

Opportunity Day

FY2018

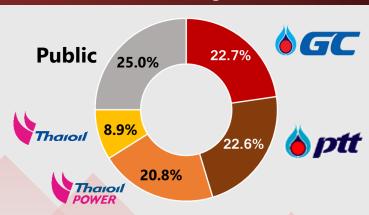
THE INNOVATIVE POWER FLAGSHIP OF PTT GROUP

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GPSC Innovative Power Company at a Glance

Shareholding Structure



Thai Oil Power is 73.99% held by Thai Oil and 24.01% by PTT As of 16 November 2018

Company Information

Head Office	555/2 Energy Complex Building B, 5th Floor, Vibhvadi-Rangsit Road, Chatuchak, Bangkok
Business Type	Energy & Utilities
Registered Capital (Fully Paid)	THB 14,983 million
Market Cap (As of 25 February 2019)	THB 96,640.40 million

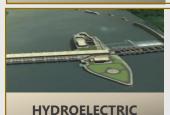
By Year of 2020, total Committed Generating Capacity Electricity 1,955 MWe, Steam 1,585 T/H



Electricity 1,550 MW
Steam 1,585 T/H
Industrial Water 2,080 Cu.m./H
Chilled Water 12,000 RT



Electricity 58 MW



Electricity 347 MW



24M Technologies, Inc. (USA) Business Service Alliance Co.,Ltd.

GPSC Customers' Profile





53% PTT Group



38% EGAT



9% Industrial Users

*2018 Revenue by Customers

LONG TERM OFF TAKE CONTRACTS

- ✓ Guaranteed market and source of revenue
- ✓ Guarantee a minimum level of profit in regards to their investment
- ✓ Price adjustment formula, varying with fuel price



Power Plant Definition and Revenue Structure

IPP

Independent Power Producer (IPP):

- A larger power producer who has electricity capacity more than 90 MW
- IPPs are obliged to sell their entire output to EGAT

SPP

Small Power Producer (SPP):

 A small power producer who sell their electricity no more than or equal to 90 MW to EGAT

SPP Type

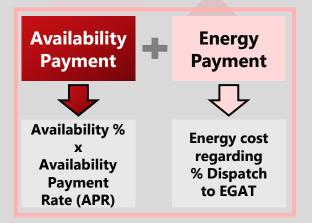
Firm : Contract Term > 5 Years Non-Firm : Contract Term <= 5 Years

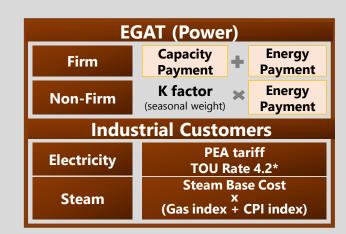
 SPPs can sell their electricity and steam to industrial customers located next to the SPP plant

VSPP

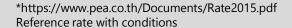
Very Small Power Producer (VSPP):

- A very small generator whose power generating process is generated from renewable energy, specific fuels, and energy with no more than 10 MW of electricity capacity
- VSPPs are able to sell power to the Distribution Utility



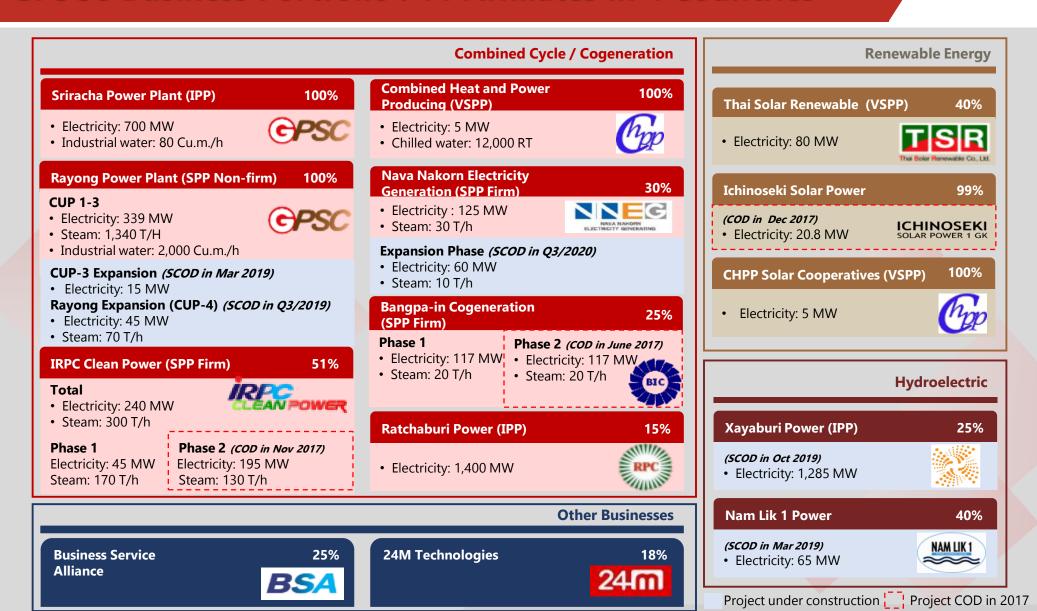








GPSC's Business Portfolio: 11 Affiliates in 4 Countries



Q4/2018 Highlights

Investment in Affiliates

Financial Performance

Q4/2018 Highlights

GROWTH

- GLOW shares' acquisition (2,771 MW)
- Solar power plants shares' acquisition (39.5 MW)
- Energy Recovery Unit project (250 MW)
- Rayong Waste to Energy (9.8 MW)

