




บริษัท โกลบอล เพาเวอร์ ซินเนอร์ยี จำกัด (มหาชน)
Global Power Synergy Public Company Limited

Q1 2017 Results Presentation Opportunity Day

23rd May 2017

	Company Overview
	Financial Performance
	Project Update

rowing *P*rofit with *S*ustainability and *C*ontrol

Explore new opportunity through 3 growth engines

Within 2019, GPSC will have 1,922 MW in power portfolio with CAGR at 11.6% by leveraging competitiveness and 3 growth engines:

- (1) **Grow with PTT & Domestic,**
- (2) **International business expansion, and**
- (3) **Future Energy development.**



Energy Storage System gearing up toward sustainability

As market moves toward energy storage technology, **GPSC reached cooperation deal with 24M in using the technology to produce and distribute Lithium-Ion batteries in ASEAN.** With innovative technology, there will be varieties of electricity generating platforms supporting to GPSC's sustainable growth.



1Q17 Net profit delivered as planned

GPSC's **net profit in Q1/17 increased by THB 331 million** from Q4/16 thanks to continuously efficient cost management of Rayong Plants. For Sriracha Power Plant, revenue from availability payment increased. However, net profit decreased YoY by Baht 121 million or 14% because dividend incomes from RPCL decreased by Baht 60 million and operating profit of IRPC-CP Phase 1 decreased due to a turnaround of main customer.



6 projects in progress meet milestones as planned

Three power plants are expected to COD by 2017 while **another three power plants are expected to COD within 2019.** All the projects are closely monitored by GPSC with construction specialists to meet the milestones as planned.





GPSC stock's performance

THB / Share

GPSC's Stock Price (May 15 – May 17)

Ranked "Excellent" for CGR Scoring
(26 Oct 2016)



