.



3.5 Investments in associates and joint venture

Investments in associates and joint venture are presented in the consolidated financial statements under the equity method.

3.6 Investments in subsidiary

Investments in subsidiary are presented in the separate financial statements under the cost method.

In case an impairment of investment has occurred, the impairment loss of investment will be recognized in the statements of comprehensive income.

3.7 Constructions in progress

Constructions in progress include construction costs, borrowing costs incurred on direct costs associated with the borrowing of funds used for the construction, and other costs which are directly related to construction or preparation of the property for its intended use. Constructions in progress do not include calculation of depreciation.

3.8 Investment property

Investment property comprises of property and plant acquired for used in the operation but has not been utilized and/or property and plant owned to earn rentals. Provincial Electricity Authority has adopted to measure using the cost method. Subsequently investment property is presented at cost after deducting accumulated depreciation (if any).

3.9 Property, plant and equipment

Provincial Electricity Authority's policies for property, plant and equipment, and depreciation are summarized as follows:

Property, plant and equipment are initially recognized at cost which is calculated from purchase prices plus any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operation in the manner intended. Self-constructed assets are recorded as construction costs, consisting of material costs, direct labor and construction-related expenses.

Property is stated at cost. Plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses of assets (if any).

Property comprises of land used in the operation and land acquired for operating objective with certain plan of usage within 1 year.

Depreciation of plant and equipment is calculated using the straight-line method over the estimated useful lives of the assets as follows:

	Percentage per annum
Buildings and constructions	3 and 6.25
Electricity generating systems	3 - 20
Electricity distributing systems	4 - 20
Furniture, tools, equipment and vehicles	4 - 20



When property, plant and equipment are impaired, the impairment losses will be recognized in the statements of comprehensive income.

In case of disposal, Provincial Electricity Authority writes off cost of assets and its accumulated depreciation from the accounts, and recognizes gain or loss on disposal of assets as other incomes or other expenses in the statements of comprehensive income.

3.10 Intangible assets

Intangible assets comprise of computer software licenses and computer software systems for core business that are stated at cost less accumulated amortization and allowance for impairment of assets (if any).

Amortization of computer software licenses and computer software systems for core business is calculated using the straight-line method over the lease period and recognized as expenses in the statements of comprehensive income.

Impairment loss of intangible assets will be recognized as operating expenses in the statements of comprehensive income when incurred.

3.11 Foreign currency transactions

Foreign currency transactions are translated into Thai Baht by using the exchange rates prevailing at the transaction date. Monetary assets and liabilities at the statements of financial position date which are denominated in foreign currencies are translated into Baht at the reference exchange rates announced by the Bank of Thailand at such date. Gains or losses on exchange arising on settlements and translations are recognized as revenues or expenses for the period when incurred.

3.12 Financial instruments

Financial assets, presented at the statement of financial position date of Provincial Electricity Authority, comprise of cash and cash equivalents, and trade accounts receivable. Financial liabilities are obligations under contracts comprising trade accounts payable, other accounts payable, other current liabilities, short-term loans, and long-term loans.

3.13 Long-term provisions

Provincial Electricity Authority records the provisions in the statements of financial position if Provincial Electricity Authority has contingent liabilities arising from legal claims or result of past events which is probable that an outflow of resources embodying economic benefits will be required to settle the obligations, and it can be estimated with sufficient reliability. The actual results may differ from those estimates.

Provincial Electricity Authority recognizes the provisions with the best estimate of the expenditure required to settle the present obligation at the statement of financial position date by considering risks and uncertainties that inevitably surround obligations. The provisions are measured based on expected cash flows associated with the present obligation as present value of the expected cash flows associated with that present obligation.

Provisions due within 1 year are classified as short-term provisions and provisions due more than 1 year are classified as long-term provisions.

3.14 Deferred revenues

3.14.1 Contributions for constructing electricity distributing systems represent cash collected from people who request to use the electricity in order to reduce the burden of Provincial



Electricity Authority for construction of the electricity distributing systems. Ownership of the systems, including responsibility for maintenance and repair belongs to Provincial Electricity Authority. Such contributions are presented as deferred revenues in the statements of financial position and recognized as revenues at the rate of 5% per annum when the construction is completed (the rate is equal to the depreciation rate of Provincial Electricity Authority's electricity distributing system assets).

3.14.2 Revenues from transferring of operating assets represent assets received from donations which are used in operations. Most of such assets are electricity distribution systems that the electricity users donate to Provincial Electricity Authority, which Provincial Electricity Authority is responsible for maintenance. Such assets are presented as deferred revenues from acquisitions of donated assets in the statements of financial position and recognized as revenues at the rate in accordance with depreciation rates of such assets over their useful lives.

Assets received from donations, which are not used in operations are recognized as other non-operating revenues in the statements of comprehensive income in the period of acquisitions.

3.14.3 Contribution revenues from foreign financial institutions represent contributions from foreign financial institutions in forms of interest discount to be used for various purposes of Provincial Electricity Authority. Such revenues are presented as deferred revenues in the statements of financial position and recognized as revenues based on the actual amount of expenses incurred.

3.14.4 Deferred revenues from rental represent rental income which Provincial Electricity Authority has received in advance from third parties who rent the raw lands of Provincial Electricity Authority. And, deferred revenues will be recognized as rental income from investment property over the lease period.

3.15 Electricity usage guarantee

Electricity usage guarantee is the money that electricity users deposit to Provincial Electricity Authority for guarantee of electricity usage. Provincial Electricity Authority deposits into the bank account named "Electricity Usage Guarantee Fund" to reserve fund for refunding of electricity usage guarantee to electricity users. Any interest income earned is separately deposited in the bank account named "Interest from Electricity Usage Guarantee Fund." Provincial Electricity Authority will use interest of the fund to repaid as interest on deposit for electricity usage guarantee to the electricity users according to the requirement of the Energy Regulatory Commission and will use in activities for public interests and/or beneficial activities for electricity users.

Provincial Electricity Authority has set the Regulation on Supervision of Electricity Usage Guarantee Fund, B.E.2557 (2014) and appointed the committee which is responsible for supervising and controlling an operation of Electricity Usage Guarantee Fund and interest from Electricity Usage Guarantee Fund. Provincial Electricity Authority has to made fund transfer at the amount equal to the net increase in electricity usage guarantee for each month to the "Electricity Usage Guarantee Fund" account. In case of working capital deficiency or liquidity difficulty, Provincial Electricity Authority can use the electricity usage guarantee fund as a working capital under consideration and approval of the Board of Directors of Provincial Electricity Authority. Then, Provincial Electricity Authority will be required to repay to electricity usage guarantee fund for not less than Baht 100 million on each month by depositing into the "Electricity Usage Guarantee Fund" account until the amount is fully covered. Also, Provincial Electricity Authority is required to make a payment of interest at the interest rate of savings account for state enterprises specified by Krung Thai Bank Public Company Limited by depositing into the "Interest from Electricity Usage Guarantee Fund". In case of working capital deficiency or liquidity difficulty, the repayment can be postponed under the approval of the Governor and should be reported to the Board of Directors.

3.16 Employee Gratuity Fund

Provincial Electricity Authority has established Employee Gratuity Fund for the purpose of giving aid to employees in case of termination without guilt in accordance with the Regulations of Provincial Electricity Authority on Employee Gratuity Fund and Benefit for PEA Employees, B.E. 2522 (1979). Provincial Electricity Authority pays monthly contribution at the rate of 10% of employee salaries and recognizes as an expense in the statements of comprehensive income of Provincial Electricity Authority. In this regard, transactions of employee gratuity fund are included in the financial statements of Provincial Electricity Authority and also eliminate the related party transactions.

3.17 Employee benefits obligation

3.17.1 Short-term employee benefits

Short-term employee benefits comprise salaries, overtimes, bonuses, compensated absences and other short-term benefits in accordance with the contract of employment. Short-term employee benefits will be recognized as employee expenses in the statements of comprehensive income on accrual basis.

3.17.2 Post-employment benefits

3.17.2.1 Defined contribution plan

Provincial Electricity Authority has established the provident fund in accordance with the Provident Fund Act, B.E. 2530 (1987) which employees have option to pay into the fund accumulated at the rate of 3 - 15% of the salary of each and Provincial Electricity Authority will pay into the fund at the rate of 9 - 11% of salary of members of the fund to defined contribution plans.

Provincial Electricity Authority's contributions are recognized as employee expenses in the statements of comprehensive income. Moreover, Provincial Electricity Authority has also established employee gratuity fund according to Note 5.28.

3.17.2.2 Defined benefit plan

Provincial Electricity Authority's defined benefit plan comprises remuneration under the State Enterprise Labor Relations Act, B.E. 2543 (2000), compensation under Labor Law, compensated absences of employees who are dismissed without committing an offense under the law, unused portion of personal leaves of employees, souvenir for retired employees and other post-employment benefits in accordance with the contract of employment.

Since January 1, 2011, the estimation of employee benefits are calculated by the actuarial technique using the Projected Unit Credit Method. This method estimate the present value of expected future payments which are calculated on the basis of employee salaries, turnover rate, mortality, length of service and other factors.

Provincial Electricity Authority recognizes provisions for defined benefit plan in the statements of financial position at net present value of employee benefit obligations based on unrecognized past service cost and fair value of project assets (if any). Provincial Electricity Authority also recognizes defined benefit plan expenses as expenses related to employment in the statements of comprehensive income.