PROFIT

2018 EBITDA Increased 30% and NI Increased 6% from 2017

♦ The increase in electricity sales from the full operation of IRPC-CP Phase 2 and ISP1 since Q4/2017

SUSTAINABILITY

- 2018 dividend payment of Baht 1.25 per share
 - ♦ The interim dividend of Baht 0.45 per share was paid, the remaining dividend for 2H/2018 of Baht 0.80 per share will be paid after receiving approval from AGM 2019
- AWARDS in Q4/2018
 - ♦ CFO of the year excellence in technology & Treasury management transformation
 - **♦ TOP 50 ASEAN PLCs and Excellence Sustainability Report Award 2018**

CONTROL

4 Projects to start COD in 2019-2020 as timeline









Nam Lik1

Xayaburi

CUP-4

NNEG Expansion

Energy Recovery Unit Project



Project Description	 As a power and steam supporting unit of CFP Near Laem Chabang Port The CFP project will improve effectiveness in the production process and transform fuel oil and bitumen into jet fuel and diesel
Investment Cost	Approximately USD 757 mm
Condition Precedent	Approval from AGM 2019
Construction Period	• 4 years
SCOD	• Q3 / 2023
Electricity Demand	200 MW (Installed Capacity 250 MW)
Steam Demand	• 175 T/H

Strategic position & Payment Term





Reduce overall CAPEX of CFP Project

Reduce D/EBITDA ratio and increase liquidity to future investment

Benefit from higher IRR for CFP Project after carve out

Maintain Competitiveness in Reliability, Safety, Efficiency & Plant Optimization



Expert and skillful in power business

Understands the operation of oil refinery petrochemical business

Familiarity with the company's staff ensures smooth and efficient communications

Strong and stable financial position ensures capability to support large investment



GPSC Electricity Growth Pipeline

Electricity Equity (MWe)

4,766 +76.5% CAGR by 2020



1,955

Inorganic Growth

Operating Solar Project

- **39.5 MW**
- Expected to complete in Q1/19

+250

Glow Energy PLC.

- 2,771 MW (exclude SPP1)
- Expected closing in Q1/19

1,530



Current Capacity

+425

Under Construction Projects

COD in 2019

CUP3 expansion (Steam Turbine Generator): 15 MW

+2,811

- XPCL Hydro Power Plant: 321 MW
- NL1PC Hydro Power Plant: 26 MW
- Rayong Power Plant Expansion (CUP4): 45 MW + 70 T/h

COD in 2020

■ NNEG Expansion: 18 MW + 3 T/h

International Power Project

Future Growth

Growth along with PTT

- Myanmar: GTP projects
- New opportunities in others countries

Business expansion along with

ERU Project (250 MW; SCOD in 2023)

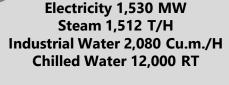
Renewable Projects

PTT Group

- Explore new opportunities of renewable business
- Explore more in international opportunities

Battery and System Integrator

- Samples testing to Industrial Users
- Expand ESS business to Non-PTT Group





Strategic Direction and Growth Strategy



The global leading innovative and sustainable power company



Operational Excellence

- Maximize Core Business
- Manage Invested companies



3 Growth Engines

- Growth along with PTT Group
- International market
- Renewable



New S-curve

- Battery
- Energy Storage System Integrator
- Energy ManagementSolution Provider

Digitalization

Sustainability

Finance Support

Human Resource & Corporate Value



Q4/2018 Highlights

Investment in Affiliates

Financial Performance





Nam Lik 1 Power Company Limited (Lao PDR)



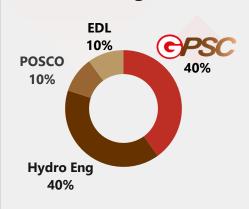


Type: Run-of-River Hydropower

Electricity: 64.7 MW

Customer: Electricity: EDL 63.8 MW (30 years PPA)

Shareholding:



- As of Q4/2018, the construction progress of NL1PC as appraised by technical advisor was at 96.5%.
- The main activities such as start pre-commissioning phase of Turbine Unit 2, The tie-in of 115 kV transmission line to Hin Heup substation has been executed.







Xayaburi Power Company Limited (Lao PDR)



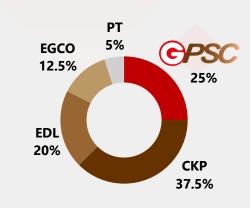


Type: Run-of-River Hydropower

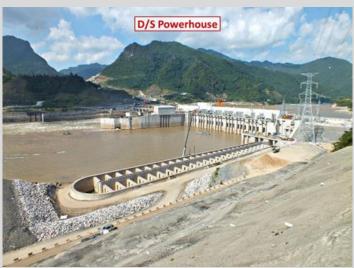
Electricity: 1,285 MW

Customer: Electricity: EGAT 1,220 MW, EDL 60 MW

Shareholding:



- The main construction tasks such as power house, intermediate block, fish ladder and 500 kV transmission line were mostly completed.
- The commissioning of Generator Unit 1 has started since December 2018 as scheduled.