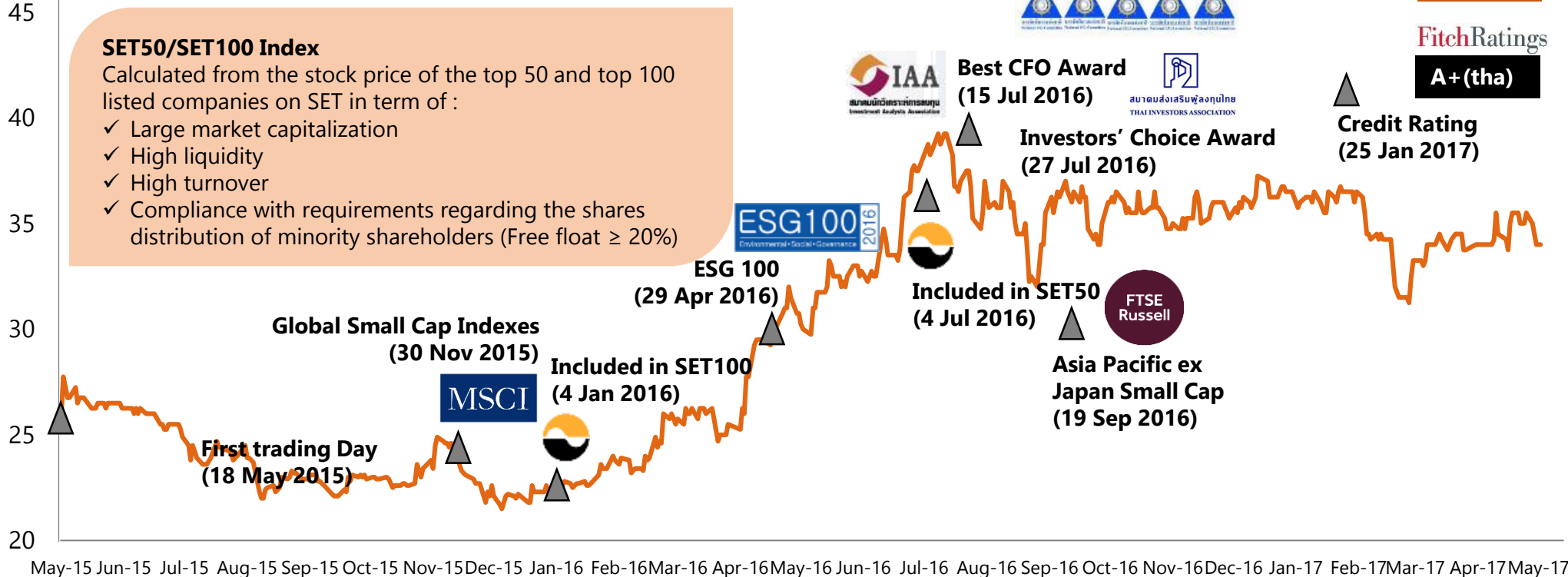
STANDARD
& POOR'S

BBB-

Fitch Ratings

A+(tha)

Credit Rating
(25 Jan 2017)



- IPO in May 2015, GPSC has been growing business with continuously increase market capitalization.
- Starting from November 2015 where GPSC has been included in the Global standard, namely **MSCI Index** and in September 2016, GPSC was included in **FTSE Index**.
- GPSC was classified to be in **SET100** in January 2016 and then in July 2016, progressed to be included in **SET50**.
- In April 2016, GPSC has been shortlisted in **ESG 100** with sustainable business awarded by Thaipat Institute. In 2H/2016, GPSC's CFO received **Best CFO Award** from Investment Analysts Association. The company also received **Investors' Choice Award** from Thai Investors Association, **ranked "Excellent" for CGR Scoring** by Thai Institute of Directors and GPSC received **Most Progress in IR Award** from IR Magazine.
- Recently in December 2016, GPSC has been initially ranked **BBB- rating by S&P's** and **A+(tha) by Fitch Ratings** with **Investment Grade and Stable Outlook**. These are the results of confidence on GPSC performance from all stakeholders.



GPSC's facilities produce electricity of 1,922 Equity MW

(2,318 Equity MW equivalent ; electricity 1,922 Equity MW , steam 1,582 T/H)

BUSINESS PORTFOLIO



Combined Cycle / Cogeneration

- Electricity 1,517 MW
- Steam 1,582 T/H
- Industrial Water 2,080 Cu.m./H
- Chilled Water 12,000 RT



Renewable Energy

- Electricity 58 MW



Hydroelectric

- Electricity 347 MW



Other Businesses

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

Capacity

ELECTRICITY

1,922 MW (operate 1,381 MW,
under constriction 541 MW)

STEAM

1,582 T/H
(operate 1,441 T/H)

INDUSTRIAL WATER

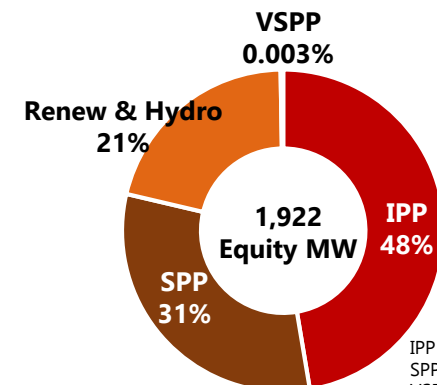
2,080 Cu.m./H

CHILLED WATER

12,000 RT

ELECTRICITY CAPACITY BREAKDOWN

Unit: Megawatt



IPP Independent Power Producers
SPP Small Power Producers
VSPP Very Small Power Producers

Combined Cycle / Cogeneration

Sriracha Power Plant (IPP) 100%

- Electricity: 700 MW
- Industrial water: 80 Cu.m./h



Rayong Power Plant (SPP Non-firm) 100%

CUP 1-3

- Electricity: 339 MW
- Steam: 1,340 T/H
- Industrial water: 2,000 Cu.m./h



Rayong Expansion

- Electricity: 45 MW
- Steam: 70 T/h

IRPC Clean Power (SPP Firm) 51%

Total

- Electricity: 240 MW
- Steam: 300 T/h



Phase 1 COD

- Electricity: 45 MW
- Steam: 170 T/h

Phase 2 under construction (SCOD in 2017)