Actuarial gains (losses) occurred are recognized in the statements of comprehensive income.



3.17.3 Other long-term employee benefits

Provincial Electricity Authority has given a welfare for employees who work for the complete agreed period as other long-term employee benefits. Provincial Electricity Authority recorded these employee benefits by using projected unit credit method which are calculated by the actuary.

3.18 Technology research and development fund

Provincial Electricity Authority has established technology research and development fund, according to the policy of the Office of the National Economic and Social Development Board, to continuously promote and support existing and new technology research and development in highly efficient manner. The fund aims to reduce the dependence and importation of technology from abroad. Consequently, Provincial Electricity Authority is able to apply the results of research and development to its operations in the highest efficiency. Provincial Electricity Authority has contributed from its budget as a fund granted to domestic educational institutions, domestic research and development institutions and business units within Provincial Electricity Authority.

The contributions of technology research and development are recognized as an expense when incurred.

3.19 Revenue recognition

Sales of electricity energy are recognized on a monthly basis in accordance with a cyclical recording of electricity usage units of the customers from electric meters.

Sales of electricity equipment are recognized when goods are delivered, and the ownership is transferred to customers.

Income from constructions for electricity users is recognized based on proportion to actual costs incurred.

Deferred contributions for construction are recognized as income at the rate of 5% per annum (equal to depreciation rate of Provincial Electricity Authority's electricity distributing system assets).

Interest income is recognized as it accrues on a time proportion basis taking into account the principal amount outstanding and the effective interest rate.

3.20 Executives' remunerations

Executives' remunerations represent the compensation paid to directors and management who have the power to decide which includes both of monetary and remunerations benefit.

3.21 Financial costs

Financial costs represent costs incurred from seeking operational funds which include interest expense and fee paid.

Interest expense and other expenses, directly attributable to constructions of buildings and electricity generating and distributing systems, are incurred from loans made specifically for purpose of acquiring fixed assets are capitalized as costs of assets.

Interest and other expenses incurred subsequent to the completion of construction are recognized as expenses for the period in the statements of comprehensive income.

3.22 Related party transactions

Related parties are individuals or enterprises that control or are controlled, directly or indirectly by Provincial Electricity Authority, or are under common control with Provincial Electricity Authority. Moreover, related parties also include associates and individuals who have direct or indirect



voting rights that result in significant influence on Provincial Electricity Authority, executives, directors or employees and close member of that person's family is related to Provincial Electricity Authority's executives who have control over Provincial Electricity Authority.

3.23 Use of judgments and significant accounting estimates

To prepare of financial statements in conformity with generally accepted accounting principles, management has to make estimates and several assumptions that affect amount of revenues, expenses, assets and liabilities and disclosure of contingent assets and liabilities. Actual results may differ from the estimates such as allowance for doubtful accounts, allowance for obsolete materials and supplies and allowance for loss or misstated or lost materials.

3.24 Operating Segments

Provincial Electricity Authority presents operating segments by geographical areas in which Provincial Electricity Authority's management, administration and financial reporting structure are criteria for determination segmentation.

Provincial Electricity Authority has 5 geographical segments which include northern, northeastern, central, southern areas and headquarter. Each area is responsible for distributing electricity in its own area. The headquarter is responsible for setting policies and plans as well as providing all necessary materials to the regional areas.

According to PEA accounting policies for operating segments, each of the operating segments recognize revenues based on the amount of electricity sold in its own areas. Provincial Electricity Authority also allocates its cost of sales from headquarter to each of the operating segments based on actual cost occurred.

Operating income of each segment derives from total revenues deducted cost and operating expenses.

Assets of each regional area are those assets used in operating activities by each of the operating segment or related activities.

Liabilities of each regional area are those liabilities incurred from operating activities by each of the operating segment and related activities, except trade accounts payable, long-term loans, accrued remittance to the Ministry of Finance and liabilities under financial leases which the headquarter does not allocate those items to each of the operating segments.

4. Presentation, retrospective restatement, and reclassification of the financial statements

4.1 Presentation of the financial statements

Provincial Electricity Authority has made a new presentation of the financial statements to be in accordance with the notification of Department of Business Development "Definition of the abbreviated components required in the Financial Statements (2nd Edition), B.E. 2559 (2016)". Items presented in statements of financial position as at December 31, 2017 and as at January 1, 2017 are adjusted to be in accordance with the presentation of statements of financial position as at December 31, 2018.



Unit : Million Baht

Consolidated financial statements			
	Before	Adjustment on a new presentation	After
Statements of financial position As at December 31, 2017			
Other non-current receivables	-	66.37	66.37
Other non-current assets	177.61	(66.37)	111.24
Other non-current payables	-	70.19	70.19
Employee gratuity fund	8.64	(8.64)	-
Other non-current liabilities	275.61	(70.19)	205.42
		8.64	214.06
Statements of financial position Balance as at January 1, 2017			
Other non-current receivables	-	91.94	91.94
Other non-current assets	175.91	(91.94)	83.97
Other non-current payables	-	96.02	96.02
Employee gratuity fund	7.88	(7.88)	-
Other non-current liabilities	235.78	(96.02)	139.76
		7.88	147.64

Unit : Million Baht

Separate financial statements			
	Before	Adjustment on a new presentation	After
Statements of financial position As at December 31, 2017			
Other non-current receivables	-	66.37	66.37
Other non-current assets	163.61	(66.37)	97.24
Other non-current payables	-	70.19	70.19
Employee gratuity fund	8.64	(8.64)	-
Other non-current liabilities	275.61	(70.19)	205.42
		8.64	214.06
Statements of financial position Balance as at January 1, 2017			
Other non-current receivables	-	91.94	91.94
Other non-current assets	174.60	(91.94)	82.66
Other non-current payables	-	96.02	96.02
Employee gratuity fund	7.88	(7.88)	-
Other non-current liabilities	235.78	(96.02)	139.76
		7.88	147.64

4.2 Retrospective restatement and reclassification of the financial statements

4.2.1 Retrospective restatement of the financial statements

Provincial Electricity Authority has restated the financial statements retroactively due to accounting records on receivables from construction obligations and fines from investment made under budgeted plans. The retrospective restatement has affected the statements of financial position in the consolidated and the separate financial statements as at December 31, 2017 and January 1, 2017, the statements of comprehensive income in the consolidated and the separate financial statements and the statements of changes in equity in the consolidated and the separate financial statements for the year ended December 31, 2017.

4.2.2 Reclassification of the financial statements

Some of items presented in the statements of financial position as at December 31, 2017 and January 1, 2017, and the statements of comprehensive income for the year ended December 31, 2017 are reclassified in accordance with the presentation of the statements of financial position as at December 31, 2018 and the statements of comprehensive income for the year ended December 31, 2018.

Unit : Million Baht

	Consolidated financial statements			
	Before	Retrospective restatement	Reclassification	After
Statements of financial position As at December 31, 2017				
Trade accounts receivable	34,458.97	(469.30)	-	33,989.67
Materials and supplies	4,787.53	-	(2,894.31)	1,893.22
Constructions in progress	31,016.81	-	2,894.31	33,911.12
Trade accounts payable	37,236.14	782.82	45.47	38,064.43
Advance received per contract	1,654.31	(261.87)	-	1,392.44
Other current liabilities	436.71	-	(113.86)	322.85
Construction obligations	9,272.15	(207.43)	-	9,064.72
Sales and service guarantee	869.96	-	68.39	938.35
Unappropriated retained earnings	159,436.43	(782.82)	-	158,653.61
Statements of financial position Beginning balance as at January 1, 2017				
Trade accounts receivable	32,006.42	(508.33)	-	31,498.09
Materials and supplies	2,407.64	-	(536.37)	1,871.27
Constructions in progress	30,983.96	-	536.37	31,520.33
Trade accounts payable	34,170.46	-	43.77	34,214.23
Advance received per contract	1,544.35	(281.40)	-	1,262.95
Other current liabilities	472.78	-	(115.53)	357.25
Construction obligations	9,758.70	(226.93)	-	9,531.77
Sales and service guarantee	827.59	-	71.76	899.35
Statements of comprehensive income For the year ended December 31, 2017				
Sales and service revenues	461,766.46	-	19,384.58	481,151.04
Other revenues	2,139.79	-	(168.58)	1,971.21
Cost of electricity	375,777.16	782.82	19,216.00	395,775.98

Unit : Million Baht

Consolidated financial statements				
	Before	Retrospective restatement	Reclassification	After
Statement of changes in equity Balance as at December 31, 2017				
Unappropriated retained earnings	159,436.43	(782.82)	-	158,653.61
Total equity	164,330.20	(782.82)	-	163,547.38