Central Utility Plant 4 : CUP4 (Thailand)





Type: Gas-fired Cogeneration

Electricity: 45 MW

Steam: 70 T/h

Customer:

- PTT Group
- Non-PTT Group
- EGAT

Shareholding:



- As of Q4/2018, the progress of site construction was over 33%.
- The construction of control building and high voltage substation have been started.
- All of main power plant equipment have been procured. The first module will arrive in the beginning of 2019.







Nava Nakorn Electricity Generation (NNEG) Expansion Project





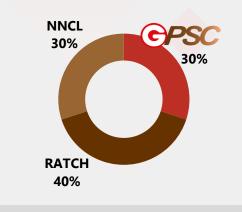
Type: Gas-fired cogeneration

Electricity: 60 MW

Steam: 10 T/h

Customer: • Non-PTT Group

Shareholding:



- As of Q4/2018, the project progress has reached 12%.
- Main tasks such as site preparation and procurement for main machines and equipment were executed as planned.





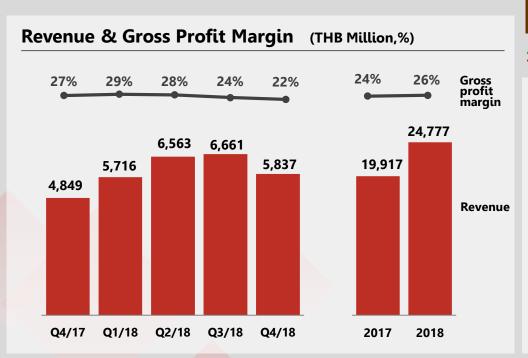
Q4/2018 Highlights

Investment in Affiliates

Financial Performance



Q4/2018 Financial Performance Summary (1/2)





Q4/18 vs Q3/18 QoQ 2018 vs 2017 12M

▲ Rev. +988 /+20% ▼ GPM -5%

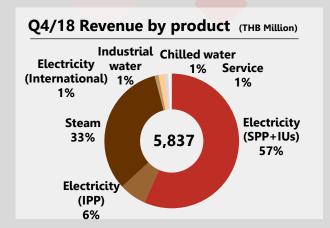
▼ Rev. -824 / -12% ▼ GPM -2% ▲ Rev. +4,860 / +24% ▲ GPM +2%

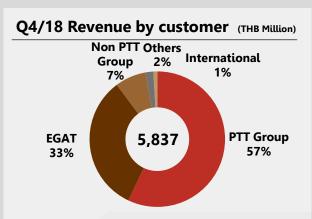
Revenue:

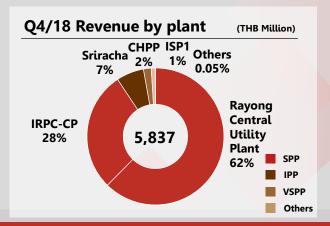
- YoY, 12M: Higher revenue from an increase sales from the COD of IRPC-CP Phase 2 and ISP1 since Q4/2017 and solar rooftops EPC service of CHPP
- QoQ: The decrease was from major overhaul of Sriracha plant and planned maintenance shutdown of IRPC-CP in Q4/2018

Gross Profit Margin:

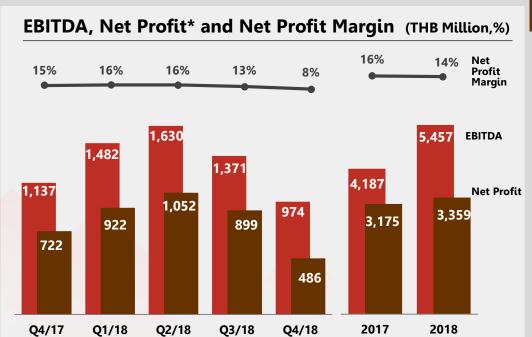
- YoY, QoQ: Gross Profit Margin decreased due to a rise in natural gas prices while Ft rate remained unchanged
- **12M:** Gross Profit Margin slightly increased from full operation of IRPC-CP and ISP1







Q4/2018 Financial Performance Summary (2/2)



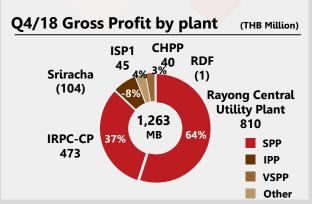


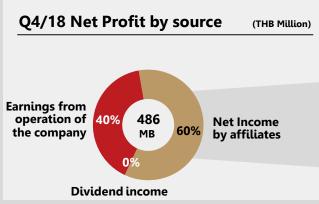
EBITDA & Net Profit:

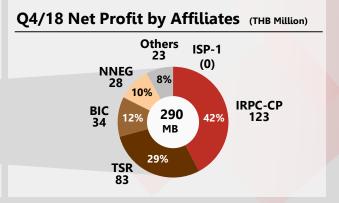
- YoY, QoQ: EBITDA & Net Profit decreased due to higher natural gas prices while Ft remained unchanged, major overhaul of Sriracha plant and planned maintenance shutdown of IRPC-CP
- 12M: EBITDA & Net Profit increased due to the rise in electricity sales from the COD of IRPC-CP Phase 2 and ISP1 since Q4/2017 and higher share of profits from BIC & NL1PC

Net Profit Margin:

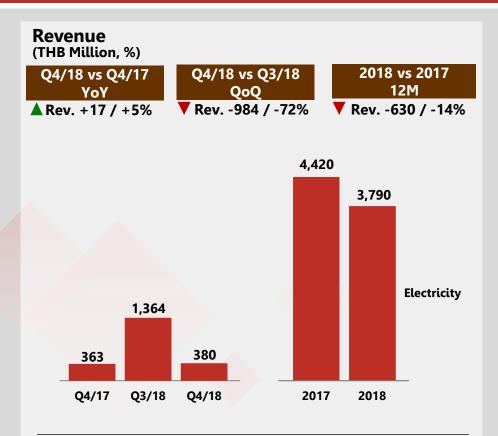
- 12M: Net profit margin decreased from the drop in dividend income from RPCL and the increase in depreciation of IRPC-CP Phase 2 and ISP1
- YoY, QoQ: Net profit margin decreased due to significant rise in natural gas prices and major overhaul of Sriracha plant



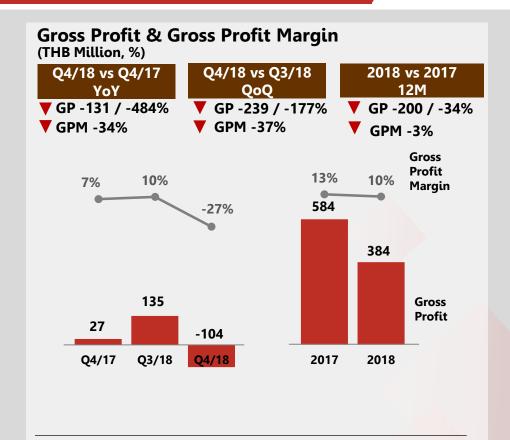




Sriracha Power Plant: Revenue & Gross Profit



- QoQ, 12M: Total revenue decreased due to major overhaul and the adjustment of finance lease receivable according to TFRIC4
- YoY: Total revenue increased from reserved shutdown in Q4/2017



- QoQ: Gross profit decreased due to the drop in revenue from Availability Payment (AP) from major overhaul and lower Weight factor in Q4/2018
- YoY, 12M: Gross profit decreased due to major overhaul and the adjustment of finance lease receivable according to TFRIC4

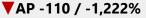


Sriracha Power Plant : Availability Payment (AP)

Revenue from AP (THB million)

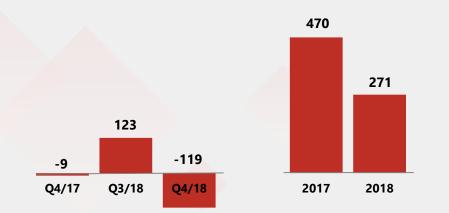


Q4/18 vs Q3/18 QoQ 2018 vs 2017 12M



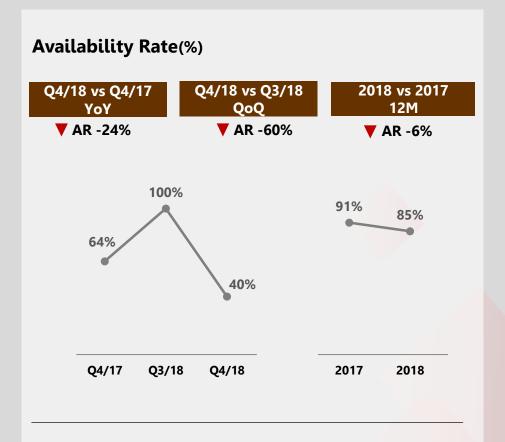
TAP -242 / -197%

TAP -199 / -42%



Revenue from AP

- QoQ: AP decreased from major overhaul and lower Weight factor
- YoY, 12M: AP decreased due to major overhaul and the adjustment of finance lease receivable according to TFRIC4



 QoQ, YoY, 12M: Availability rate decreased from major overhaul in Q4/2018

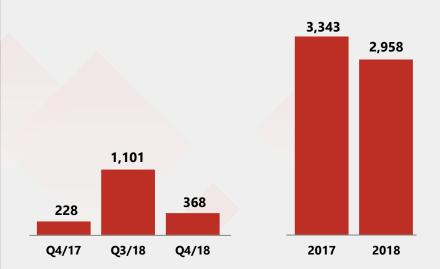
Sriracha Power Plant : Energy Payment (EP)

Revenue from EP (THB million)





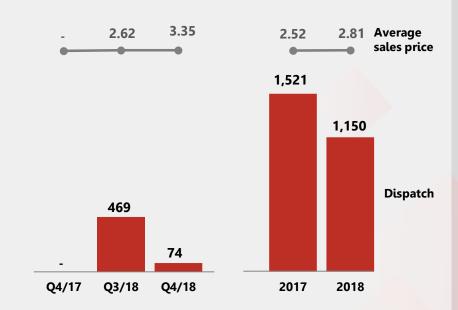




Revenue from EP

- YoY: EP increased due to maintenance shutdown and reserved shutdown in Q4/2017
- QoQ, 12M: EP decreased due to major overhaul in Q4/2018

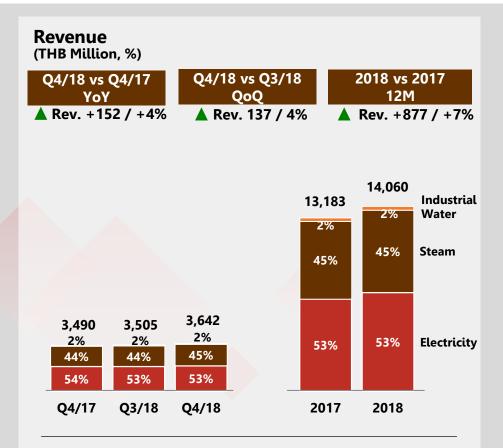
Average sales price & dispatch (Baht/kWh, GWh)