Combined Heat and Power Producing (VSPP) 100%

- Electricity: 5 MW
- Chilled water: 12,000 RT



Nava Nakorn Electricity Generation (SPP Firm) 30%

- Electricity : 125 MW
- Steam: 30 T/h



Bangpa-in Cogeneration (SPP Firm) 25%

Phase 1

- Electricity: 117 MW
- Steam: 20 T/h



Phase 2 (SCOD in June 2017)

- Electricity: 117 MW
- Steam: 20 T/h

Ratchaburi Power (IPP) 15%

- Electricity: 1,400 MW



Renewable Energy

Thai Solar Renewable (VSPP) 40%

- Electricity: 80 MW



Ichinoseki Solar Power 99%

(SCOD in Q4/2017)

- Electricity: 20.8 MW



CHPP Solar Cooperatives (VSPP) 100%

- Electricity: 5 MW



Hydroelectric

Xayaburi Power (IPP) 25%

(SCOD in October 2019)

- Electricity: 1,285 MW



Nam Lik 1 Power 40%

(SCOD in 2019)

- Electricity: 65 MW



Other Businesses

Business Service Alliance

25%



24M Technologies

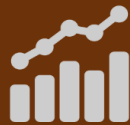
18%



- Project under construction
- Upcoming COD by 2017



Company Overview



Financial Performance

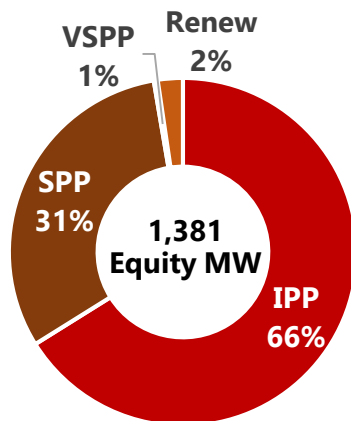


Investment in Affiliates

Majority of GPSC's revenue is from electricity, PTT Group is GPSC's major customer

ELECTRICITY CAPACITY BREAKDOWN

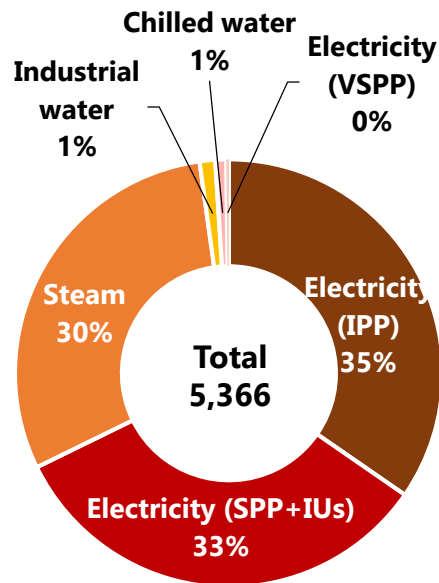
(Unit: Equity Megawatt)



Name	Type	GPSC's share %	Total capacity (MW)	Equity capacity (MW)	Steam (T/H)
IN OPERATION					
Sriracha	IPP	100%	700	700	
CUP-1	SPP	100%	226	226	890
CUP-2	SPP	100%	113	113	170
CUP-3	SPP	100%	-		280
CHPP	VSPP	100%	5	5	
IRPC-CP Phase 1	SPP	51%	45	23	86.7
CHPP (Solar)	VSPP	100%	5	5	
Consolidate to Financial Statement				1,072	1,427
TSR	Renew	40%	80	32	
NNEG	SPP	30%	125	38	9
BIC-1	SPP	25%	117	29.25	5
RPCL	IPP	15%	1,400	210	
Share of Profit / Dividend Income				309	14
Total operating				1,381	1,441

