



บริษัท ทีพีซี เพาเวอร์ โฮลดิ้ง จำกัด (มหาชน)
TPC POWER HOLDING PUBLIC COMPANY LIMITED



Management's Discussion and Analysis (MD&A)
For the Year Ended December 31, 2018

No. TPCH-SC-001-02/2562

21 February 2019

Subject: Management's Discussion and Analysis of the Year Ended December 31, 2018

To: Managing Director and Manager, Stock Exchange of Thailand

TPC Power Holding Public Company Limited and its subsidiaries are pleased to announce our performance regarding the financial statement for the year ended December 31, 2018.

TPC Power Holding Public Company Limited is a holding company which invested in other companies that operate power plants from renewable energy. The Company has a mission to focus on enhancing the allocation of power plants to ensure the appropriate level of security to support the development of Thailand's Power Development Plan under the 3E pillars: 1. Energy Security 2. Economic 3. Environmental Friendly and has a main target to improve the management of the company's electricity costs efficiency.

Management's Discussion and Analysis (MD&A)
For the Year Ended December 31, 2018

Events During 2018

■ **Total Electricity Produced in 2018**

In 2018, the company had five power plants fully operated and one project started selling electricity to commercial systems in February. The total of electricity produced is 416,628,228 units. The average capacity factor of all six projects is 92%.

■ **Participated in a Bidding for Waste - to - Energy Project**

The Company participated in the bidding for waste – to - energy project of 20 MW with a contract term of 24 years, issued by Bangkok. The company submitted the bidding under the name of Siam Power Company Limited, which the company holds 50% of shares. Participating in the bidding is in response to the government's policy that wants to stimulate the power plant project from the community waste in the future.

■ **TRIS Rating at “BBB”**

TRIS Rating has rated TPC Power Holding PLC (TPCH) at “BBB” with a “Stable” outlook. The rating reflects predictable and strong cash flows the company continues to receive based on long-term power purchase agreements (PPAs) with state-owned utilities. The rating also recognizes solid operating performance of TPCH's power plants, who have exhibited solid performance over the past three years. A high yield of actual energy output has been achieved and surpassed 80% of the full capacity for the majority of the power plants. As a result, the EBITDA margin of the power plants has been maintained at a high level of about 50%.

■ **ASEAN Energy Award**

CRB was selected as the winners for the Thailand Energy Award 2018. Department of Alternative Energy Development and Efficiency (DEDE) stated the competition since 2000 in order to eulogize the outstanding performance of factories, buildings and personals that encourage energy conservation and renewable energy development. Nonetheless, CRB was also selected as a representative of Thailand for the ASEAN Energy Award which was hosted by Singapore in 2018. As a result, CRB was a winner in national grid category of renewable energy award.

- **ESG100**

The company was selected for the ESG100 (Environmental, Social and Governance) in 2018, for three consecutive years. Out of 683 companies that were assessed, THAIPAT selected 100 companies which have outstanding sustainability performance to construct the ESG100 list as a starting group of the 100 publicly listed companies addressing the growing demand on sustainable investments according to the GISR (Global Initiative for Sustainability Ratings).

- **Dividend Payment**

On 25 April 2018, the Ordinary General Meeting of Shareholders passed a resolution to pay a dividend from a net profit resulted in year 2017 of 0.0563 THB per share (a total of 22,587,560 THB) to shareholders on 24 May 2018.

- **Performance Test of Energy Crops at MGP**

On 9 March 2018, a performance test using “Rak Kaew” energy crops as 100% biomass fuel of a power has accomplished at MGP. The test result was a success.

- **Energy Crops in MWE**

After the power plant operations contract expired in February of 2018, the company has been managing an operation itself. Rak Kaew energy crops with a NHV of 2,235.16 kcal/kg or 9,356.37 kJ/kg has been used at MWE as an additional fuel. Its efficiency is equivalent to the main fuel, but with a lower cost. As a result, the cost of production per unit of production is lower as planned.

- **COD of Satun Green Power Project**

On 9 February 2018, Satun Green Power project (SGP), a power plant with an installed capacity of 9.2 MW, started selling electricity commercially to the Provincial Electricity Authority of Thailand

Progress of Projects

■ Progress

Operations	60 MW
CRB, MWE, MGP, TSG, PGP, SGP	
Constructions (SCOD)	49 MW
PTG, TPCH 1, TPCH 2 TPCH 5	
Development	10 MW
SP	

■ Project Under Development

Siam Power (SP) is a municipal-waste project having a total installed capacity of 9.5 MW and will be selling electricity under the FIT system to the Metropolitan Electricity Authority. The company has already filed a petition for a power purchase agreement (**PPA**). The Energy Regulatory Commission will announce the names of those who have passed the qualification by April 30, 2019, to sign the power purchase agreement by August 28, 2019 and set the date of the electricity supply to the commercial system (SCOD) before December 31, 2021

The project has signed a contract for construction and management of 3 million tons (133 Rai) of solid waste landfill into RDF used for producing electricity. The contract started in May of 2015 and will last for 23 years. The project also invested in another 800,000 tons (40 Rai) of public landfill. A total of 3,800,000 tons of waste will be convert into 1,700,000 tons of RDF at a NHV of 3,155.93 kcal/kg. Such amount of RDF can be used to produce electricity for 27 years.

On 18 February 2019 Siam Power Company Limited has selected to be the operator of Waste Energy power plant for Local Government that has potential to operate the quick win project by Nonthaburi local Government and successfully operated that followed the announcement of The Ministry of Interior.