Unit : Million Baht

Separate financial statements				
	Before	Retrospective restatement	Reclassification	After
Statements of financial position As at December 31, 2017				
Trade accounts receivable	34,440.16	(469.30)	-	33,970.86
Materials and supplies	4,781.18	-	(2,894.31)	1,886.87
Constructions in progress	31,016.81	-	2,894.31	33,911.12
Trade accounts payable	37,236.14	782.82	45.47	38,064.43
Advance received per contract	1,658.20	(261.88)	-	1,396.32
Other current liabilities	435.62	-	(113.86)	321.76
Construction obligations	9,272.15	(207.43)	-	9,064.72
Sales and service guarantee	869.96	-	68.39	938.35
Unappropriated retained earnings	159,245.03	(782.82)	-	158,462.21
Statements of financial position Beginning balance as at January 1, 2017				
Trade accounts receivable	31,983.70	(508.33)	-	31,475.37
Materials and supplies	2,404.64	-	(536.37)	1,868.27
Constructions in progress	30,983.96	-	536.37	31,520.33
Trade accounts payable	34,170.46	-	43.77	34,214.23
Advance received per contract	1,544.35	(281.40)	-	1,262.95
Other current liabilities	472.17	-	(115.53)	356.64
Construction obligations	9,758.70	(226.93)	-	9,531.77
Sales and service guarantee	827.56	-	71.76	899.32
Statements of comprehensive income For the year ended December 31, 2017				
Sales and service revenues	461,617.74	-	19,384.58	481,002.32
Other revenues	2,129.68	-	(168.58)	1,961.10
Cost of electricity	375,777.16	782.82	19,216.00	395,775.98
Statement of changes in equity Balance as at December 31, 2017				
Unappropriated retained earnings	159,245.03	(782.82)	-	158,462.21
Total equity	164,134.53	(782.82)	-	163,351.71

5. Supplementary information

5.1 Cash and cash equivalents consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Cash	37.49	41.26	37.49	41.25
Cash at banks: - Current accounts	2.66	1.27	2.66	1.27
- Savings accounts	2,948.51	3,190.54	2,502.09	2,954.91
- Fixed deposits	438.98	235.89	-	-
Total	3,427.64	3,468.96	2,542.24	2,997.43

5.2 Short-term investments

Short-term investments presented in the consolidated and separate financial statements are fixed deposits at the financial institutions with maturity of 12 months, short-term debt instruments which are zero-coupon bonds and available-for-sale securities.

As at December 31, 2018 and 2017, Provincial Electricity Authority and its subsidiary have short-term investments in the consolidated financial statement amounting Baht 18,615.74 million and Baht 23,048.47 million, respectively.

As at December 31, 2018 and 2017, Provincial Electricity Authority has short-term investments in the separate financial statement amounting Baht 18,501.76 million and Baht 22,935.89 million, respectively.

Provincial Electricity Authority has received 352,725 ordinary shares from WP Energy Public Company Limited on March 22, 2018, at a price of Baht 9.85 per share, amounting to Baht 3.47 million, which are presented as short-term investments in the consolidated financial statements. As at December 31, 2018, the ordinary shares have a fair value of Baht 4.98 per share.

5.3 Trade accounts receivable consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Accounts receivable from sales of electricity	34,625.25	32,912.02	34,625.25	32,912.02
Accounts receivable from sales of equipment and rendering services	1,179.92	1,077.65	1,173.65	1,058.84
Total	35,805.17	33,989.67	35,798.90	33,970.86



5.3.1 Accounts receivable from sales of electricity are as follows:

Unit : Million Baht

Outstanding period	Consolidated and Separate financial statements			
	Dec. 31, 2018			Dec. 31, 2017
	Public Sector	Private Sector	Total	Total
1 month - 6 months	4,413.32	32,035.02	36,448.34	34,937.01
Over 6 months - 1 year	311.07	69.00	380.07	101.22
Over 1 year	117.14	1,349.43	1,466.57	1,479.23
	4,841.53	33,453.45	38,294.98	36,517.46
Less Undue output VAT	(315.63)	(2,169.11)	(2,484.74)	(2,367.65)
	4,525.90	31,284.34	35,810.24	34,149.81
Less Allowance for doubtful accounts	-	(1,184.99)	(1,184.99)	(1,237.79)
Total	4,525.90	30,099.35	34,625.25	32,912.02

5.3.2 Accounts receivable from sales of equipment and rendering of services are as follows:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Accounts receivable from sales and rendering services	390.72	335.24	384.70	316.43
Accounts receivable from construction obligations	531.02	633.09	531.02	633.09
Other accounts receivable	410.06	247.86	409.16	247.86
	1,331.80	1,216.19	1,324.88	1,197.38
Less Undue output VAT	(86.51)	(76.47)	(85.86)	(76.47)
	1,245.29	1,139.72	1,239.02	1,120.91
Less Allowance for doubtful accounts	(65.37)	(62.07)	(65.37)	(62.07)
Total	1,179.92	1,077.65	1,173.65	1,058.84

5.4 Other current receivables consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Other accounts receivable	717.73	615.81	699.49	615.81
Prepaid expenses	18.41	32.64	13.09	28.84
Total	736.14	648.45	712.58	644.65

5.5 Accrued revenues consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Accrued interest	279.62	427.92	278.34	426.95
Accrued revenues from the Power Development Fund	1,384.15	3,549.47	1,384.15	3,549.47
Other accrued revenues	304.42	295.97	285.40	203.21
Total	1,968.19	4,273.36	1,947.89	4,179.63



5.6 Materials and supplies consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Materials and supplies				
Operating materials and supplies	41.80	37.84	41.80	37.84
Materials and supplies for construction and maintenance	395.66	448.40	390.34	442.06
Materials and supplies for repair	1,255.72	1,119.00	1,255.72	1,119.00
Demolition materials and supplies, and obsolete materials and supplies	471.60	302.90	471.60	302.90
Materials and supplies pending for adjustments	53.80	61.36	53.80	61.36
	2,218.58	1,969.50	2,213.26	1,963.16
Materials and supplies in transit	10.45	8.72	10.45	8.72
	2,229.03	1,978.22	2,223.71	1,971.88
Less Allowance for obsolete materials and supplies	(29.39)	(23.65)	(29.39)	(23.65)
Allowance for loss or misstated or lost materials and supplies under investigation	(53.80)	(61.36)	(53.80)	(61.36)
Total	2,145.84	1,893.21	2,140.52	1,886.87

For the years ended December 31, 2018 and 2017, allowance for obsolete materials and supplies and allowance for loss or misstated or lost materials and supplies under investigation are recognized as a reversal of expenses amounting to Baht 1.81 million and Baht 3.67 million, respectively.

5.7 Special-purpose deposits at financial institutions consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Electricity usage guarantee fund				
(Note 5.26)				
Current accounts	0.001	0.001	0.001	0.001
Savings accounts	0.013	0.012	0.013	0.012
Fixed deposits	29,096.46	27,207.37	29,096.46	27,207.37
	29,096.48	27,207.38	29,096.48	27,207.38
Sinking fund for repayment of bonds				
Current accounts	0.001	0.001	0.001	0.001
Savings accounts	1,282.41	779.40	1,282.41	779.40
Fixed deposits	930.00	2,030.49	930.00	2,030.49
	2,212.41	2,809.89	2,212.41	2,809.89
Interest from electricity usage guarantee fund				
Current accounts	0.001	0.001	0.001	0.001
Savings accounts	29.92	10.27	29.92	10.27
Fixed deposits	5,173.65	4,563.37	5,173.65	4,563.37
	5,203.57	4,573.64	5,203.57	4,573.64
KFW special fund				
Current accounts	0.001	0.001	0.001	0.001
Savings accounts	33.21	16.44	33.21	16.44
Fixed deposits	169.21	169.21	169.21	169.21
	202.42	185.65	202.42	185.65
Restricted cash				
Current accounts	0.004	0.004	0.004	0.004
Savings accounts	3,103.54	1,680.70	3,103.54	1,680.70
Fixed deposits	50.00	50.00	-	-
	3,153.54	1,730.70	3,103.54	1,680.70
Total	39,868.42	36,507.26	39,818.42	36,457.26



Electricity usage guarantee fund, sinking fund for repayment of bonds and restricted cash are deposits at financial institutions that can be used in Provincial Electricity Authority's activities in case of Provincial Electricity Authority have deficits in working capital. Interest from electricity usage guarantee fund and interest from KFW fund are deposited at financial institutions which are restricted for specific purposes as determined by Provincial Electricity Authority.

Sinking fund for repayment of bonds is used as PEA guarantee for repayment of bonds at the maturity date. Provincial Electricity Authority will periodically deposit to the account for repayment of bonds with maturity period within 3 years.

Restricted cash is used as a guarantee for Provincial Electricity Authority's employee loans. Provincial Electricity Authority has to maintain a balance of savings accounts at an average of Baht 3,100 million per month.

5.8 Non-current assets held for sale consist of:

Unit : Million Baht

Consolidated and separate financial statements							
	Land and land improvements	Buildings and constructions	Electricity generating systems	Electricity distributing systems	Furniture, tools and equipment	Vehicles	Total
Cost							
As at January 1, 2018	-	-	-	-	-	-	-
- Additions	1.01	0.01	1.20	102.91	128.06	64.26	297.45
- Disposals/decreases	(0.90)	(0.01)	-	(12.22)	(52.24)	(10.34)	(75.71)
As at December 31, 2018	0.11	-	1.20	90.69	75.82	53.92	221.74
Accumulated depreciation							
As at January 1, 2018	-	-	-	-	-	-	-
- Additions	0.85	0.01	1.19	98.81	125.22	64.26	290.34
- Disposals/decreases	(0.80)	(0.01)	-	(11.48)	(50.83)	(10.34)	(73.46)
As at December 31, 2018	0.05	-	1.19	87.33	74.39	53.92	216.88
Net book value							
As at December 31, 2017	-	-	-	-	-	-	-
As at December 31, 2018	0.06	-	0.01	3.36	1.43	-	4.86

5.9 Investments in associates

Investments in associates in the consolidated financial statements represent the investments of PEA Encom International Company Limited, the subsidiary of the Provincial Electricity Authority. PEA Encom International Company Limited has invested in 4 solar power plants projects on May 12, 2014, 3 power plants projects from biomass fuel on September 10, 2018 and September 14, 2018 and 1 Bacho Biogas Project on November 8, 2018 with a purpose of generating and selling electricity energy to Provincial Electricity Authority. Investments in associates are accounted using the equity method.