Q1/2017 Revenue by product

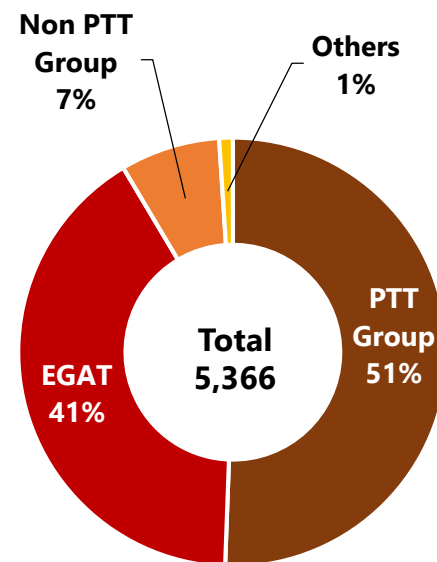
(THB million)



- Electricity and Steam are major sources of GPSC's revenue, accounted for 98% of total revenue.

Q1/2017 Revenue by customer

(THB million)

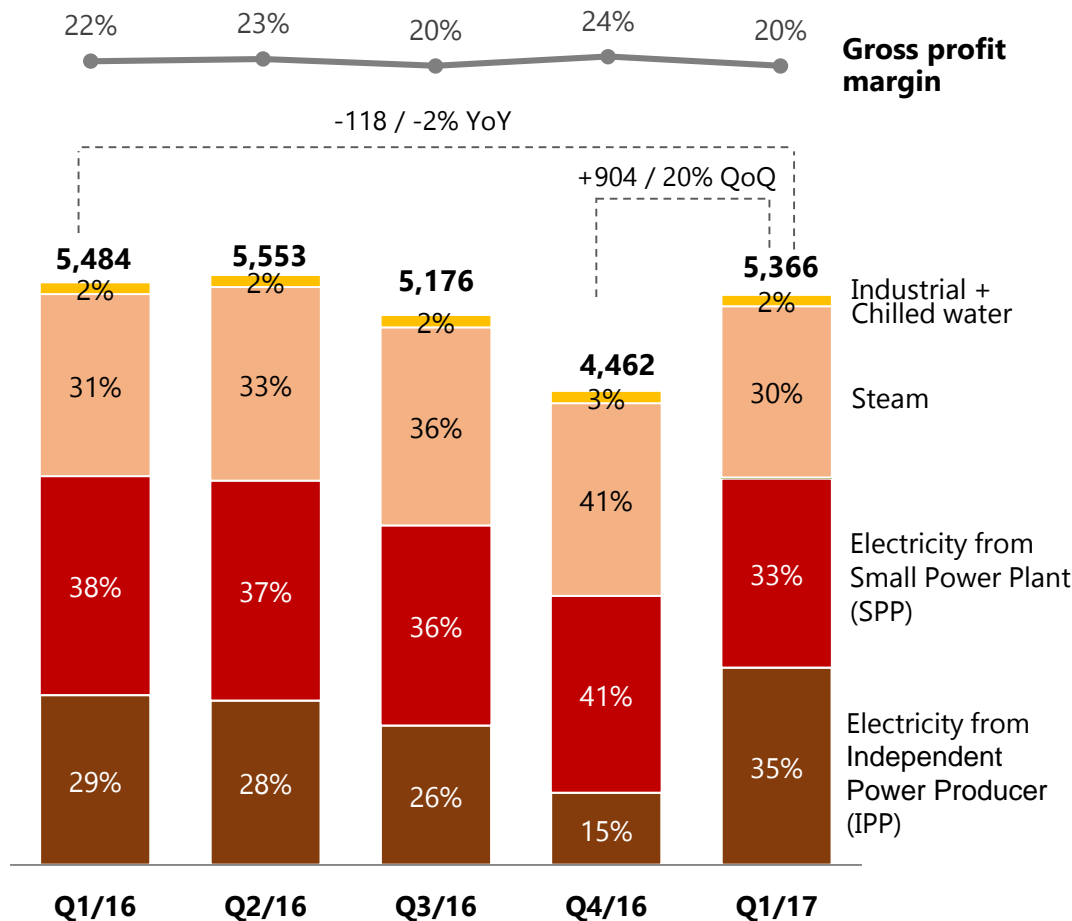


- Accounted for more than 50% of total revenue, PTT Group is consistently the largest customer of GPSC in Q1/17.