Overview of Financial Performance of the Company

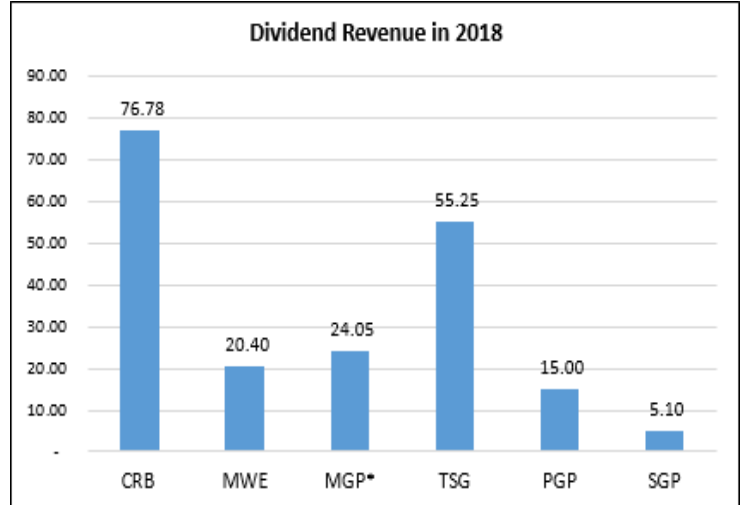
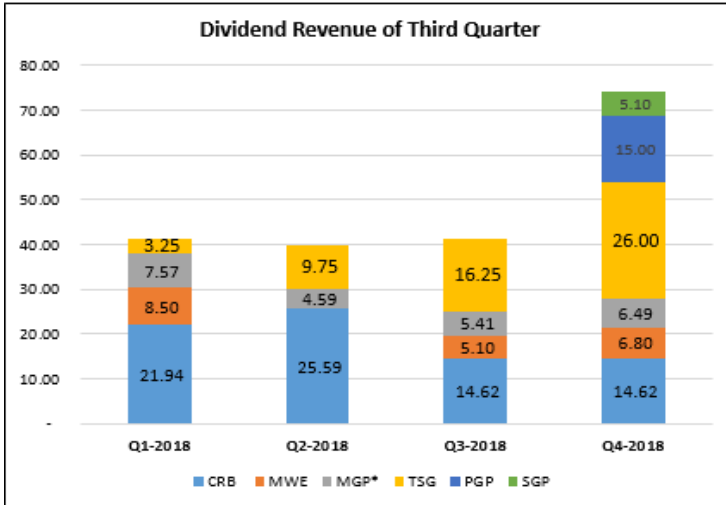
Separated Financial Statement	Q1-2561	Q2-2561	Q3-2561	Q4-2561	Change +/-	2561	2560	Change +/-
					QoQ			YoY
Revenue								
Dividend Revenue	41.25	39.94	41.38	74.01	78.8%	196.58	163.39	20.3%
Other revenue	4.90	3.87	2.95	3.22	9.2%	14.94	18.33	(18.5%)
Total Revenue	46.15	43.81	44.33	77.23	74.2%	211.52	181.72	16.4%
Expenses					-			
Administrative expense	(13.12)	(16.58)	(16.08)	(21.50)	33.7%	(67.28)	(60.06)	12.0%
Allowance for doubtful account	0.00	0.00	0.00	0.00	0.00	0.00	(60.64)	(100.0%)
Loss for closing subsidiaries	0.00	0.00	0.00	0.00	-	0.00	(0.65)	(100.0%)
Finance cost	(0.04)	(0.04)	(0.05)	(0.05)	7.5%	(0.18)	(0.22)	(18.2%)
Total Expense	(13.16)	(16.62)	(16.13)	(21.55)	33.6%	(67.46)	(121.57)	(44.5%)
Profit (Loss) before income tax	32.99	27.19	28.20	55.68	97.5%	144.06	60.15	>100.0%
Income (Expense) tax	0.00	0.00	0.00	0.00	-	0.00	0.00	-
Profit(loss) for the year continuing operations	32.99	27.19	28.20	55.68	97.5%	144.06	60.15	>100.0%
Other comprehensive income (expense)	0.00	0.00	0.00	0.75	-	0.75	(0.75)	(>100.0%)
Profit (Loss) for the year	32.99	27.19	28.20	56.43	>100.0%	144.81	59.40	>100.0%
Earnings (Loss) per share	0.08	0.07	0.07	0.14	>100.0%	0.36	0.15	>100.0%

Separated financial statement ending on 31 December 2018 and 2017 has Net profit (Loss) of 144.81 Million THB and 59.40 Million THB increased in total of 85.41 Million THB or 100% increase due to the following reasons:

- **Increased Dividend Revenue**

For the year ended on 31 December 2018 and 2017 total Dividend Revenue is 196.58 million THB and 163.39 million THB compared to the last year it has increased to the amount of 33.19 million THB or 20.3% increase from PGP and SGP projects

In 2018 the Dividend revenue from CRB is in total of 76.78 million THB, MWE for 20.40 million THB, MGP for 24.05 million THB, TSG for 55.25 million THB, PGP for 15 million THB and SGP for 5.1 million THB in details as follows:



Note MGP* A Joint venture, recognized revenue from electricity sales according to share holder proportion

■ **Other Revenue**

For the end of 31 December 2018 and 2017 revenues are 14.94 million THB and 18.33 million THB compared to the last year it decreased 3.39 million THB due to the profit (Loss) of the investment fund selling and the decrease of a short term loan interests from its subsidiaries.

■ **Administrative Expense**

By the end of 31 December 2018 and 2017 the company has 67.28 million THB expenses and 60.06 million THB compared to the last year it has 7.22 million THB increased. The most of the expenses goes to employees' wages/salaries, Board, Manager, Utilities, other administrative expense and managing expense, Consultant, Public relations, depreciation and the company has cut the Bad Debt of value added tax.

■ **Doubtful Accounts**

For a year ended on 31 December 2018 there is no doubtful debt but in 2017 company has set Doubtful debt in the amount of 60.64 million THB due to the doubtful debt of the asset income tax and short term investment

■ **Financial cost**

For this year ended on 31 December 2018 and 2017 the total Financial cost of 0.18 million THB and 0.22 million THB compared to the last year it has decreased to 0.04 million THB which is Interest