As at December 31, 2018 and 2017, investments in associates in the consolidated financial statements consist of:

Unit : Million Baht

Associates	Proportion of Investment (percent)	Dec. 31, 2018		Dec. 31, 2017	
		Cost Method	Equity Method	Cost Method	Equity Method
1. Solar Power (Surin 1) Co., Ltd.	25	41.25	85.34	41.25	77.99
2. Solar Power (Surin 2) Co., Ltd.	25	41.25	82.70	41.25	74.36
3. Solar Power (KhonKaen 10) Co., Ltd.	25	41.25	83.45	41.25	75.24
4. Solar Power (Loei 2) Co., Ltd.	25	41.25	84.79	41.25	76.95
5. Pracharath Biomass Narathiwat Co., Ltd.	40	2.40	2.31	-	-
6. Pracharath Biomass Maelan Co., Ltd.	40	2.40	2.27	-	-
7. Pracharath Biomass Bannangsata Co., Ltd.	40	2.40	2.27	-	-
8. Thai Serm Suk Energy Co., Ltd.	25	25.00	23.47	-	-
Total		197.20	366.60	165.00	304.54

5.10 Investments in joint venture

Investments in joint venture in the consolidated financial statements is the investment of PEA Encom International Company Limited, the subsidiary of Provincial Electricity Authority, which has entered into a joint venture agreement in the name of PEA Encom Fah Chai joint venture to install and provide service on solar cell electricity generating system on March 8, 2017 and are accounted using the equity method.

As at December 31, 2018 and 2017, investments in joint venture in the consolidated financial statements consists of:

Unit : Million Baht

Associates	Proportion of Investment (percent)	Dec. 31, 2018		Dec. 31, 2017	
		Cost Method	Equity Method	Cost Method	Equity Method
PEA Encom Fah Chai joint venture	25	5.47	5.39	5.47	5.43
Total		5.47	5.39	5.47	5.43

5.11 Investments in subsidiary

Investments in subsidiary in the separate financial statements represent the investments in PEA Encom International Company Limited. The Company is registered in Thailand with a purpose of investing in electricity-related businesses and conducting training services concerning electricity systems and other private organizations both domestically and internationally. Provincial Electricity Authority has acquired 100% shareholding of its ordinary shares. The investments in subsidiary are recorded under the cost method.

As at December 31, 2018 and 2017, the investments in subsidiary presented in the separate financial statements of Baht 1,441.28 million and Baht 782.28 million, respectively.

5.12 Constructions in progress consist of:

Unit : Million Baht

	Consolidated financial statements			
	Constructions in progress			
	PEA capital budget	Partially funded by electricity users	Funded by interest from electricity usage guarantee	Total
As at January 1, 2018	18,294.20	4,989.40	-	23,283.60
- Additions	25,688.76	6,437.68	-	32,126.44
- Decreases	(18,213.31)	(5,991.64)	-	(24,204.95)
	25,769.65	5,435.44	-	31,205.09
Materials and supplies				11,271.16
Work in progress				1.35
As at December 31, 2018				42,477.60

Unit : Million Baht

	Separate financial statements			
	Constructions in progress			
	PEA capital budget	Partially funded by electricity users	Funded by interest from electricity usage guarantee	Total
As at January 1, 2018	18,294.20	4,989.40	-	23,283.60
- Additions	25,417.88	6,437.68	-	31,855.56
- Decreases	(18,213.31)	(5,991.64)	-	(24,204.95)
	25,498.77	5,435.44	-	30,934.21
Materials and supplies				11,271.16
Work in progress				1.35
As at December 31, 2018				42,206.72

Unit : Million Baht

	Consolidated and separate financial statements			
	Constructions in progress			
	PEA capital budget	Partially funded by electricity users	Funded by interest from electricity usage guarantee	Total
As at January 1, 2017	19,728.78	5,122.99	0.08	24,851.85
- Additions	16,893.83	6,343.73	0.02	23,237.58
- Decreases	(18,328.41)	(6,477.32)	(0.10)	(24,805.83)
	18,294.20	4,989.40	-	23,283.60
Materials and supplies				10,625.89
Work in progress				1.63
As at December 31, 2017				33,911.12

Materials and supplies and work in progress presented in constructions in progress are the materials and supplies which PEA has purchased with specific purposes for use in the projects.



5.13 Investment property consist of:

Unit : Million Baht

	Consolidated and separate financial statements		
	Land and land improvements	Vacant building	Total
Cost			
As at January 1, 2018	185.34	477.15	662.49
- Additions	2.12	-	2.12
- Decreases	(16.37)	-	(16.37)
As at December 31, 2018	171.09	477.15	648.24
Accumulated depreciation			
As at January 1, 2018	-	76.47	76.47
- Additions	-	16.23	16.23
As at December 31, 2018	-	92.70	92.70
Net book value			
As at December 31, 2017	185.34	400.68	586.02
As at December 31, 2018	171.09	384.45	555.54

As at December 31, 2018 and 2017, according to the appraisal value announced by the Treasury department, land has total fair value of Baht 449.90 million and Baht 444.16 million, respectively, and buildings have fair value as at December 31, 2018 and 2017 of Baht 180.83 million.

Provincial Electricity Authority has rental income on investment property for the years ended December 31, 2018 and 2017, amounting to Baht 28.54 million and Baht 21.55 million, respectively. The acquisition cost of land used for rentals as at December 31, 2018 and 2017, are Baht 42.21 million and Baht 46.57 million, respectively.

5.14 Property, plant and equipment consist of:

Unit : Million Baht

Consolidated financial statements								
	Land and land improvements	Buildings and constructions	Electricity generating systems	Electricity distributing systems	Furniture, tools and equipment	Vehicles	Vehicles under Finance leases	Total
Cost								
As at January 1, 2018	12,899.29	15,310.82	2,321.60	440,572.78	21,669.33	9,882.43	1,678.64	504,334.89
- Additions	1,831.70	1,008.72	269.34	25,507.52	1,374.52	289.94	559.88	30,841.62
- Disposals/decreases	(187.78)	(59.25)	(1.04)	(2,269.80)	(107.74)	(11.87)	(202.07)	(2,839.55)
- Assets held for sale	(0.11)	-	(1.20)	(90.69)	(75.82)	(53.92)	-	(221.74)
As at December 31, 2018	14,543.10	16,260.29	2,588.70	463,719.81	22,860.29	10,106.58	2,036.45	532,115.22
Accumulated depreciation								
As at January 1, 2018	1,460.62	6,004.84	1,144.84	221,222.37	12,994.84	7,549.79	660.43	251,037.73
- Additions	130.29	499.80	100.02	16,859.89	1,475.77	377.63	375.08	19,818.48
- Disposals/decreases	(5.83)	(12.61)	(0.18)	(1,680.66)	(89.48)	(11.87)	(202.07)	(2,002.70)
- Assets held for sale	(0.05)	-	(1.19)	(87.33)	(74.39)	(53.92)	-	(216.88)
As at December 31, 2018	1,585.03	6,492.03	1,243.49	236,314.27	14,306.74	7,861.63	833.44	268,636.63
Net book value								
As at December 31, 2017	11,438.67	9,305.98	1,176.76	219,350.41	8,674.49	2,332.64	1,018.21	253,297.16
As at December 31, 2018	12,958.07	9,768.26	1,345.21	227,405.54	8,553.55	2,244.95	1,203.01	263,478.59

Separate financial statements								
	Land and land improvements	Buildings and constructions	Electricity generating systems	Electricity distributing systems	Furniture, tools and equipment	Vehicles	Vehicles under Finance leases	Total
Cost								
As at January 1, 2018	12,899.29	15,310.82	2,321.60	440,572.78	21,666.70	9,882.43	1,675.57	504,329.19
- Additions	1,831.70	1,008.72	269.34	25,507.52	1,373.34	289.94	559.88	30,840.44
- Disposals/decreases	(187.78)	(59.25)	(1.04)	(2,269.80)	(107.73)	(11.87)	(202.07)	(2,839.54)
- Assets held for sale	(0.11)	-	(1.20)	(90.69)	(75.82)	(53.92)	-	(221.74)
As at December 31, 2018	14,543.10	16,260.29	2,588.70	463,719.81	22,856.49	10,106.58	2,033.38	532,108.35
Accumulated depreciation								
As at January 1, 2018	1,460.62	6,004.84	1,144.84	221,222.37	12,993.72	7,549.79	658.05	251,034.23
- Additions	130.29	499.80	100.02	16,859.89	1,475.27	377.63	374.47	19,817.37
- Disposals/decreases	(5.83)	(12.61)	(0.18)	(1,680.66)	(89.48)	(11.87)	(202.07)	(2,002.70)
- Assets held for sale	(0.05)	-	(1.19)	(87.33)	(74.39)	(53.92)	-	(216.88)
As at December 31, 2018	1,585.03	6,492.03	1,243.49	236,314.27	14,305.12	7,861.63	830.45	268,632.02
Net book value								
As at December 31, 2017	11,438.67	9,305.98	1,176.76	219,350.41	8,672.98	2,332.64	1,017.52	253,294.96
As at December 31, 2018	12,958.07	9,768.26	1,345.21	227,405.54	8,551.37	2,244.95	1,202.93	263,476.33

The fully depreciated plant and equipment that continue to be used by Provincial Electricity Authority and its subsidiary as at December 31, 2018 is amounting to Baht 168.12 million.