Revenue increased THB 904 million or 20% QoQ mainly from SRC

Quarterly revenue and Gross profit margin*

(THB Million, %)



Q1/17 VS Q4/16 (QoQ)

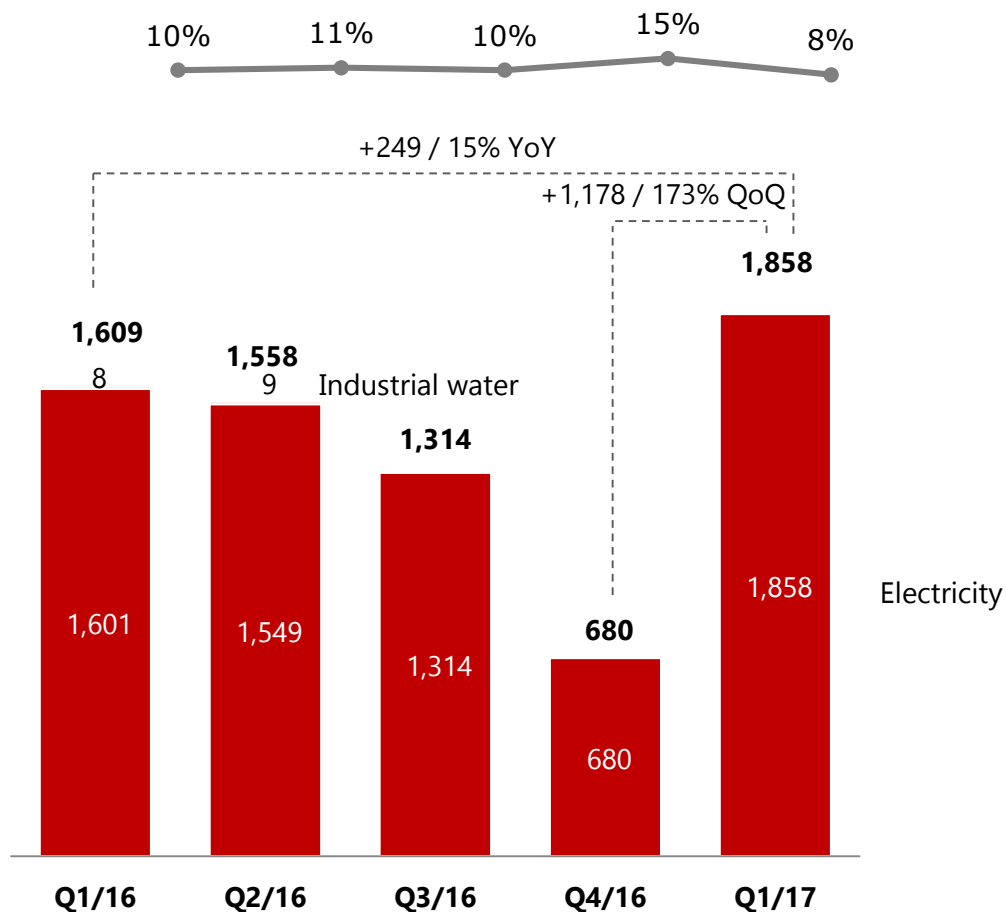
Operating revenue in Q1/17 increased by THB 904 million or 20% compare to Q4/16. The increase was due to the higher revenue from Energy Payment (EP) resulted from the **higher dispatch volume of Sriracha plant**, which is an IPP, per EGAT's instruction.