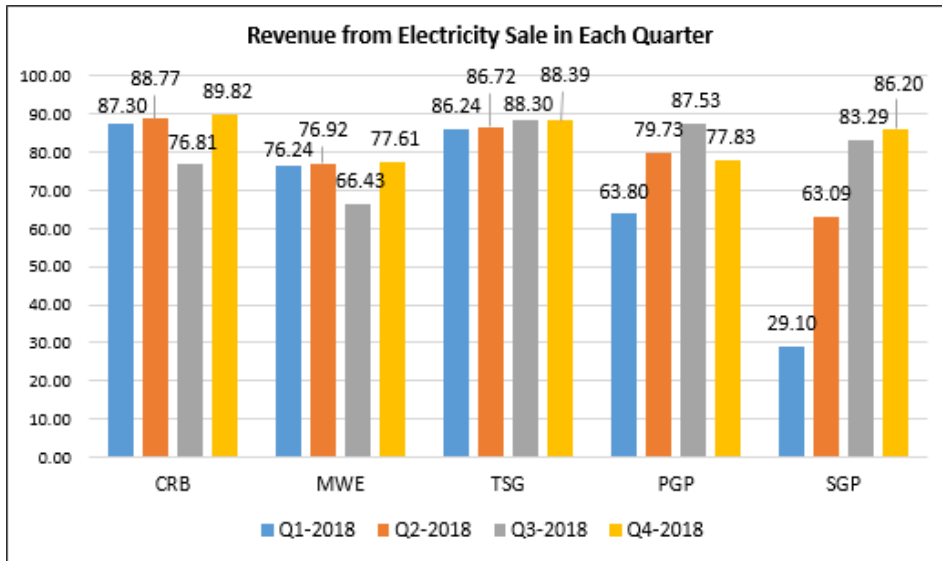
Consolidated Company Performance

Consolidated Financial Statement	Q1-2561	Q2-2561	Q3-2561	Q4-2561	Change +/-		2561	2560	Change +/-	
					QoQ				YoY	
Revenue from sales of electricity	342.68	395.24	402.36	419.85	4.3%		1,560.12	1,092.67	42.8%	
Cost from sales of electricity	(189.46)	(203.72)	(208.96)	(221.68)	6.1%		(823.82)	(585.27)	40.8%	
Gross Profit	153.22	191.52	193.39	198.17	2.5%		736.30	507.40	45.1%	
Other revenue	3.62	2.88	1.24	2.09	68.6%		9.84	14.37	(31.5%)	
Profit Before Expenses	156.84	194.40	194.63	200.26	2.9%		746.14	521.77	43.0%	
Administrative Expense	(21.47)	(26.22)	(29.06)	(33.04)	13.7%		(109.79)	(84.81)	29.4%	
Allowance for doubtful account	0.00	0.00	0.00	0.00	-		0.00	(60.64)	(100.0%)	
Loss for closing subsidiaries	0.00	0.00	0.00	0.00	-		0.00	(0.25)	(100.0%)	
Finance Cost	(19.51)	(21.20)	(20.93)	(20.10)	(4.0%)		(81.73)	(63.93)	27.8%	
Profit (Loss) from investment in joint venture	3.73	(3.47)	4.55	1.63	(64.3%)		6.43	14.42	(55.4%)	
Total Expense	(37.25)	(50.89)	(45.44)	(51.51)	13.4%		(185.09)	(195.21)	(5.2%)	
Profit (Loss) Before Income Tax	119.59	143.51	149.20	148.75	(0.3%)		561.05	326.56	71.8%	
Income Tax Expense	0.00	0.00	0.00	(0.30)	-		(0.30)	(0.28)	6.0%	
Profit(loss) for the year continuing operations	119.59	143.51	149.20	148.45	(5.0%)		560.75	326.28	71.9%	
Other comprehensive income (expense)										
Other comprehensive income for the year	0.00	0.00	0.00	0.75	-		0.75	(0.75)	(>100.0%)	
Profit (Loss) for the year	119.59	143.51	149.20	149.21	(0.0%)		561.51	325.53	72.5%	
Profit (loss) per share	0.20	0.23	0.23	0.23	(0.9%)		0.88	0.52	71.0%	
Total comprehensive income attributable to :										
Owners of the Company	81.29	90.36	91.93	91.07	(0.9%)		354.65	207.36	71.0%	
Non-controlling interests	38.30	53.15	57.27	58.14	1.5%		206.86	118.17	75.1%	
Total comprehensive income (expense) for the year	119.59	143.51	149.20	149.21	0.0%		561.51	325.53	72.5%	

Unit: Million THB

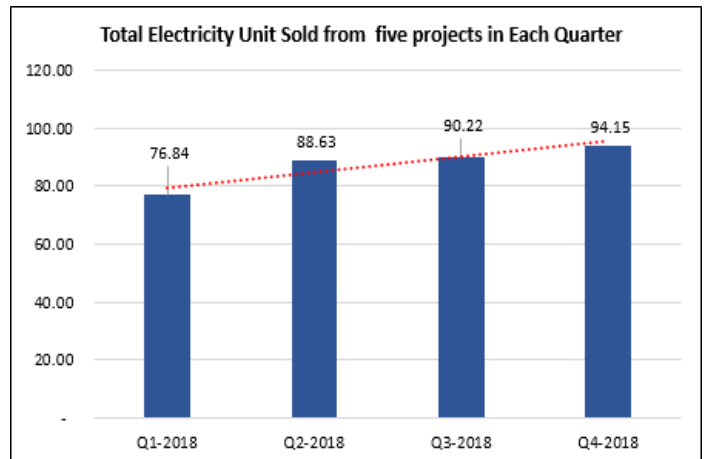
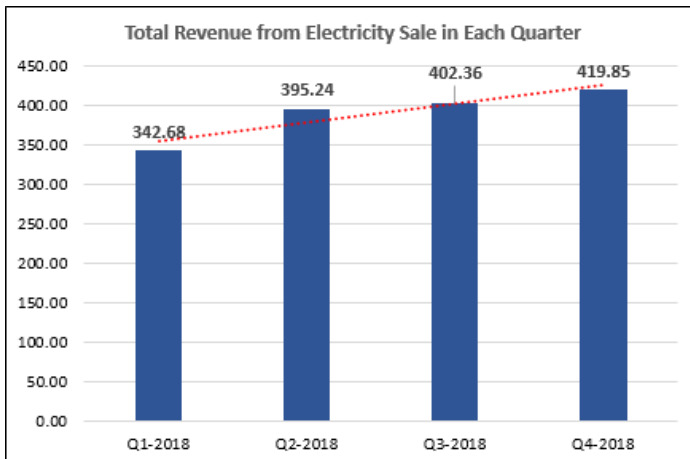
■ **Revenue from Electricity Sales**

For the year ended on 31 December 2018 and 2017 the total of Electricity sales are 1,560.12 million THB and 1,092.67 million THB compared to the last year it has increased to 467.45 million THB or 42.8% due to in 2018 SGP was one other project that Generated electricity for commercial and PGP has operated electricity for a whole year (COD Q3-2017). Each project has revenue from electricity sales as follows:

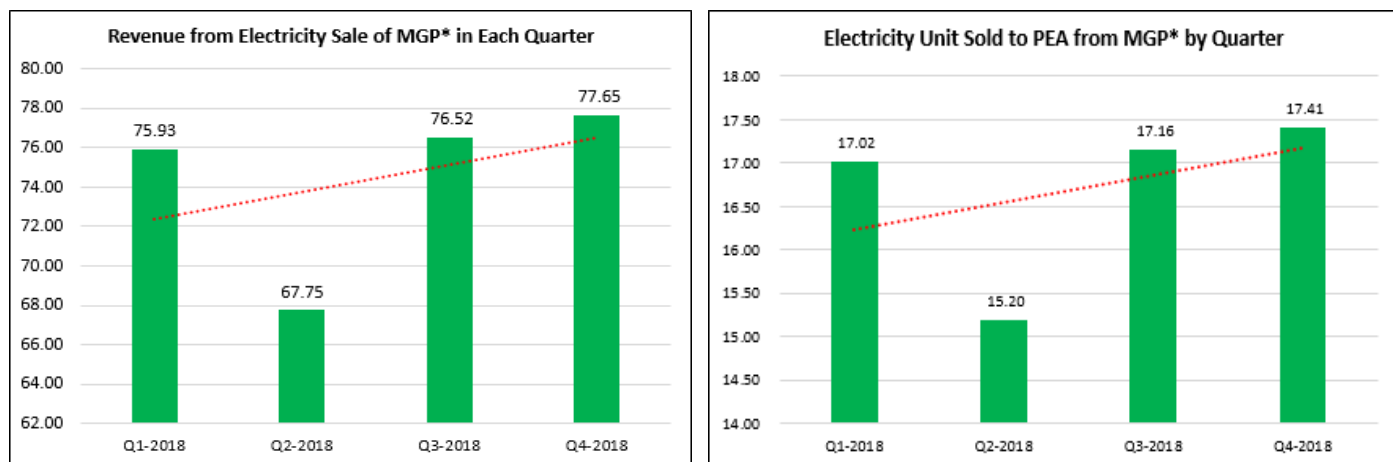


Unit: Million THB

Revenue from electricity sales increasing every year due to a better power generated performances, so projects that already started COD have an improvement, adjustment and maintenance for an annual year. Which makes power generator performs and produce more superior, increasing revenues in tendency. Even more projects that under construction has a plan pending for COD which will make much more power and revenues continuously.



Revenue from MGP electricity sales (Joint Venture) in each quarter seems to be increase including the annual year of maintenance for a better performance.



■ **Cost from sales of electricity**

For the year ended on 31 December 2018 and 2017. The cost from sales of electricity is in total of 823.82 million THB and 585.27 million THB compared to the last year it has increased to 238.55 million THB consists of the main expense: Operation cost, Operational managing, tools and instruments for making the generator has the best performance. In 2018 CRB, MWE, MGP*, PGP, SGP has done the annual year of maintenance which makes the maintenance cost is higher. Details as follows.

Cost of Electricity Sales (Million THB)	Q4-2018						
	CRB	MWE	TSG	PGP	SGP	Total	%
Operation cost	143.46	147.54	138.69	113.70	95.15	638.53	77.83
Depreciation and Amortization cost	25.90	27.90	28.09	33.29	31.01	146.19	17.62
Maintenance cost	6.20	13.62	0.00	2.27	0.98	23.06	2.63
Electricity cost	1.37	1.58	4.08	3.71	5.28	16.03	1.93
Total Cost	176.93	190.64	170.86	152.97	135.42	823.82	100.00
Margin of COGS							52.80

Cost of Electricity Sales (Million THB)	Q4-2017					
	CRB	MWE	TSG	PGP	Total	%
Operation cost	139.02	148.96	128.62	60.60	477.20	81.54
Depreciation and Amortization cost	26.55	26.91	27.52	16.30	97.28	16.62
Maintenance cost	0.96	0.00	0.22	0.10	1.28	0.22
Electricity cost	1.40	1.88	3.89	2.34	9.51	1.62
Total Cost	167.93	177.75	160.25	79.34	585.27	100.00
Margin of COGS						53.56

- **Other Revenue**

Other revenue by the year ended on 31 December 2018 and 2017 are in total of 9.84 million THB and 14.37 million THB compared to the last year it has decreased to 4.53 million THB which is from short term loan interests from subsidiaries, Operation Revenue, Short term investment dividend.

- **Administrative Expenses**

Administrative Expenses by the year ended on 31 December 2018 and 2017 the company and its subsidiaries is in total of 109.79 million THB and 84.81 million THB compared to the last year it has increased to 24.97 million THB. The main cost are employees' wages and salaries, Board, Utilities, Power plant Capital contribution, depreciation, interest, and the company has cut the Bad Debt of value added tax. Household and other administrative cost for a better performance.

- **Finance Cost**

Financial cost by the year ended on 31 December 2018 and 2017. TPCH and its subsidiaries has financial cost in amount of 81.73 million THB and 63.93 million THB compared to the last year it has increased to 17.80 million THB due to load interests.

▪ **Profit (loss) from investments in joint ventures**

For the year ended on 31 December 2018 and 2017 profit-sharing from subsidiaries are 6.43 million THB and 14.42 million THB compared to the last year it has decreased to 7.99 million THB due to the recognition of overall operation of subsidiaries according to the scale of investment in details as follows:

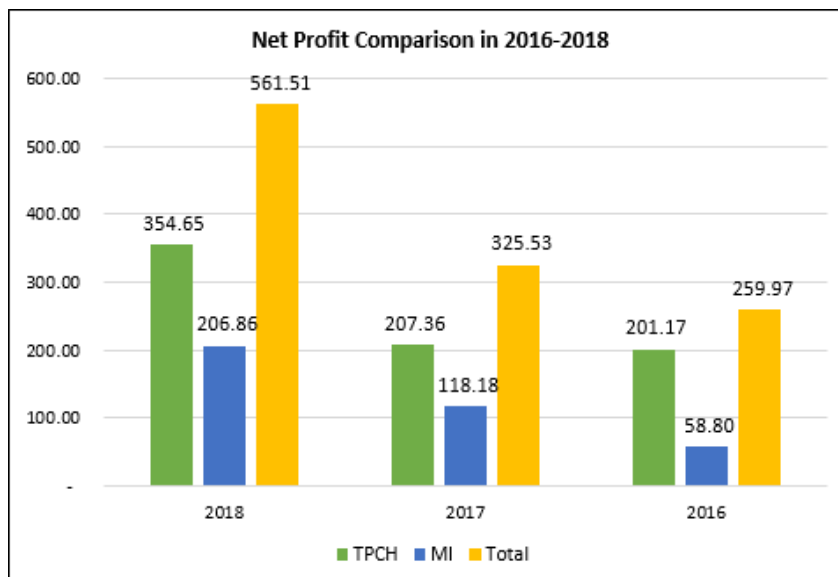
- **MGP 46%** has 32.01 million THB profit-share
- **PA Waste And Energy 33%** has 0.05 million THB
- **Siam Power Company Limited (SP) 50%** has 25.52 million THB

Due to the development of waste energy Power operation, Funding for development is expected

▪ **Total Net Profit (Loss)**

For the year ended on 31 December 2018 and 2017 The Company has total net profit (Loss) are 561.51 million THB and 325.53 million THB compared to the last year it has increased to 235.97 million THB or 72.5%

Profit of the company for the year ended on 31 December 2018 and 2017 are 354.65 million THB and 207.36 million THB compared to the last year it has increased to 147.29 million THB due to one upcoming project and every projects has operated in full scale performance. Electricity production increased and in 2018.

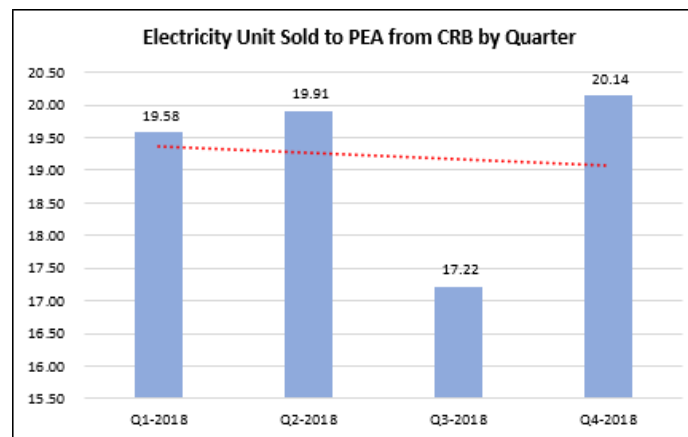
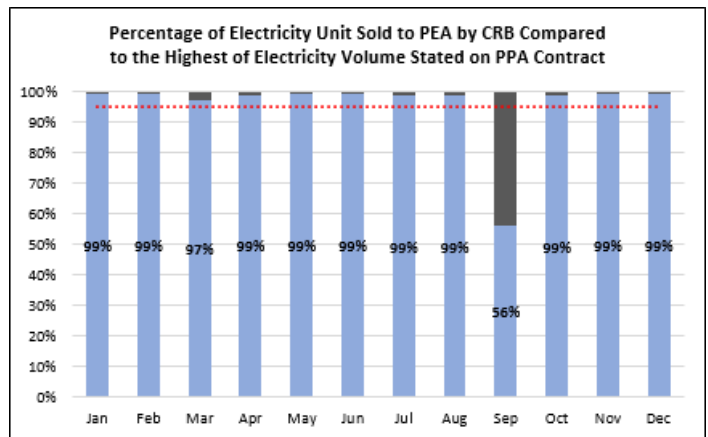
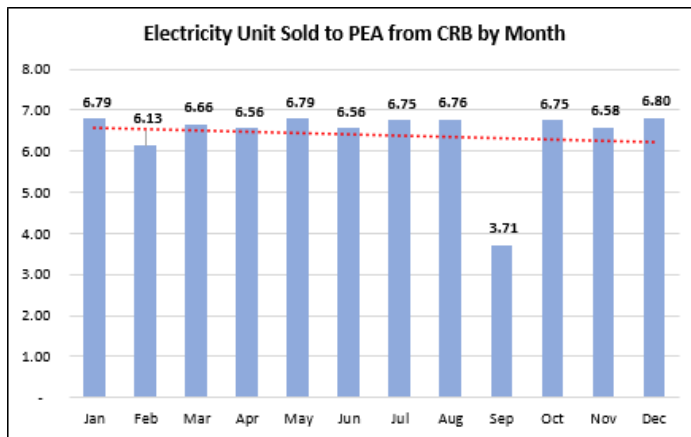


Unit: Million THB

Performance of Power plants under operations (6 plants in total)