5.15 Intangible assets consist of:

Unit : Million Baht

Consolidated financial statements			
	Computer software licenses	Finance lease assets	Total
Cost			
As at January 1, 2018	3,399.93	2,201.31	5,601.24
- Additions	40.61	-	40.61
- Disposals/decreases	(0.51)	-	(0.51)
As at December 31, 2018	3,440.03	2,201.31	5,641.34
Accumulated amortization			
As at January 1, 2018	3,098.24	732.50	3,830.74
- Additions	128.90	660.34	789.24
- Disposals/decreases	(0.51)	-	(0.51)
As at December 31, 2018	3,226.63	1,392.84	4,619.47
Net book value			
As at December 31, 2017	301.69	1,468.81	1,770.50
As at December 31, 2018	213.40	808.47	1,021.87

Unit : Million Baht

Separate financial statements			
	Computer software licenses	Finance lease assets	Total
Cost			
As at January 1, 2018	3,399.70	2,201.32	5,601.02
- Additions	40.45	-	40.45
- Disposals/decreases	(0.51)	-	(0.51)
As at December 31, 2018	3,439.64	2,201.32	5,640.96
Accumulated amortization			
As at January 1, 2018	3,098.16	732.50	3,830.66
- Additions	128.86	660.34	789.20
- Disposals/decreases	(0.51)	-	(0.51)
As at December 31, 2018	3,226.51	1,392.84	4,619.35
Net book value			
As at December 31, 2017	301.54	1,468.82	1,770.36
As at December 31, 2018	213.13	808.48	1,021.61

The fully amortized intangible assets that continue to be used by Provincial Electricity Authority and its subsidiary as at December 31, 2018 is amounting to Baht 0.005 million.



5.16 Other non-current assets consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Employee receivables	70.81	72.21	70.81	72.21
Deferred expenses	22.72	21.85	22.72	21.85
Retentions and deposits	15.14	15.01	2.74	2.84
Withholding taxes	1.20	1.83	-	-
PEA Employee Gratuity Fund				
Cash	0.004	0.004	0.004	0.004
Current accounts	0.011	0.011	0.011	0.011
Savings accounts	0.66	0.32	0.66	0.32
Total	110.54	111.24	96.94	97.24

5.17 Other current payables consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Accounts payable for goods or services - domestic	2,592.44	929.75	2,532.81	902.84
Suspense payable - unbilled	655.01	843.42	655.01	843.42
Other accounts payable	765.59	282.18	765.06	282.08
Unearned revenues	319.27	321.68	319.02	321.68
Total	4,332.31	2,377.03	4,271.90	2,350.02

Consolidated and separate financial statements as at December 31, 2018 and 2017, suspense payable-unbilled amounting to Baht 655.01 million and Baht 843.42 million, respectively, represent payable for goods or services received but Provincial Electricity Authority has not received invoices from payables.

5.18 Long - term loans are as follows:

Unit : Million Baht

Consolidated and separate financial statements					
Type of loans	Repayment terms	Currency	Fixed interest rate per contract (%)	Dec. 31, 2018	Dec. 31, 2017
Domestic loans					
- Ministry of Finance	1988 - 2031	Canadian Dollar	Interest free	177.17	210.91
- Bonds	2005 - 2040	Baht	2.40 - 6.84	71,070.00	75,460.00
Total domestic loans				71,247.17	75,670.91
Foreign loans					
- Financial institutions	2000 - 2020	Euro	2.00	149.09	248.83
	2007 - 2023	Euro	8.00 *	183.32	231.17
Total foreign loans				332.41	480.00
Total long - term loans				71,579.58	76,150.91
<u>Less</u> Current portion				(7,831.84)	(7,538.41)
Total				63,747.74	68,612.50

* Borrowing interest rate of 8% per annum under the loan contract includes interest expense that Provincial Electricity Authority paid to KFW special fund at the rate of 6% per annum, and that are recorded as interest expense at the rate of 2% per annum.

Provincial Electricity Authority has obtained loans to construct buildings, electricity generating and distributing systems. The borrowing costs that directly attributable to the construction of qualifying assets and incurred from loans made for specific purposes are capitalized as cost of assets at interest rates of 2.40 - 6.84% per annum.

Interest expenses on loans for the years ended December 31, 2018 and 2017, amounting to Baht 2,934.38 million and Baht 3,158.09 million are capitalized as cost of constructions in progress amounting to Baht 205.60 million and Baht 293.32 million and are recognized as expenses in the statements of comprehensive income for Baht 2,728.78 million and Baht 2,864.77 million, respectively.



5.19 Finance lease liabilities consist of:

Unit : Million Baht

	Consolidated financial statements					
	Within 1 year		After 1 year but within 5 years		Total	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Present value of finance lease liabilities						
- Computer software systems	756.43	709.76	181.45	876.68	937.88	1,586.44
- Vehicles	382.92	310.61	878.96	749.58	1,261.88	1,060.19
- Other assets	21.20	-	24.50	-	45.70	-
Total	1,160.55	1,020.37	1,084.91	1,626.26	2,245.46	2,646.63

Unit : Million Baht

	Separate financial statements					
	Within 1 year		After 1 year but within 5 years		Total	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Present value of finance lease liabilities						
- Computer software systems	756.43	709.76	181.45	876.68	937.88	1,586.44
- Vehicles	382.77	309.86	878.96	749.49	1,261.73	1,059.35
- Other assets	21.20	-	24.50	-	45.70	-
Total	1,160.40	1,019.62	1,084.91	1,626.17	2,245.31	2,645.79

5.19.1 Finance lease liabilities - computer software

Unit : Million Baht

	Consolidated and separate financial statements					
	Within 1 year		After 1 year but within 5 years		Total	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Finance lease liabilities	795.60	795.60	183.60	918.00	979.20	1,713.60
Less Future financial charge	(39.17)	(85.84)	(2.15)	(41.32)	(41.32)	(127.16)
Present value of finance lease liabilities	756.43	709.76	181.45	876.68	937.88	1,586.44

5.19.2 Finance lease liabilities - vehicles

Unit : Million Baht

	Consolidated financial statements					
	Within 1 year		After 1 year but within 5 years		Total	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Finance lease liabilities	460.76	376.09	975.44	832.94	1,436.20	1,209.03
Less Future financial charge	(77.84)	(65.48)	(96.48)	(83.36)	(174.32)	(148.84)
Present value of finance lease liabilities	382.92	310.61	878.96	749.58	1,261.88	1,060.19

Unit : Million Baht

	Separate financial statements					
	Within 1 year		After 1 year but within 5 years		Total	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Finance lease liabilities	460.61	375.30	975.44	832.85	1,436.05	1,208.15
Less Future financial charge	(77.84)	(65.44)	(96.48)	(83.36)	(174.32)	(148.80)
Present value of finance lease liabilities	382.77	309.86	878.96	749.49	1,261.73	1,059.35



5.19.3 Finance lease liabilities - other assets

Unit : Million Baht

	Consolidated and separate financial statements					
	Within 1 year		After 1 year but within 5 years		Total	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Finance lease liabilities	26.79	-	26.69	-	53.48	-
Less Future financial charge	(5.59)	-	(2.19)	-	(7.78)	-
Present value of finance lease liabilities	21.20	-	24.50	-	45.70	-

5.20 Accrued remittance to the Ministry of Finance consist of:

Unit : Million Baht

	Consolidated and separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017
Beginning balance	8,164.50	7,094.50
Adjustment for remittance to the Ministry of Finance for the year 2017	-	(1,655.00)
Reserve for remittance to public revenues	13,350.00	13,857.00
Remit to public revenues during the year	(13,003.00)	(11,132.00)
Total	8,511.50	8,164.50

Adjustment for remittance to the Ministry of Finance in the year 2017 amounting to Baht 1,655.00 million is an item that the State Enterprise Policy Office has conceded to use a VAT obligation in connection with a free electricity subsidy for the underprivileged users policy amounting to Baht 1,655.61 million as a deduction from remittance to Ministry of Finance in the year 2016. Meanwhile, Provincial Electricity Authority sets the additional provision on accrued remittance to the Ministry of Finance in the year 2016 amounting to Baht 0.61 million.