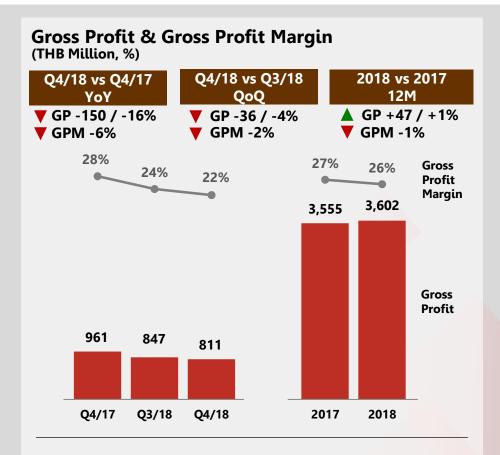
- QoQ, 12M: Average sales price increased due to the decrease in dispatched volume to EGAT as instructed
- Dispatched volume: increased YoY but decreased QoQ and 12M according to EGAT's dispatch instruction and major overhaul



Rayong Power Plant (Cogeneration): Revenue & Gross Profit



- QoQ, 12M: Total revenue increased from higher sales volume due to maintenance shutdown of gas turbines, and higher sales prices in line with higher natural gas prices
- YoY: Total revenue increased from higher sales prices in line with higher natural gas prices



- YoY, QoQ: Gross profit decreased due to the increase in natural gas prices while Ft rate remained unchanged
- 12M: Gross profit slightly increased because sales volume increased but the increase in natural gas prices was more than Ft rate, thus small increase in gross profit was observed



Rayong Power Plant (Cogeneration): Power Sales

Power sales volume (GWh) Q4/18 vs Q4/17 Q4/18 vs Q3/18 2018 vs 2017 YoY QoQ 12M ▼ Sales -10 / -2% ▲ Sales +18 / +3% ▲ Sales +60 / +2% 2.508 2.448 652 624 642 Q4/17 Q4/18 Q3/18 2017 2018

- QoQ, 12M: Power sales volume slightly increased from the expansion of industrial users and gas turbine maintenance shutdown in Q3/2018
- YoY: Power sales volume slightly decreased due to maintenance shutdown of industrial users in Q4/2018





- YoY, 12M: Average sales price increased in line with the increasing trend of Ft rate and natural gas prices
- QoQ: Average sales price was stable



Rayong Power Plant (Cogeneration): Steam Sales

Steam sales volume ('000 tons) Q4/18 vs Q4/17 YoY Q4/18 vs Q3/18 QoQ 2018 vs 2017 12M ▼ -64 / -4% ▲ +30 / +2% ▲ +128 / +2%



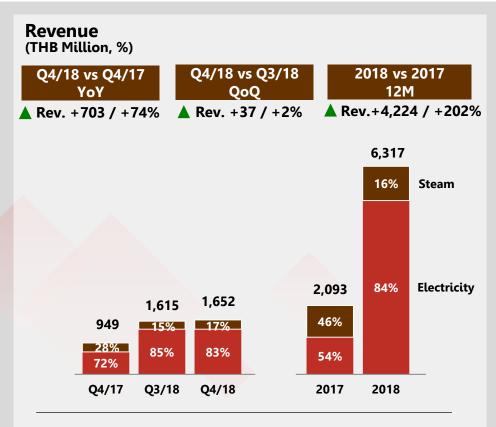
- QoQ, 12M: Steam sales volume increased due to maintenance shutdown of customers in 2017
- YoY: Steam sales volume slightly decreased in line with the variation of demand from industrial users

Average sales price & Average natural gas price (THB/ton, THB/MMBTU)

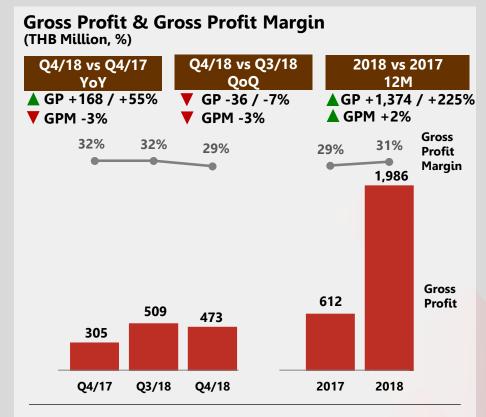


 YoY, QoQ, 12M: Average sales price increased in line with the upward trend of natural gas prices

IRPC-CP Power Plant (SPP): Revenue & Gross Profit



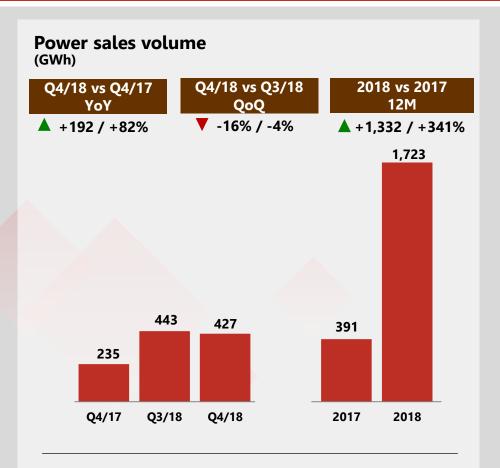
- YoY, 12M: Total revenue increased from the COD of both phases in November 2017 and higher sales price in line with the increase in natural gas prices
- QoQ: Total revenue slightly increased despite planned maintenance shutdown in Q4/2018, higher steam sales from auxiliary boiler helped increased in revenue