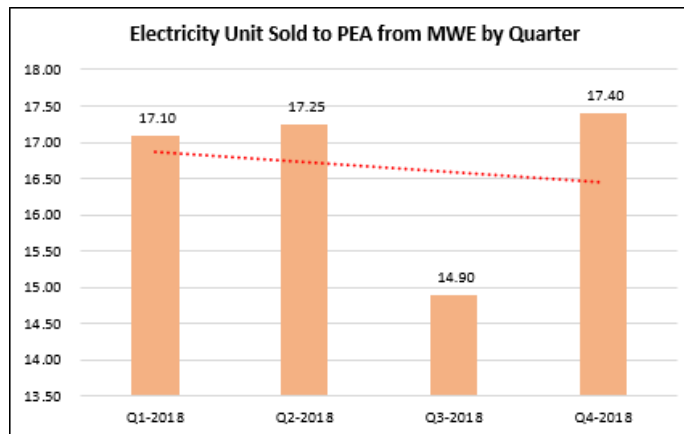
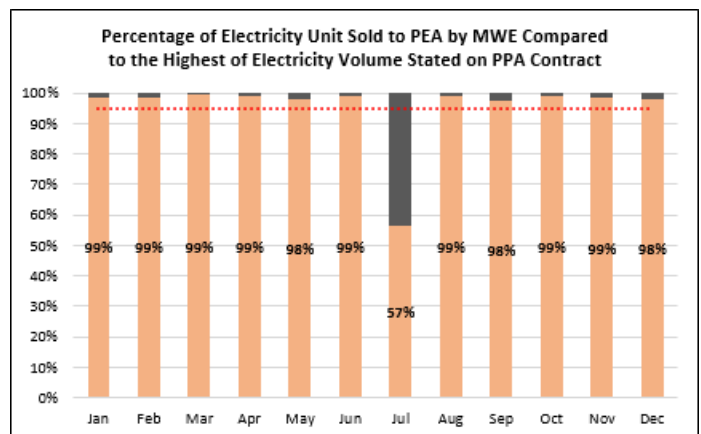
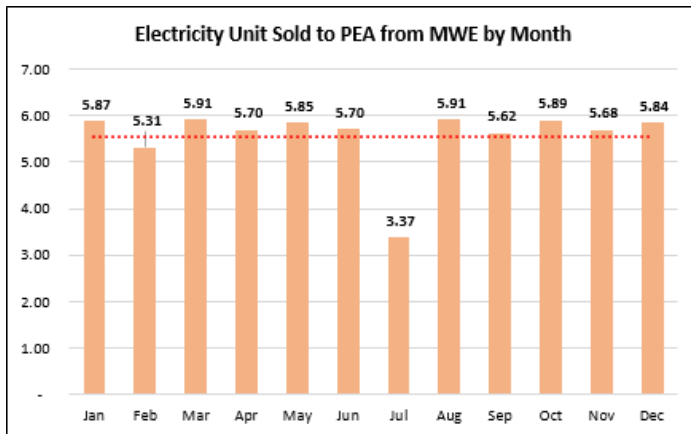
CRB, a 9.2 MW power plant which started selling electricity in Feed-in Tariff (FiT) system for 4.45 Bath/Unit. In Q4/2018 CRB generated electricity for commercial of 20,142,510 unit and during the period, it had 10 hours unplanned shutdown.

Operation result in 2018: CRB generated electricity for commercial of 76,847,012 unit and has a planned shutdown for 12 days and unplanned shutdown for 1 day and 15 hours which is showed in details as follows



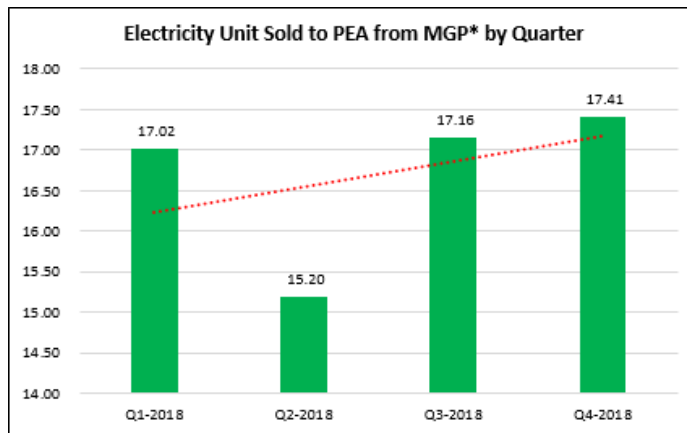
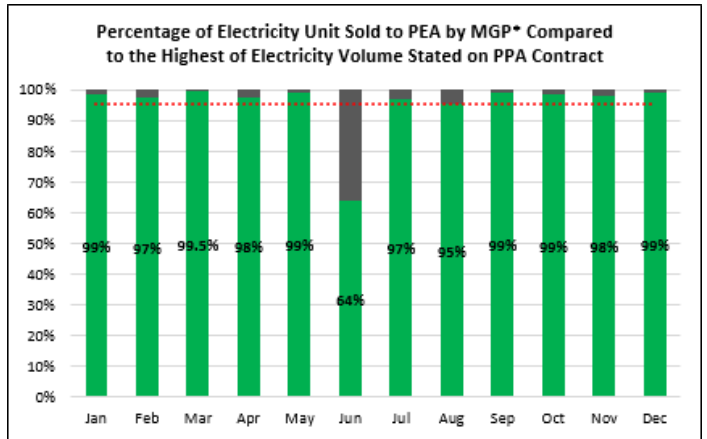
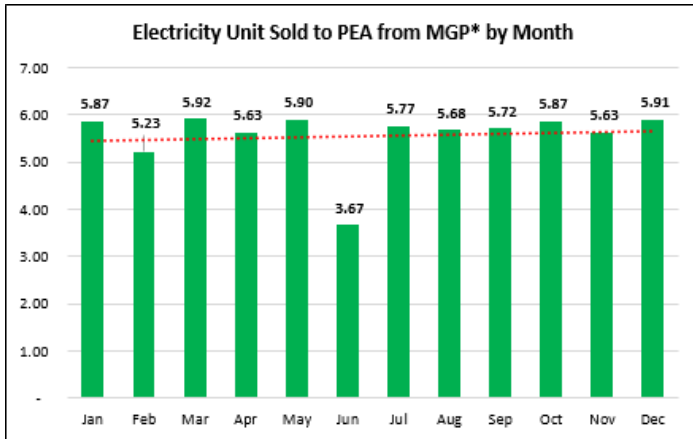
MWE, an 8.0 MW Power plant which started selling electricity in Feed-in Tariff (Fit) system for 4.45 Bath/unit. In Q4/2018 MWE generated electricity for commercial of 17,402,916 unit and during the period, it had 2 days and 7 hours unplanned shutdown

Operation result in 2018: MWE generated electricity for commercial of 66,643,650 unit and has 13 days planned shutdown and had unplanned shutdown for 5 days and 1 hours in details as follows