5.21 Deposits payable consist of:

Unit : Million Baht

	Consolidated and separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017
Accrued remittance to the Power Development Fund	0.26	356.67
Pending repayment electricity usage guarantee	245.48	224.29
Other deposits payable	84.80	99.56
Total	330.54	680.52

5.22 Other current liabilities consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Retentions and deposits	255.29	260.32	251.09	259.74
Withholding tax payable	0.42	0.51	-	-
Suspense accounts	35.74	60.35	35.74	60.35
Short-term provision (Note 5.23)	4.13	1.67	4.13	1.67
Total	295.58	322.85	290.96	321.76



5.23 Long-term provisions

Unit : Million Baht

	Consolidated and separate financial statements	
	Dec 31, 2018	
As at January 1, 2018	209.68	
- Increase	43.33	
- Decrease	(0.55)	
- Reversal	(5.25)	
	247.21	
Less Short-term provision (Note 5.22)	(4.13)	
As at December 31, 2018	243.08	

Long-term provisions as at December 31, 2018 represent the provisions that Provincial Electricity Authority was filed in litigation as a defendant, which Provincial Electricity Authority assesses the status of the lawsuits and estimates that Provincial Electricity Authority will be obliged to the liabilities for 52 lawsuits. Provincial Electricity Authority expects that it will be required to pay the compensation to the damage of the cases within one year for 9 lawsuits, which are classified as other current liabilities, amounting to Baht 4.13 million (Note 5.22).

5.24 Construction obligations

Consolidated and separate financial statements as at December 31, 2018 and 2017, amounting to Baht 9,094.16 million and Baht 9,064.72 million, respectively, represent the obligations of Provincial Electricity Authority to expand the electricity distributing areas for electricity users which the electricity users have fully or partially funded the construction costs. The ownership of the assets belongs to Provincial Electricity Authority.

5.25 Deferred revenues consist of:

Unit : Million Baht

	Consolidated and separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017
Contributions for construction	49,147.88	46,920.98
Deferred revenues	1,518.64	1,588.98
Deferred rental revenues	365.84	380.46
Total	51,032.36	48,890.42

5.26 Electricity usage guarantee represents cash received from electricity users to guarantee for their electricity usage, which are deposited at financial institutions and used as working capital, is as follows:

Unit : Million Baht

	Consolidated and separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017
Electricity usage guarantee fund (Note 5.7)	29,096.48	27,207.38
Electricity usage guarantee - additional deposits by Provincial Electricity Authority	144.26	146.49
Total	29,240.74	27,353.87

5.27 Employee benefit obligations

Employee benefits of Provincial Electricity Authority and its subsidiary consist of post-employment benefits including defined contribution plans (provident fund), defined benefit plans and other long-term employee benefits according to the State Enterprise Labor Relations Act, B.E. 2543 (2000).

As at December 31, 2018 and 2017, employee benefit obligations are as follows:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Post-employment benefits under defined benefit plans				
Retirement pension	11,136.12	11,247.53	11,134.61	11,246.67
Retirement souvenir gift	324.10	326.43	324.10	326.43
Accumulate vacation leave remains at retirement	1,118.79	1,128.51	1,118.79	1,128.51
Total post-employment benefits under defined benefit plans	12,579.01	12,702.47	12,577.50	12,701.61
Other long-term employee benefits				
Souvenir gifts for completing agreed period	395.23	381.23	395.23	381.23
Total other long-term employee benefits	395.23	381.23	395.23	381.23
Total	12,974.24	13,083.70	12,972.73	13,082.84



Post-employment benefits under defined benefit plans and other long-term employee benefits presented in the statements of comprehensive income for the years ended December 31, 2018 and 2017, are as follows:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Current service costs	752.39	674.45	751.93	674.18
Interest cost	409.64	400.33	409.61	400.30
Actuarial losses on post-employment benefit plans	0.16	208.71	-	209.06
Total	1,162.19	1,283.49	1,161.54	1,283.54

Provincial Electricity Authority and its subsidiary have current service costs for the years ended December 31, 2018 and 2017 in the consolidated financial statements amounting to Baht 752.39 million and Baht 674.45 million, which are employee benefit expenses amounting to Baht 750.53 million and Baht 673.47 million and cost of constructions in progress amounting to Baht 1.86 million and Baht 0.98 million, respectively.

Provincial Electricity Authority has current service costs for the years ended December 31, 2018 and 2017 in the separate financial statements amounting to Baht 751.93 million and Baht 674.18 million, which are employee benefit expenses amounting to Baht 750.07 million and Baht 673.20 million and costs of constructions in progress amounting to Baht 1.86 million and Baht 0.98 million, respectively.

Movement in the present value of the provisions for benefit plans for the years ended December 31, 2018 and 2017, are as follows:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Beginning balance of the defined benefit obligations	13,083.70	12,832.85	13,082.84	12,831.94
Current service costs	752.39	674.45	751.93	674.18
Interest cost	409.64	400.33	409.61	400.30
Actual cost	(1,271.65)	(1,032.64)	(1,271.65)	(1,032.64)
Actuarial losses on post-employment benefit plans	0.16	208.71	-	209.06
Ending balance of the defined benefit obligations	12,974.24	13,083.70	12,972.73	13,082.84

Actuarial assumptions used for the calculation of provisions under post-employment benefit plans for the year ended December 31, 2018 and 2017, are as follows:

	Dec. 31, 2018	Dec. 31, 2017
	(percentage)	(percentage)
Discount rate	3.13	3.13
Inflation rate	2.50	2.50
Salary growth rate	7.00 - 9.00	7.00 - 9.00
Employee turnover rate	0.00 - 7.00	0.00 - 7.00
Mortality rate	Thai mortality table for the year 2017	Thai mortality table for the year 2017

The sensitivity analysis for main assumptions used for the estimation based on actuarial science, which is used to determine the present value of obligation under the defined benefit plans as at December 31, 2018, are as followed:

Unit : Million Baht

	Change in present value of defined benefit obligation		
	Percent	Increase in rate	Decrease in rate
Discount rate	1	(1,141.95)	1,371.30
Inflation rate	1	42.48	(36.07)
Salary growth rate	1	1,652.64	(1,398.52)
Employee turnover rate	20	(103.50)	105.96
Mortality rate	1	87.15	(100.08)



Employee benefits expected to be paid

Year	Unit : Million Baht
2019	1,382.12
2020	1,374.76
2021	1,305.02
2022	1,200.61
2023	1,140.85
2024	1,103.86
2025	991.27
2026	1,003.40
2027 onward	35,125.08

For the post-employment benefits under defined contribution plans, Provincial Electricity Authority has established the provident fund. The Fund is monthly contributed by salary of employee and by Provincial Electricity Authority. Provincial Electricity Authority registered provident fund in accordance with the Provident Fund Act, B.E. 2530 (1987).

For the years ended December 31, 2018 and 2017, Provincial Electricity Authority contributes to the provident fund amounting to Baht 1,516.66 million and Baht 1,549.03 million, respectively.

5.28 Other non-current liabilities consist of:

Unit : Million Baht

	Consolidated and separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017
Employee gratuity fund	2.90	8.64
Other non-current liabilities	273.52	205.42
Total	276.42	214.06

As at December 31, 2018 and 2017, Employee Gratuity Fund is as follows:

Unit : Million Baht

	Consolidated and separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017
Beginning balance	8.64	7.88
Add Contributions during the year	0.29	0.33
Deficit in the plan	0.72	0.43
Deficit of revenues over expenses for the year	(0.02)	(0.03)
	9.63	8.61
Add Refunds for shortage in the gratuity fund over obligation	0.02	0.03
Less Payments to provident fund	(6.75)	-
Ending balance of fund equal to obligations to be paid to resigned employees	2.90	8.64

5.29 Executives' remunerations consist of:

Unit : Million Baht

	Consolidated financial statements		Separate financial statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Directors' remunerations	16.31	15.71	14.87	14.68
Management's remunerations	113.19	115.51	113.19	115.51
Total	129.50	131.22	128.06	130.19



5.30 Operating results

Operating results for the years ended December 31, 2018 and 2017 are as follows:

Unit : Million Baht

Consolidated financial statements				
	Dec. 31, 2018	Dec. 31, 2017 (Adjust)	Increase (Decrease)	Percentage
Operating revenues	497,658.24	481,151.04	16,507.20	3.43
Operating expenses	475,861.81	453,038.58	22,823.23	5.04
Operating income	21,796.43	28,112.46	(6,316.03)	(22.47)
Other revenues	1,865.17	1,971.21	(106.04)	(5.38)
Other expenses	145.95	349.52	(203.57)	(58.24)
Financial costs	2,903.47	3,056.54	(153.07)	(5.01)
Share of profits of associates	71.14	71.48	(0.34)	(0.48)
Income tax expense	1.05	-	1.05	100.00
Profit for the year	20,682.27	26,749.09	(6,066.82)	(22.68)

For the year ended December 31, 2018, Provincial Electricity Authority and its subsidiary have profit of Baht 20,682.27 million which decreases from the same period of prior year by Baht 6,066.82 million and by 22.68% from the year 2017. The decrease is attributable to decrease in operating income by Baht 6,316.03 million, decrease in other revenues by Baht 106.04 million, decrease in other expenses by Baht 203.57 million, decrease in financial costs by Baht 153.07 million and decrease in share profits of associates by Baht 0.34 million.

