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VISION

PEA, a leading modern organization, aims to provide efficient and reliable electricity services for quality of life, sustainability of economy and society.

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.

CORE VALUE

Good services, Good governance



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Descriptions	Year 2016 ¹	Year 2015 ²	
Solas of Electricity Energy (Million Poht)	225 960	451 476	
	555,600	431,470	
Other Operating Revenues (Million Baht)	11,367	14,331	
Operating Expenses (Million Baht)	283,648	388,455	
Profit from Operations (Million Baht)	20,960	22,569	
Capital Expenditures (Million Baht)	18,387	26,183	
Loans (Million Baht)	79,582	84,283	
Total Assets (Million Baht)	381,020	366,977	
Number of Customers	18,553,896	18,171,025	
Total Sales of Electricity (Million kWh)	97,714	123,210	
Average Price of Electricity (Baht/kWh)	4	4	
Total Maximum Demand (MW)	20,439	18,597	
Total Electric Energy (Million kWh)	103,574	130,385	
- Purchased Power (Million kWh)	103,503	130,294	
- PEA Generation (Million kWh)	71	91	
Transmission Lines (Circuit-km)	11,718	11,564	•
- H.V. Distribution Line (Circuit-km)	303,164	299,865	
- L.V. Distribution Line (Circuit-km)	451,350	460,721	
Number of PEA Offices	946	946	
Number of PEA Employees	30,895	29,093	
Total Villages	80,062	80,056	
Number of Electrified Villages	80,055	80,032	
% of Electrified Villages	99.99	99.97	

¹ As at September 2016 ² As at December 2015



Provincial Electricity Authority (PEA) is a government enterprise under the Ministry of Interior. PEA was established by a Royal Decree executed on March 6, 1954 and then published in the Government Gazette on March 16, 1954. The appointment of the board of directors as the control of the management is under the control of the Department of Public Works, Municipal of the Ministry of Interior and the Government by the Minister of Interior has the power to general supervision. The Provincial Electricity Organization was the initial capital in accordance with the laws of 5 Million Baht with the power in the number of 117 areas, consequently, PEA was established in accordance with the law of PEA BE. 1960, as at September 28, 1960, by taking over the mission from the Provincial Electricity Organization action continues.

PEA's objectives

1. To continue to improve its provision and distribution services of electric energy for customers: to achieve the highest possible level of sufficiency, efficiency, and reliability in power distribution commensurate with safety practices; to meet the timely need of customers; and to keep pace with changing circumstances.

2. To optimize its business and operations in order to be more profitable and thereby achieve sufficient revenues to facilitate further development.



3. To develop its organizational structure, man power and resources management in order to achieve the highest level of efficiency and effectiveness



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...... Service areas

Head Office

PEA's head office is located in Bangkok and has responsibility on formulating policy and planning with counseling and procurement support for regional offices. The organization structure of PEA is divided to Governor, Deputy Governor, Assistant Governor, Office of the Governor, Internal Audit Bureau, Legal Office, Corporate Strategy and Development Group, Network and Service group, and Supporting group with departments, divisions, and sections support.



Regional Offices

PEA has 12 regional offices in 4 regional groups; Northern, Northeastern, Central, and Southern (3 regional offices per regional group). Each regional office is responsible to control and management of PEA branch offices under the authority cover 74 provinces with 946 branch offices, approximately 510,000 km², or 99% of nationwide area.



...... PEA's 2016 Accomplishments

Power Generation

PEA had 3 diesel power plants, 8 mini and micro hydro-electric power plants, 3 solar power plants, and 2 Wind plants. All are located in remote areas beyond the reach of the EGAT's grid system, providing supply to villagers. The total generation, as at September 2016, was 71 million kWh.



* As at September 2016

Purchase

As at September 2016, PEA purchased 97,814 million kWh from Electricity Generating Authority of Thailand (EGAT), accounting to 95% of total purchases. The other 5% (5,689 million kWh) was purchased from Department of Alternative and Efficiency, Ministry of Energy, Very small power producer, and Solar rooftop.



^{*} As at September 2016

Maximum Demand

As at September 2016, maximum demand amounted to 20,439 MW



* As at September 2016

Sale

As at September 2016, sales came to PEA's total 97,714 million kWh.



* As at September 2016

To align with the strategic approaches for national development and in view of future power demand and its own financial standing, PEA has mapped out an investment scheme investment consisting of 16 projects and 10 plans and projects to perform in the future. (Expected to be invested in the next three years).