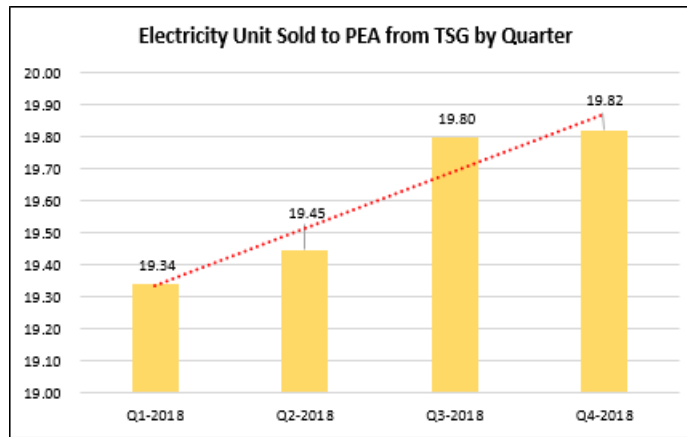
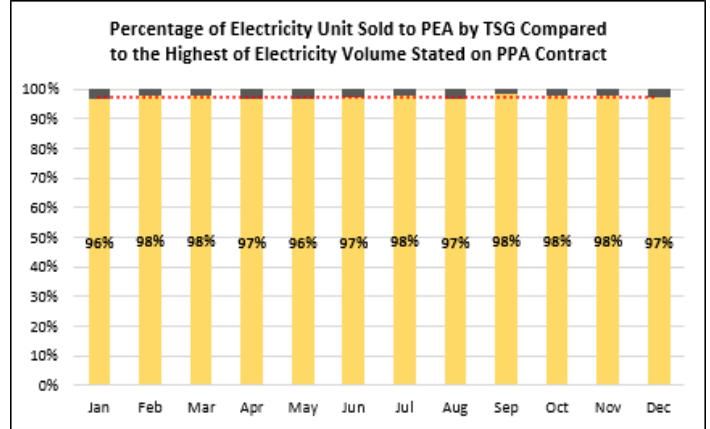
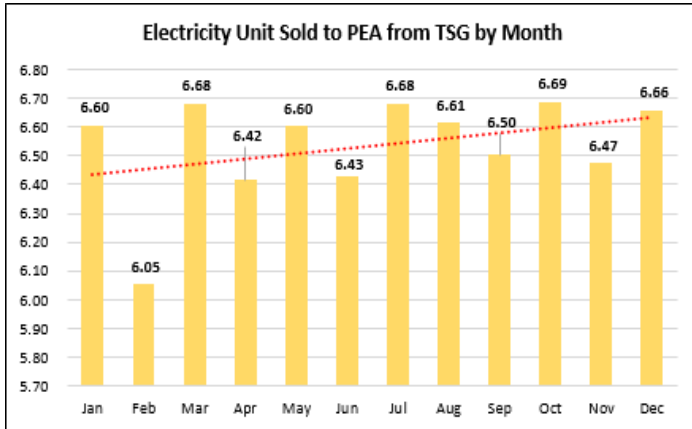
MGP, an 8.0 MW power plant which started selling electricity in Feed-in Tariff (FiT) system for 4.45 Bath/unit. In Q4/2018 MGP generated electricity for commercial of 17,412,420 unit. During the period it had 8 hours unplanned shutdown.

Operation result in 2018: MGP generated electricity for commercial of 66,789,471 unit and had 9 days of planned shutdown and unplanned shutdown for 4 days and 12 hours in details as follows



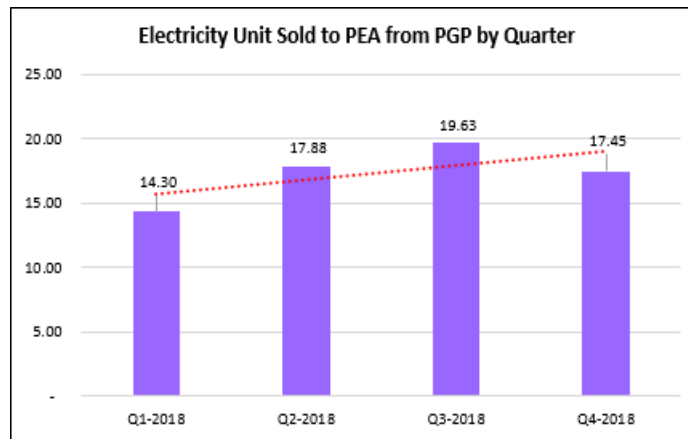
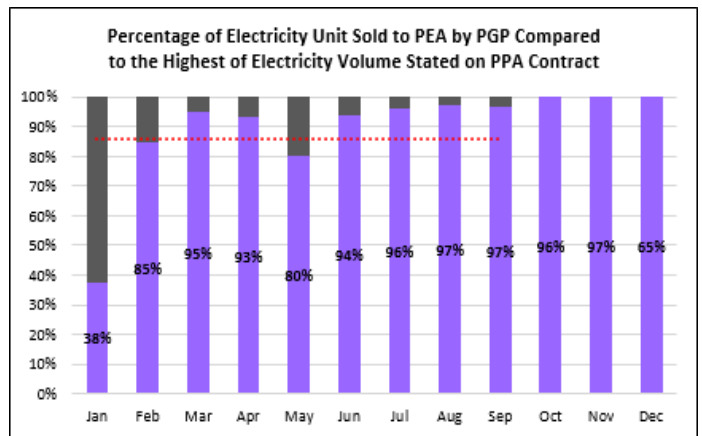
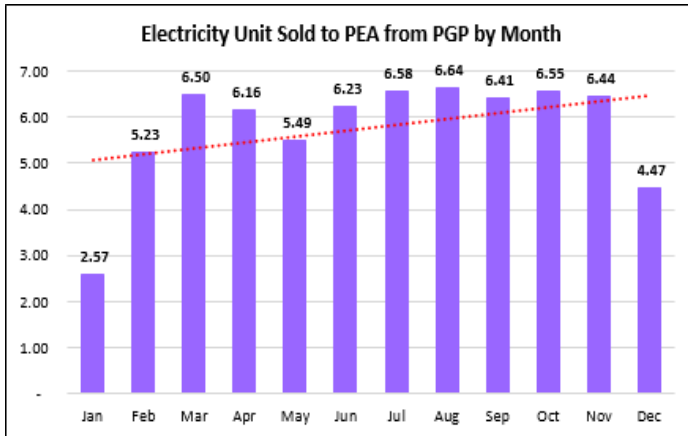
TSG, a 9.2 MW power plant which started selling electricity in Feed-in Tariff system (FIT) for 4.45 Bath/unit. In Q4/2018 TSG generated electricity for commercial of 19,821,073 unit. During the period it had 18 hours unplanned shutdown.