Q1/17 VS Q1/16 (YoY)

Operating revenue in Q1/17 decreased by THB 118 million or 2% due to **lower sales volume of IRPC-CP Phase 1**. CUP and IRPC-CP, which are SPPs, had **maintenance shutdowns of some customers** in Q1/17 causing the drop in revenue.

Quarterly revenue & gross profit margin

(THB Million, %)



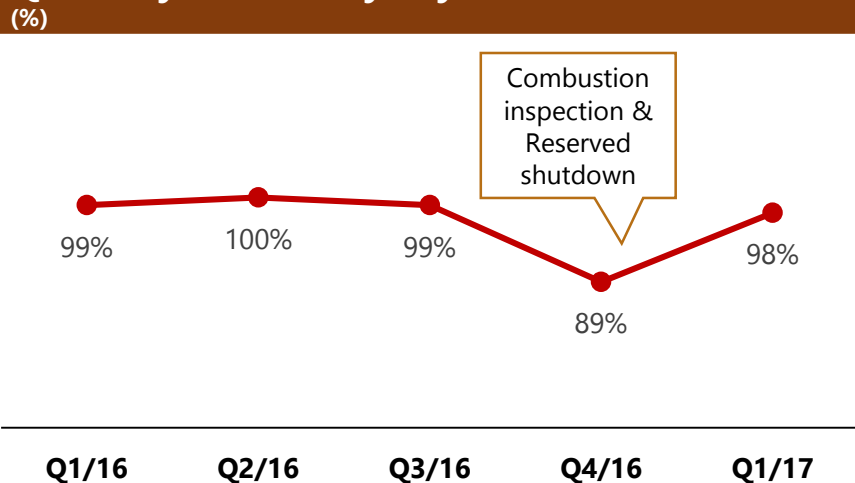
Q1/17 VS Q4/16 (QoQ)

- Total revenue in Q1/17 increased by THB 1,178 million or 173% mainly from **an increase in the dispatch volume**.
- While the GPM decreased because of **the increase in EP** which is the revenue that mainly passes through cost in energy production than generating profit.

Q1/17 VS Q1/16 (YoY)

- Total revenue in Q1/17 increased by THB 249 million or 15% mainly **due to the higher sales volume of electricity submitted to EGAT**.
- But GPM decreased from the increase in revenue from EP as well.

Quarterly Availability Payment Rate (%)



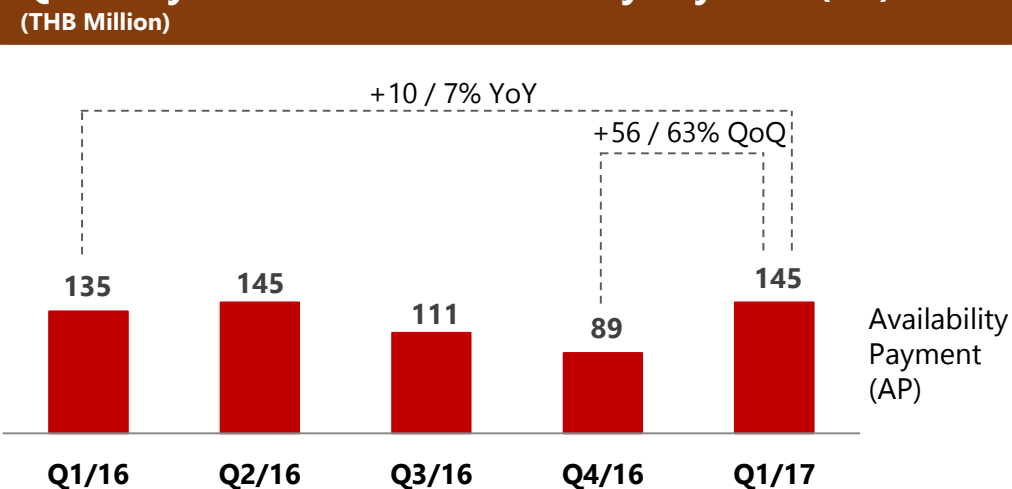
Q1/17 VS Q4/16 (QoQ)

- Availability rate in Q1/17 increased from 89% to 98% **due to the annual maintenance in Q4/16.**
- Revenue from Availability Payment (AP) in Q1/17 also increased by THB 56 million or 63% **from the improve in Availability Rate** caused by the fact that there was no power plant maintenance in Q1/17 as in Q4/16.