Core Investment

No	Projects and Plans	Target	Investment Cost (Million Baht)	Duration	Performance Stage
1	Transmission system and substation development project, 9 th stage, phase 1	Northern region	7,060	2011-2021	Under construction
2	Transmission system and substation development project, 9 th stage, phase 2	Northeast region	4,540	2011-2021	Under construction
3	Transmission system and substation development project, 9 th stage, phase 3	Central region	15,085	2011-2021	Under construction
4	Transmission system and substation development project, 9 th stage, phase 4	Southern region	4,485	2011-2021	Under construction
5	The power distribution system reinforcement project, 7 th stage	Throughout the country	17,270	2008-2018	Under construction
6	Distribution system reliability improvement project, 3 rd stage	Throughout the country	15,155	2011-2021	Under construction
7	Submarine cable extension to electrified island project (Ko Phangan, Suratthani province)	Suratthani province	1,094	2012-2018	Under construction
8	New rural household electrification project	Throughout the country	3,687	2014-2018	114,010 electrified household (86.61%)



No	Projects and Plans	Target	Investment Cost (Million Baht)	Duration	Performance Stage
9	Remote rural household electrification project	Throughout the country	1,215	2015-2019	7,763 electrified household (66.92%)
10	Distribution system dispatching center improvement project	Throughout the country	4,530	2014-2018	In procurement process
11	PEA small hydropower development at dame of royal irrigation department project	Lampang, Chiang Mai, Sakon Nakhon, Phetchabun, Songkhla, and Trat province	808	2015-2019	In procurement process
12	Smart grid development plan (Pattaya in Chonburi Province)	Chonburi province	1,069	2015-2018	In the process of revising the bidding documents and evaluating the reference price
13	Transmission and distribution development project 1 st stage	Throughout the country	62,679	2017-2025	In procurement process
14	Power system development for special economic zone project, 1 st stage	Tak, Sa Kaeo, Trat, Mukdahan, Songkhla, and Nong Khai province	3,140	2017-2019	Survey design and construction tender
15	Agriculture electrification project, 2 nd stage	Throughout the country	2,030	2016-2020	Under construction
16	Micro grid development project at Mae Sariang district, Mae Hong Son province	Mae Hong Son province	265	2017-2019	Preparing for TOR of Biding document
Tota	al project is in progress		144,112		



Expected to be Invested in the next three years

No	Projects and Plans	Target	Investment Cost (Million Baht)	Duration	Performance Stage
1	Major cities power system development project, 1 st stage	4 cities (Pattaya, Hat Yai, Nakhon Rachasima, and Chang Mai)	11,670	2018-2024	During presentation to council of ministers
2	System voltage conversion from 33 kV to 22 kV project in southern region, 1 st stage	Ranong province	1,065	2018-2022	Final feasibility study approved
3	The 115 kV submarine cable extension to Samui island, Suratthani province	Suratthani province	2,130	2018-2020	Revise IEE, according to Office of Natural Resources and Environmental Policy and Planning
4	Geographic information system development plan, 3 rd stage	Throughout the country	2,090	2018-2020	Design and drafting TOR, preparation of tender documents
5	Power generation development from wind farm in the southern region project	Southern region	1,200	2018-2022	Conducting the feasibility study
6	Development plan for power interruption analysis and solution center (plan2)	Throughout the country	705	2016-2020	Submitting for the approval of PEA Board
7	Renewable energy generation development project on Kut island and Mak island, Trat province	Trat province	322	2018-2019	Submitting for approval of PEA Board
8	Micro hydro power plant for community project	Northern region	165	2017-2019	Conducting the feasibility study
9	Power system development for special economic zone project, 2 nd stage	Chiang Rai, Narathiwat, Nakhon Phanom, and Kanchanaburi province	4,000	2017-2024	Submitting for the approval of cabinet
10	Power system development on islands project	Chonburi, Chanthaburi, Rayong, Surat Thani, Phangnga, Phuket, Krabi, and Satun province	6,630	2018-2020	Conducting the feasibility study
Tota Inve	I expected to be sted in the next three years		29,977		
Tota	al (Million Baht)		174,089		



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PEA in Review 2016

Microgrid Development Project at Mae Sariang District, Mae Hong Son Province (MGDP)

Microgrid is group of interconnected loads and distributed energy resources / energy storage with defined electrical boundaries that acts as a single controllable entity and is able to operate in both grid-connected and island mode (IEC).