Operation result in 2018 TSG generated electricity for commercial of 78,408,036 unit and has 3 days 20 hours which is showed in details as follows



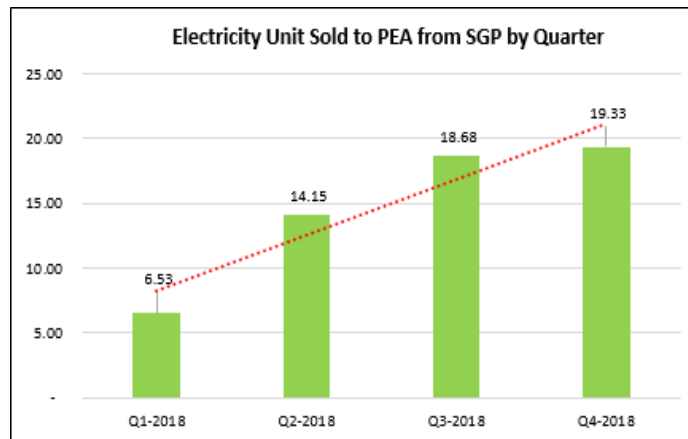
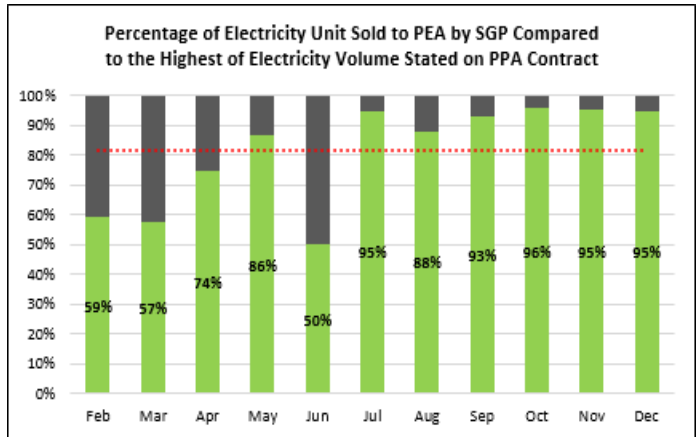
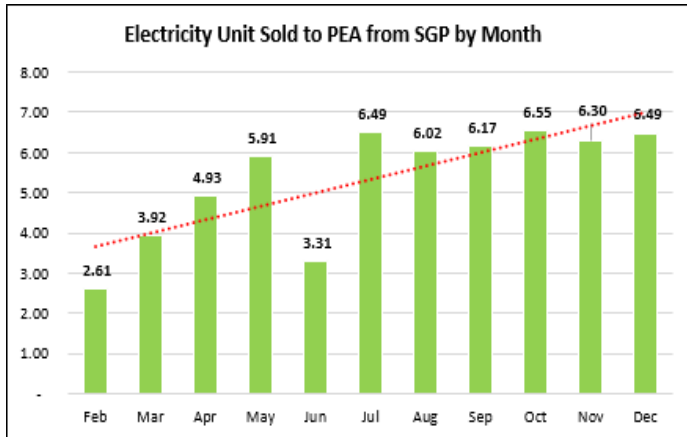
PGP, a 9.2 MW power plant which started selling electricity for commercial in Feed-in Tariff (FIT) system for 4.45 Bath/unit. In Q4/2018 PGP generated electricity for commercial of 17,451,120 unit. During the period PGP had 10 days planned shutdown and 1 day for unplanned shutdown.

Operation result PGP generated electricity for commercial of 69,262,894 unit and has 17 days planned shutdown and 20 days 18 hours for unplanned shutdown which is in details as follows



SGP, a 9.2 MW power plant which started selling electricity for commercial in Feed-in Tariff (FIT) system for 4.45 Bath/unit. In Q4/2018 SGP generated electricity for commercial of 19,329,770 unit. During the period SGP had 1 day 9 hours unplanned shutdown.

Operation result in 2018 SGP generated electricity for commercial of 58,677,165 unit and has 10 days planned shutdown and 43 days 1 hours unplanned shutdown in details as follows



Industry Overview

From The National Energy Policy office conference report on 24 JAN 2019 has stated the Power Development plan (PDP 2018) that power plants according to the Government Stimulation policy within 2018-2037 consist of 400 MW waste energy power plant which have been adjust the electricity purchase into FiT system for SPP. In the established area the power plant was right by Local Government Organization in Special or private platform. By this resolution, it stimulated private company to make a proposal for manage and operate the local waste energy power plant in their own area or other proper area, which is according to TPCH Company's policy that takes priority on renewable energy investment. In 2016 TPCH has invested on Siam Power Company Limited (SP) which mainly focus on Waste – to – energy. The goal of ADEP 2015 - 2036 is to have a total of 500 MW of local waste power plants, TPCH foresees the opportunity in developing waste energy power operation due to the fact that Waste power helps decreasing country's waste critical problems and it helps bringing back the social and environmental benefits in the best afford.

From government research on the management of intelligent electrical systems (Microgrid) for electricity trading via Blockchain and electricity trading (Peer-to-Peer). It is expected that in the future, there will be more forms of electricity production and trading within the community, but the main electricity distribution from EGAT is still in need. In the future, large power plants will be reduced and replaced by smaller renewable power plants which need to be stable in order to secure the country's electrical system. With the expertise of TPCH in operating a small power production by the average Sale Capacity Factor of every project is more than 92% that shows the stability in power operation. Enabling the company to be a part of Microgrid system as well.

For international project, TPCH has been researched and take more interest in the overseas power plant and recently we focus on countries in CLMV group as the main strategy.

For your information,

TPC Power Holding Public Company Limited

(Mr. Cherdsak Wattanavijitkul)

President

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TPCH	:	TPC Power Holding Public Company Limited
CRB	:	Chang Rak Biopower Company Limited
MWE	:	Maewong Energy Company Limited
MGP	:	Mahachai Green Power Company Limited
TSG	:	Thungsung Green Company Limited
PGP	:	Phatthalung Green Power Company Limited
SGP	:	Satun Green Power Company Limited
TPCH1	:	TPCH Power 1 Company Limited
TPCH2	:	TPCH Power 2 Company Limited
TPCH5	:	TPCH Power 5 Company Limited
PTG	:	Pattani Green Company Limited
PA	:	PA Waste and Energy Company Limited
SP	:	Siam Power Company Limited
PEA	:	Provincial Electricity Authority of Thailand
COD	:	Commercial Operation Date
SCOD	:	Scheduled Commercial Operation Date
RDF	:	Refuse Derived Fuel