- YoY, 12M: Gross profit increased from higher electricity sales due to the COD of both phases since November 2017
- QoQ: Gross profit decreased from the increase in natural gas prices while Ft rate remained unchanged



IRPC-CP Power Plant (SPP): Power Sales



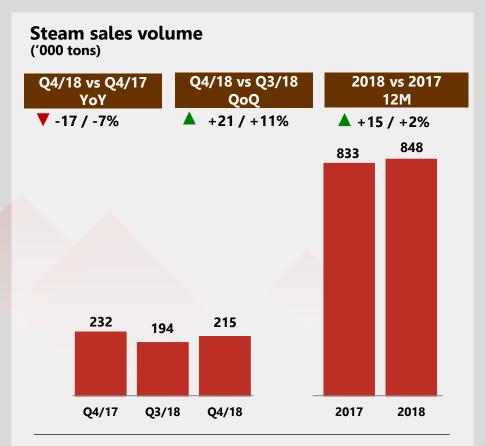
- YoY, 12M: Power sales volume increased from the COD of both phases since November 2017
- QoQ: Power sales volume slightly decreased from planned maintenance shutdown in Q4/2018



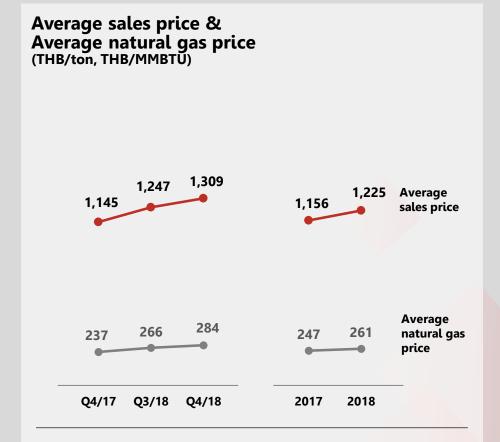
• YoY, QoQ, 12M: Average sales price increased in line with the increasing trend of natural gas prices



IRPC-CP Power Plant (SPP): Steam Sales



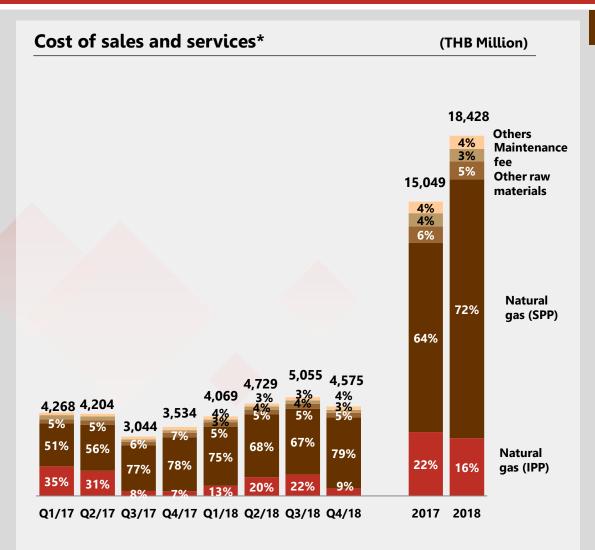
- YoY: Steam sales volume decreased from planned maintenance shutdown in Q4/18
- QoQ: Steam sales volume increased in line with the variation of demand of industrial users
- **12M: Steam sales volume increased** from the COD of both phases since November 2017



 QoQ, YoY, 12M: Average sales price increased in line with the upward trend of natural gas prices