Microgrid Development Project at Mae Sariang District, Mae Hong Son Province (MGDP) is a project under the 11th National Economic and Social Development Plan. MGDP has been approved by the Cabinet on 1 November 2016.

Objectives of the MGDP compose of : to improve the reliability and quality of power system in the Mae Sariang area, to replace other types of peaking generation to meet growth in peak demand, to reduce power losses in distribution line and overcome constraints in the development of new transmission line, to support the expansion of Renewable Energy (RE) in the area (government policy), to reduce the Green House Gas (GHG) and carbon dioxide (CO₂), and to support smart grid technology for upgrade generation and distribution system.



Non-Firmed Renewable Energy + Battery Energy Storage System (BESS) => Firmed Renewable Energy

MGDP would install microgrid controller and control building with Building Energy Management System (BEMS), install Battery Energy Storage System (BESS) 3.0 MW/1.5 MWh Lithium-Ion family, install control switches to support Fault Location Isolation and Service Restoration (FLISR) or self healing and load shedding function, install communication system by using fiber-optic as a primary channel to communicate between microgrid control center, remote control switches, and existing SCADA system of PEA and upgrade communication system of diesel generator. MGDP would provide efficient and reliable electricity services for quality of life and sustainability of economy and society for customers, support the expansion of renewable energy in area (government policy), increase profit from peak shaving function, reduce the cost of electricity generation from diesel generator, reduce power losses in distribution line, and reduce the green house gas and carbon dioxide.





Descriptions	2016 ¹	2015	2014	2013	2012	2011	2010	2009
Net Electric Revenue (Million Baht)	335,860	451,476	450,634	418,888	375,188	313,702	313,634	280,882
Other Revenue (Million Baht)	11,367	14,331	14,378	15,182	12,975	11,048	10,077	9,417
Operating Expenses (Million Baht)	283,648	388,855	444,152	409,450	369,954	308,525	306,012	273,492
Other Expense (Million Baht)	43,411	56,279	3,463	3,542	3,234	3,764	2,936	2,807
Net (Loss) Income (Million Baht)	20,168	21,072	20,397	21,078	14,975	12,461	14,763	14,000
Investments In Long-term Assets (Million Baht)	18,387	26,183	(27,154)	(26,240)	(25,395)	(21,607)	(24,091)	(21,520)
Loans (Million Baht)	79,582	84,283	82,254	79,385	74,515	95,217	85,747	74,123
Net Assets (Million Baht)	381,020	366,977	348,426	328,084	309,269	303,817	283,997	262,037
Number of Customers	18,553,896	18,171,025	17,678,603	17,157,493	16,600,769	16,021,918	15,560,761	15,060,631
Total Sales of Electricity (Million kWh)	97,714	123,210	118,632	114,609	111,726	102,947	100,750	90,145
Average Price of Electricity (Baht / kWh)	4	4	4	4	3	3	3	3
Total Maximum Demand (MW)	20,439	18,597	18,030	17,574	17,001	16,208	16,154	14,642
Total Electric Energy (Million kWh)	103,574	130,385	125,484	120,796	118,739	108,355	107,758	96,536
Purchased Power (Million kWh)	103,503	130,294	125,380	120,696	118,644	108,243	107,655	96,452
PEA Generation (Million kWh)	71	91	104	100	95	112	103	84
Transmission, H.V, and L.V. Distribution Lines	766,232 ²	772,150	750,571	754,802	766,443	762,579	746,621 ³	742,334
(Circuit-km)								
Number of PEA offices	946	946	934	915	915	894	900	901
Number of Employees	30,895	29,093	28,109	27,792	28,060	27,784	27,818	27,847
Customers / H.V. Distribution Lines	61	61	60	57	56	54	53	52

¹ As at September 2016

² The 2013 - 2016 statuses were measured by GIS system

 $^{\rm 3}$ The L.V. distribution line was not combined in 2007 - 2010 statuses



2008	2007
257,243	252,964
9,334	8,910
252,248	247,898
4,160	2,645
10,169	11,330
(22,081)	(20,369)
71,416	70,385
247,323	243,094
14,600,420	14,210,946
89,602	87,548
3	3
14,127	13,698
95,607	93,383
95,541	93,322
66	61
748,453	707,910
901	901
27,521	25,728
50	51