Unit : Million Baht

Separate financial statements				
	Dec. 31, 2018	Dec. 31, 2017 (Adjust)	Increase (Decrease)	Percentage
Operating revenues	497,474.41	481,002.31	16,472.10	3.42
Operating expenses	475,650.29	452,888.04	22,762.25	5.03
Operating income	21,824.12	28,114.27	(6,290.15)	(22.37)
Other revenues	1,841.42	1,961.10	(119.68)	(6.10)
Other expenses	145.95	349.52	(203.57)	(58.24)
Financial costs	2,903.44	3,056.45	(153.01)	(5.01)
Profit for the year	20,616.15	26,669.40	(6,053.25)	(22.70)

For the year ended December 31, 2018, Provincial Electricity Authority has profit of Baht 20,616.15 million which decreases from the same period of prior year by Baht 6,053.25 million and by 22.70% from the year 2017. The decrease is attributable to decrease in operating income by Baht 6,290.15 million, decrease in other revenues by Baht 119.68 million, decrease in other expenses by Baht 203.57 million and decrease in financial costs by Baht 153.01 million.

Office of The National Broadcasting and Telecommunications Commission allowed Provincial Electricity Authority to operate the third type of telecommunication business (fiber optic) since March 1, 2007. For the year 2018, Provincial Electricity Authority has revenues from telecommunication business amounting to Baht 150.96 million which are recognized as sales and service revenues.

Provincial Electricity Authority has received license to operate broadcasting and television business No. B1-F22051-0004-56 in providing assistance on broadcasting and television. The service includes a rental of electric pole for putting up cable line by National Broadcasting and Telecommunications Commission beginning from December 16, 2013 to December 15, 2028. For the year 2018 and 2017, Provincial Electricity Authority has revenues on rental of electric pole for putting up cable line from Cable TVs business amounting to Baht 19.94 million and Baht 20.08 million, respectively.

According to the resolution of Energy Regulatory Commission No. ERC 5502/3289.2 dated on July 31, 2012, the committee has agreed on refunding interest from electricity usage guarantee fund in the form of interest payment on an annual basis from Provincial Electricity Authority to the electricity user of medium general services, of large general services and of specific business services who has paid the deposit in cash. The amount of refund is based on annual average interest rate of Krung Thai Bank Public Company Limited's savings account for the state enterprises. In the case of power meter has been cut out of power supply and customers who discontinued using the electricity services during the year, this benefit would not be given. For the year 2018, Provincial Electricity Authority has refunded the benefit to the customers amounting to Baht 27.17 million and recorded as other expenses.

According to the resolution of Energy Regulatory Commission No. ERC 5502/35088 dated on June 19, 2014 and No. ERC 5502/38907 dated on October 14, 2014, the committee has agreed on refunding interest from electricity usage guarantee fund to user of residential general service and of small general service, according to the concept of refunding interest to user of medium general service, of large general service, and of specific business services. In case that the users' power meter has been cut out of power supply but the electricity supply service agreement has not been terminated, the users are still entitled to receive the refunding interest. The refunding will be made on every 5 years basis. The amount of refunding interest is calculated from the period beginning from January 2015 to December 2019 and the interest will be paid within the first quarter of the year 2020. In the year 2018, Provincial Electricity Authority is obliged to refund interest to the customers amounted to Baht 69.16 million and recorded as other expenses.



5.3.1 Financial Information of Operating Segments

5.3.1.1 Statement of Financial position of operating segments are as follows:

Unit : Million Baht

	North		Northeast		Central		South		Headquarter		Consolidated financial Statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
	Information from statements of financial position											
Trade accounts receivable	5,284.10	4,633.52	5,655.31	5,083.23	17,962.66	17,704.67	6,420.34	6,114.43	482.76	453.82	35,805.17	33,989.67
Other current assets	520.82	462.39	614.87	608.34	874.59	723.61	685.85	596.95	68,641.58	71,700.14	71,337.71	74,091.43
Property, plant and equipment	56,963.92	54,595.14	56,474.47	54,772.80	84,820.96	80,437.87	62,199.04	60,422.46	3,020.20	3,068.89	263,478.59	253,297.16
Other non-current assets	7,763.61	5,273.30	9,325.32	6,302.12	13,015.91	11,427.07	8,093.89	7,340.56	6,421.94	6,412.18	44,620.67	36,755.23
Total Assets	70,532.45	64,964.35	72,069.97	66,766.49	116,674.12	110,293.22	77,399.12	74,474.40	78,566.48	81,635.03	415,242.14	398,133.49
Current Liabilities	46,063.53	40,739.69	51,034.84	46,829.77	(224,984.17)	(201,515.61)	18,125.23	17,695.92	185,455.96	160,774.26	75,695.39	64,524.03
Long-term loans	-	-	-	-	-	-	-	-	63,747.74	68,612.50	63,747.74	68,612.50
Other non-current liabilities	19,424.20	18,978.91	24,853.69	23,486.32	37,225.57	35,735.46	20,678.33	19,802.90	2,739.45	3,445.99	104,921.24	101,449.58
Total Liabilities	65,487.73	59,718.60	75,888.53	70,316.09	(187,758.60)	(165,780.15)	38,803.56	37,498.82	251,943.15	232,832.75	244,364.37	234,586.11
Equity	5,044.72	5,245.75	(3,818.56)	(3,549.60)	304,432.72	276,073.37	38,595.56	36,975.58	(173,376.67)	(151,197.72)	170,877.77	163,547.38
Total Liabilities and Equity	70,532.45	64,964.35	72,069.97	66,766.49	116,674.12	110,293.22	77,399.12	74,474.40	78,566.48	81,635.03	415,242.14	398,133.49

5.31.2 Operational results of operating segments are as follows:

Unit : Million Baht

	North		Northeast		Central		South		Headquarter		Consolidated financial Statements	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
	Information from statements of comprehensive income											
Sales of electricity energy	73,216.52	71,064.34	81,036.50	77,860.95	255,841.03	248,913.08	86,838.06	82,838.49	726.13	474.18	497,658.24	481,151.04
Other revenues	86.64	100.85	151.82	142.32	198.49	281.50	62.00	138.84	1,366.22	1,307.70	1,865.17	1,971.21
Total revenues	73,303.16	71,165.19	81,188.32	78,003.27	256,039.52	249,194.58	86,900.06	82,977.33	2,092.35	1,781.88	499,523.41	483,122.25
Cost of electricity	62,396.61	59,103.00	69,142.81	65,028.36	213,016.39	202,245.16	73,321.11	68,616.64	-	782.82	417,876.92	395,775.98
Employee compensations	4,562.33	4,771.30	5,097.74	5,238.45	5,051.79	5,303.64	4,075.04	4,247.83	3,799.11	3,913.73	22,586.01	23,474.95
Employee benefit expenses	236.08	217.63	268.68	235.27	275.15	259.92	214.28	200.93	165.98	160.04	1,160.17	1,073.79
Executive remuneration	7.57	7.34	7.00	7.34	6.52	7.03	6.43	6.62	101.98	102.88	129.50	131.21
Preventive, repair and maintenance, and construction expenses	814.48	844.64	898.05	829.87	1,428.29	1,369.68	1,059.30	867.56	1,125.46	813.23	5,325.58	4,724.98
Depreciation and amortization expenses	4,114.49	4,041.22	4,270.06	4,263.94	5,959.31	5,667.18	4,651.60	4,508.07	1,224.54	1,222.67	20,220.00	19,703.08
Other operating expenses	1,331.66	1,341.37	1,733.02	1,770.09	1,883.77	1,775.57	1,911.40	1,700.11	1,703.78	1,567.44	8,563.63	8,154.58
Other expenses	19.32	7.10	21.57	29.38	36.75	91.56	18.82	113.81	49.49	107.67	145.95	349.52
Financial costs	21.66	5.87	18.35	4.91	22.20	8.67	22.10	9.94	2,819.16	3,027.15	2,903.47	3,056.54
Total expenses	73,504.20	70,339.47	81,457.28	77,407.61	227,680.17	216,728.41	85,280.08	80,271.51	10,989.50	11,697.63	478,911.23	456,444.63
Share of profit of associates	-	-	-	-	-	-	-	-	71.14	71.48	71.14	71.48
Profit before tax expense	(201.04)	825.72	(268.96)	595.66	28,359.35	32,466.17	1,619.98	2,705.82	(8,826.01)	(9,844.27)	20,683.32	26,749.10
Income tax expense	-	-	-	-	-	-	-	-	1.05	-	1.05	-
Income (loss) for the year	(201.04)	825.72	(268.96)	595.66	28,359.35	32,466.17	1,619.98	2,705.82	(8,827.06)	(9,844.27)	20,682.27	26,749.10
Other comprehensive loss	-	(43.11)	-	(51.08)	-	(48.70)	-	(37.57)	(1.89)	(28.25)	(1.89)	(208.71)
Total comprehensive income (loss) for the year	(201.04)	782.61	(268.96)	544.58	28,359.35	32,417.47	1,619.98	2,668.25	(8,828.95)	(9,872.52)	20,680.38	26,540.39

6. Related party transactions

Significant related party transactions are as follows:

6.1 Assets and liabilities, as at December 31, 2018 and 2017, significant related party transactions are as follows:

Unit : Million Baht

Item/Company's name	Relationship	Consolidated financial statements		Separate financial statements	
		Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Accounts receivable from sales of equipment and rendering of services					
PEA Encom International Co., Ltd.	Subsidiary	-	-	0.18	-
Investments in associates					
Solar Power (SR1) Co., Ltd.	Subsidiary's associate	85.34	77.99	-	-
Solar Power (SR2) Co., Ltd.	Subsidiary's associate	82.70	74.36	-	-
Solar Power (KK10) Co., Ltd.	Subsidiary's associate	83.45	75.24	-	-
Solar Power (LO2) Co., Ltd.	Subsidiary's associate	84.79	76.95	-	-
Pracharath Biomass Narathiwat Co., Ltd.	Subsidiary's associate	2.31	-	-	-
Pracharath Biomass Maelan Co., Ltd.	Subsidiary's associate	2.27	-	-	-
Pracharath Biomass Bannangsata Co., Ltd.	Subsidiary's associate	2.27	-	-	-
Thai Serm Suk Energy Co., Ltd.	Subsidiary's associate	23.47	-	-	-
Investments in joint venture					
PEA Encom Fah chai	Subsidiary's joint venture	5.39	5.43	-	-
Investments in subsidiary					
PEA Encom International Co., Ltd.	Subsidiary	-	-	1,441.28	782.28
Advance payments to suppliers					
PEA Encom International Co., Ltd.	Subsidiary	-	-	-	4.68
Undue input VAT					
PEA Encom International Co., Ltd.	Subsidiary	-	-	-	0.55
Trade accounts payable					
EGAT	Related party	33,952.00	28,199.66	33,952.00	28,199.66
Other accounts payable					
PEA Encom International Co., Ltd.	Subsidiary	-	-	0.02	0.01
Deferred revenues					
PEA Encom International Co., Ltd.	Subsidiary	-	-	0.01	-
Accrued expenses					
PEA Encom International Co., Ltd.	Subsidiary	-	-	-	8.46
Sales and service guarantee					
PEA Encom International Co., Ltd.	Subsidiary	-	-	0.02	-

6.2 Revenues and expenses, related party transaction for the years ended December 31, 2018 and 2017, are as follows:

Unit : Million Baht

Item/Company's name	Relationship	Consolidated financial statements		Separate financial statements	
		Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Other operating revenues					
PEA Encom International Co., Ltd.	Subsidiary	-	-	1.24	0.73
Other revenues					
PEA Encom International Co., Ltd.	Subsidiary	-	-	1.15	-
Cost of electricity					
EGAT	Related Party	357,004.52	341,649.63	357,004.52	341,649.63
Solar Power (SR1) Co., Ltd.	Subsidiary's associate	127.02	129.93	127.02	129.93
Solar Power (SR2) Co., Ltd.	Subsidiary's associate	125.58	128.27	125.58	128.27
Solar Power (KK10) Co., Ltd.	Subsidiary's associate	119.77	119.47	119.77	119.47
Solar Power (LO2) Co., Ltd.	Subsidiary's associate	116.12	113.75	116.12	113.75
Maintenance cost					
PEA Encom International Co., Ltd.	Subsidiary	-	-	0.06	0.96
Construction expenses					
PEA Encom International Co., Ltd.	Subsidiary	-	-	6.32	31.11

7. Disclosure of financial instruments

7.1 Credit risk

Credit risk arises when accounts receivable do not comply with the terms and conditions of credit agreements, causing losses to Provincial Electricity Authority. Also, a concentration exposure in credit portfolios is regarded as an important aspect of credit risk. Most of Provincial Electricity Authority's accounts receivable are juristic person and natural person, however, there has been no significant losses that affects PEA financial statements in the past. Therefore, it is assumed that Provincial Electricity Authority has no credit risk.

In case of financial assets recognition in the statements of financial position, book values of the assets presented in the statements of financial position represent the maximum amount of exposure to the credit risk of breach of contract by Provincial Electricity Authority.

7.2 Interest rate risk

Interest rate risk arises when interest rate changes and may have a negative effect on operations of Provincial Electricity Authority, however, most of Provincial Electricity Authority's loans have fixed interest rates and Provincial Electricity Authority's loans are not significant amount except as mentioned in Note 5.18.



7.3 Foreign exchange rate risk

Foreign exchange rate risk arises when there is a change in foreign exchange rates and may effect on Provincial Electricity Authority and its subsidiary's financial position in current and following years. However, most of Provincial Electricity Authority's transactions are incurred in Thai Baht, therefore, changes in foreign exchange rate do not have significant impact on Provincial Electricity Authority and its subsidiary's assets and liabilities.

7.4 Fair value of financial Instruments

Provincial Electricity Authority and its subsidiary estimate fair value of financial Instruments by using following assumptions:

Cash and cash equivalents, short-term investments, trade accounts receivable and trade accounts payable have book values approximate of their fair value due to their short-term period of settlement.

8. Contingent liabilities

As at December 31, 2018, Provincial Electricity Authority was filed in litigation as a defendant for 2,467 cases in which dispute amount are totaling at Baht 41,487.13 million. Provincial Electricity Authority expects that the court's judgment will not cause any damage and hold no liabilities. Details of litigation cases are as follows:

8.1 Litigation cases, which the injured person file the complaint against Provincial Electricity Authority to demolish assets or to complete the pending construction, are at 47 cases and the claimed compensation is amounting to Baht 25.49 million.

8.2 Litigation cases, which the injured person claim for damage against Provincial Electricity Authority regarding worker employment and employee benefits, are at 2,296 cases and the claimed compensation is amounting to Baht 8,153.98 million.

8.3 Litigation cases, which the injured person claim for damage against Provincial Electricity Authority for cases that others persons or plaintiffs are damaged from Provincial Electricity Authority's assets, are at 18 cases and the claimed compensation is amounting to Baht 173.99 million.

8.4 Litigation cases, which the injured person claim for damage against Provincial Electricity Authority regarding breaking contract of sales and infringement of right, are at 106 cases and the claimed compensation is amounting to Baht 33,133.67 million.

9. Event after the reporting period

On January 3, 2019, the tropical storm, Pabuk had passed through the south of Thailand, causing damage to Provincial Electricity Authority's electricity distribution systems. The expense to restore the damage from the disaster is amounting to Baht 41.56 million.

10. Approval of financial statements

These financial statements were approved for issuance by PEA Governor on May 27, 2019.



Summary Information for 10 Years

Items	2018	2017	2016	2015	2014	2013	2012	2011	2009	2008
Income from Electricity Sales (Million baht)	483,477	467,486	441,458	451,476	450,634	418,888	375,188	313,702	313,634	280,882
Other Income (Million baht)	15,838	15,477	15,279	14,331	14,378	15,182	12,975	11,048	10,077	9,417
Operational Expenses (Million baht)	475,650	452,888	427,584	441,140	441,152	409,450	369,954	308,525	306,012	273,492
Other Expenses (Million baht)	3,049	3,406	3,264	3,595	3,463	3,542	3,234	3,764	2,936	2,807
Net Profit (Million baht)	20,616	26,669	25,888	21,072	20,397	21,078	14,975	12,461	14,763	14,000
Investments in Assets (Million baht)	34,385	33,476	37,457	37,230	27,154	26,240	25,395	21,607	24,091	21,520
Loans (Million baht)	71,580	76,151	78,075	84,283	82,254	79,385	74,515	95,217	85,747	74,123
Net Assets (Million baht)	414,880	397,836	378,149	366,977	348,426	328,084	309,269	303,817	283,997	262,037
Number of Electricity Users (Persons)	19,768,754	19,360,779	18,894,637	18,391,443	17,890,494	17,362,319	16,798,675	16,191,866	15,731,241	15,226,156
Sale Units, plus Free-of-charge Electricity (Million units)	134,674	132,401	129,674	123,212	118,632	114,609	111,726	102,947	102,464	91,711
Average Sale Units (Units/cases)	6,812	6,839	6,863	6,699	6,631	6,601	6,651	6,358	6,513	6,023

Items	2018	2017	2016	2015	2014	2013	2012	2011	2009	2008
Average electricity price (Baht/unit)	3.49	3.47	3.48	3.75	3.89	3.73	3.46	3.14	3.11	3.11
Maximum Demands for electricity (MW)	19,139	19,721	20,439	18,597	17,724	17,294	16,682	15,996	16,099	14,603
Electricity Power (Million Kwh)	142,296	139,548	137,078	130,390	125,484	120,796	118,738	108,355	107,762	96,536
- Purchase Power (Million Kwh)	142,191	139,443	136,974	130,298	125,380	120,696	118,644	108,243	107,659	96,452
- Produced by PEA (Million Kwh)	105	105	104	91	104	100	94	112	103	84
Transmission Line System (Circuit/Km.)	12,765	12,258	11,776	11,564	11,414	10,992	10,341	9,697	9,214	9,031
High Voltage Distribution System (Circuit/ Km)	313,424	308,988	304,450	299,865	296,809	299,069	298,984	296,215	291,594	299,008
Low Voltage Distribution System (Circuit/ Km)	472,464	462,786	453,836	460,721	442,348	444,741	457,118	456,667	457,595	456,754
Number of PEA Offices	958	946	946	946	947	928	928	862	913	914
Number of Employees	29,659	29,835	30,114	29,093	28,109	27,792	28,060	27,784	27,818	27,847



PEA

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