Cost of Sales and Services





Q4/18 vs Q3/18 QoQ 2018 vs 2017 12M

+1,041 /+29%

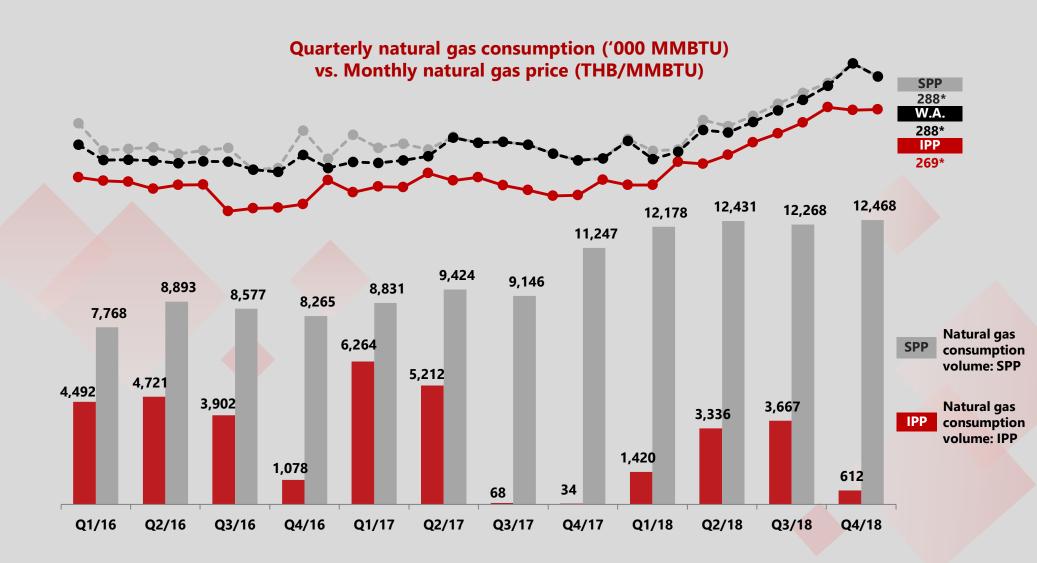
-480 / -9%

+3,379 / +22%

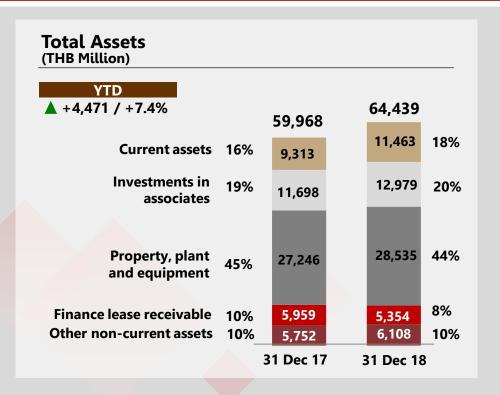
- YoY, 12M: Cost of sales and service increased due to higher SPP natural gas consumption from full operation of IRPC-CP and higher natural gas prices
- QoQ: Cost of sales and service decreased due to lower natural gas consumption from Sriracha Power Plant which had a planned maintenance shutdown almost the whole of Q4/2018.



Natural Gas Consumption vs Price Trend

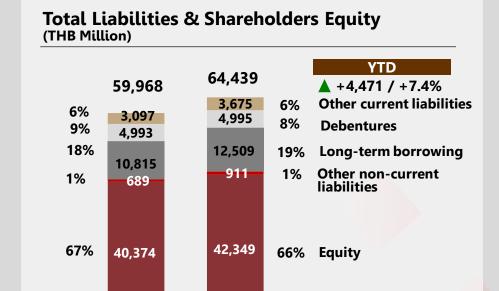


Financial position of GPSC and subsidiaries





The main increase resulted from the increase in cash & cash equivalent from operation, account receivable from power sales, investment in associates from paid-up capital request (XPCL, NNEG, NL1PC) and PPE from land & asset under construction for CUP-4.



 Total liabilities were Baht 22,090 million, increased by Baht 2,495 million or 13% from 31 December 2017 mainly due to long-term loan for IRPCCP and CUP-4.

31 Dec 18

31 Dec 17

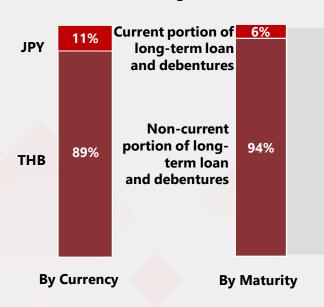
• Equity were was Baht 42,349 million, increased by Baht 1,975 million or 5% from 31 December 2017, mainly from increase in the unappropriated retained earnings.



Well-managed debt profile and continuous deleveraging

Debt Profile

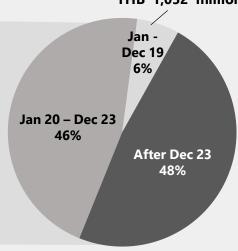
Total interest-bearing debt : THB 17,504 million



- As of 31 December 2018, total debt at was in THB and JPY currency.
- The interest-bearing debt is comprised of long-term loan and debentures which includes 6% of current portion.

Debt Repayment Plan

Current portion due within 1 year THB 1,052 million

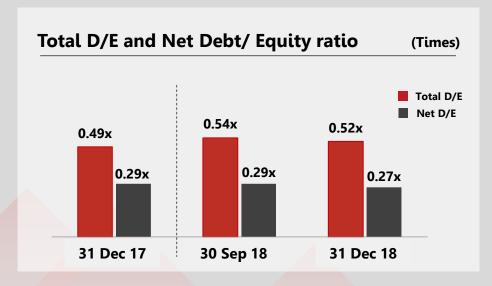


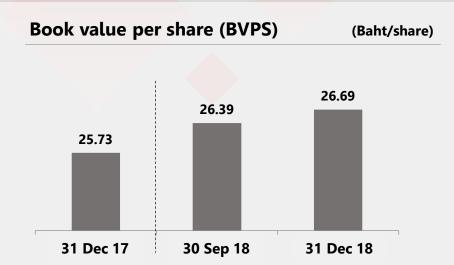
% of total interest-bearing debt

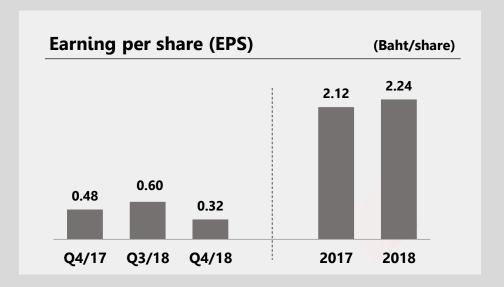
- Non-current portion of interest-bearing debt equals to THB 16,452 million while current portion equals to THB 1,052 million.
- 46% of total interest-bearing debt will be repaid between January 2020 – December 2023.



Key Financial Ratios









THANK YOU

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APPENDIX

Global Power Synergy Public Company Limited

555/2 Energy Complex, Building B Vibhavadi Rangsit Rd. Chatuchak, Bangkok 10900

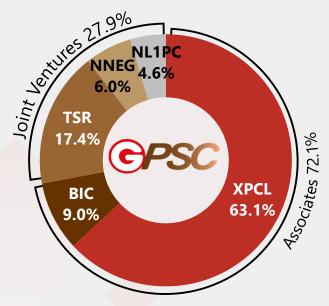
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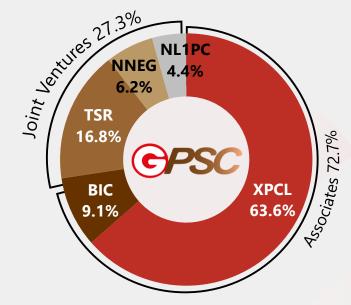


Investment in Associates and joint ventures

Proportion of GPSC's investment in associates and joint ventures at Q3/18 and Q4/18 (THB Million, %)



Q3/2018: Total of THB 9,472 million



Q4/2018: Total of THB 9,730 million

- GPSC's investment in associates and joint ventures increased from THB 9,472 million at Q3/18 to THB 9,730 million at Q4/18 or approximately THB 258 million or 2.72% increase.
- The increase in investment in Q3/18 was mainly from the investment in XPCL which increased by THB 206 million while the share of profit from associates and joint ventures in Q4/18 contributed to an increase in the investments for THB 131 million.

2019 Maintenance schedule: Sriracha and Rayong plants

			2019											
Plant	Tag no.	Description		Q1			Q2			Q3			Q4	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CUP-1	H-13701	Aux. Boiler.11			15 3Y 28									
	N-13901 H-13702 N-13902 H-13703 N-13903 H-13704 N-13904 H-13705 N-13961 H-13761 N-13962		17 HG 30 17 3Y 30	12 M 12 3Y	5	07 1Y 17 07 1Y 17			12 1Y 22 12 1Y 22			16 <mark>HG</mark> 29 16 <mark>3y</mark> 29		
CUP-2	H-13762 H-23701	HRSG16 Aux. Boiler.21	3 1Y 13						1 3Y 13					
	N-23901 H-23701 N-23902 H-23702 N-23911	GTG21 HRSG21 GTG22 HRSG22 Steam Turbine21			9 1Y 19 9 1Y 19			12 <mark>17</mark> 22 12 17 22						
CUD 2										4 1 1 1 4				
CUP-3	H-33701 H-33711 H-33712	Aux. Boiler 31 Aux. Boiler 32 Aux. Boiler 33								14	26	1 Y 06		
SRC	11MB 1-211-SG-101 12MB 1-211-SG-201 STG	GT11 HRSG#1 GT12 HRSG#2 Steam Turbine 10										1	15 CI 28 15 1Y 28 15 CI 28 15 1Y 28	

Notes Rayong Site	
HG Hot Gas Path Inspection for Gas Turbine	14 days
MI Major Inspection for Gas Turbine	22 days
STG	
Minor Minor Inspection for Steam Turbine	15 days
1MO 2 nd Major Overhaul for Steam Turbine	23 days
2MO 2 nd Major Overhaul for Steam Turbine	27 days
<u>AB</u>	
1Y One Year Inspection Aux. Boiler	11 days

Three Year Inspection Aux. Boiler

HRSG

1Y One Year Inspection HRSG

3Y Three Year Inspection HRSG

0ther

17 One Year Inspection NG Station Test

5Y Five Year Inspection NG Station (NDT)

18 Online

19 Online

FO Forced Outage

13 days

NG Station Test Online NG Station (NDT) Online Depending on physical damage

Notes Sriracha Site

CI Combustion Inspection for Gas Turbine 8 days
HGPI Hot Gas Path Inspection for Gas Turbine 26 days
MO Major Overhaul for Gas Turbine 33 days
RCIE Rotor and Casting Inspection Evaluation 49 days

HRS

1Y One Year Inspection HRSG 3Y Three Year Inspection HRSG Other

1Y One Year Inspection NG Station Test 5Y Five Year Inspection NG Station (NDT)

FO Forced Outage

8 days 33 days

Online
Depending on physical damage



2018-2019 Maintenance schedule: IRPC-CP

	Unit		20	18		2019				
Plant		Q1 (A)	Q2 (A)	Q3 (A)	Q4 (A)	Q1 (F)	Q2 (F)	Q3 (F)	Q4 (F)	
IRPC-CP	Block 1									
	CTG 21	E			Α	1	1	1	1	
	HRSG 21	E			A	1	1	1	1	
	CTG 22	E			A	1	1	1	1	
	HRSG 22	E			A	1	1	1	1	
	STG 23									
	Block 2									
	CTG 31	E			Α	1	1	1	1	
	HRSG 31	E			Α	1	1	1	1	
	CTG 32	В				1	1	6	1	
	HRSG 32	В				1	1	6	1	
	STG 33							3		
	Aux. Boiler		ΥI				7			

Notes

YI Yearly Inspection 5 days
YI Yearly Inspection Aux Boiler 15 days
A CTG Inspection Level A 5 days
B CTG Inspection Level B 20 days
C CTG Inspection Level C 24 days
E EPC Inspection End of Warranty 3 days

* For 2019: numbers on the table are number of maintenance days