Q1/17 VS Q1/16 (YoY)

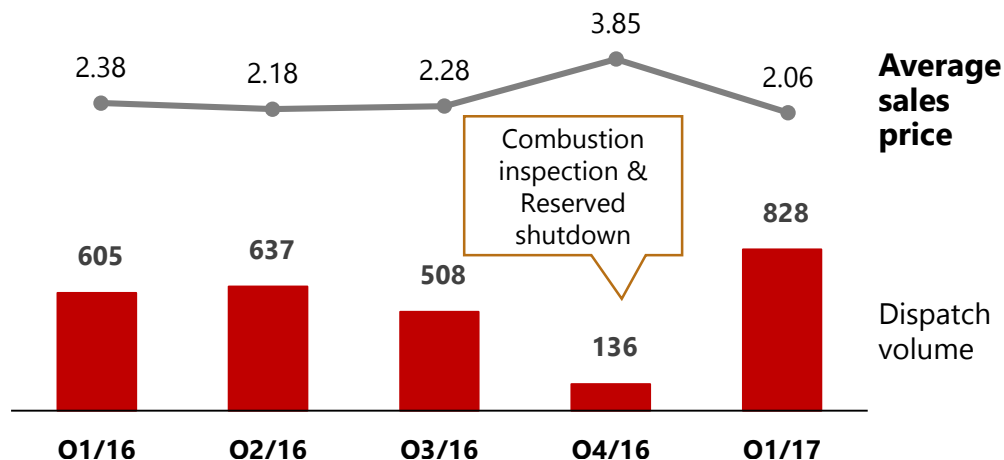
- Revenue from Availability Payment in Q1/17 increased by THB 10 million or 7% **from TFRIC#4 adjustment.**

Quarterly revenue from Availability Payment (AP) (THB Million)



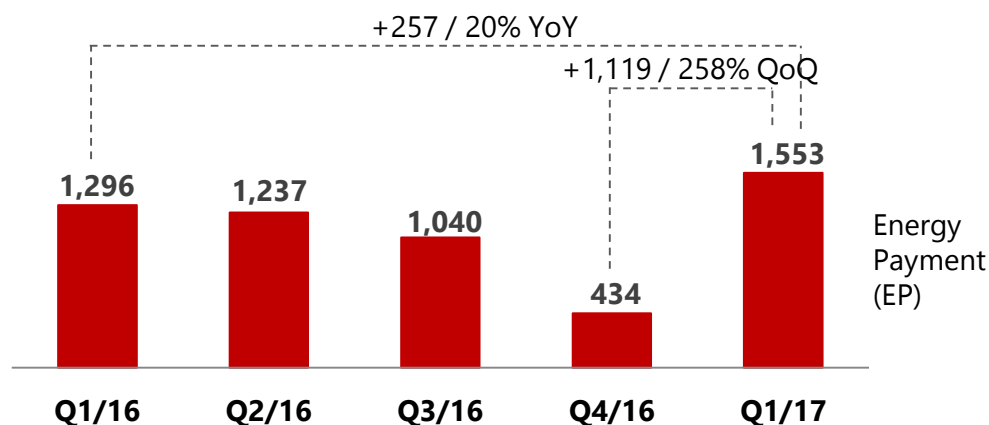
Quarterly average sales price & dispatch

(Baht/kWh, GWh)



Quarterly revenue from Energy Payment (EP)

(THB Million)



Q1/17 VS Q4/16 (QoQ)

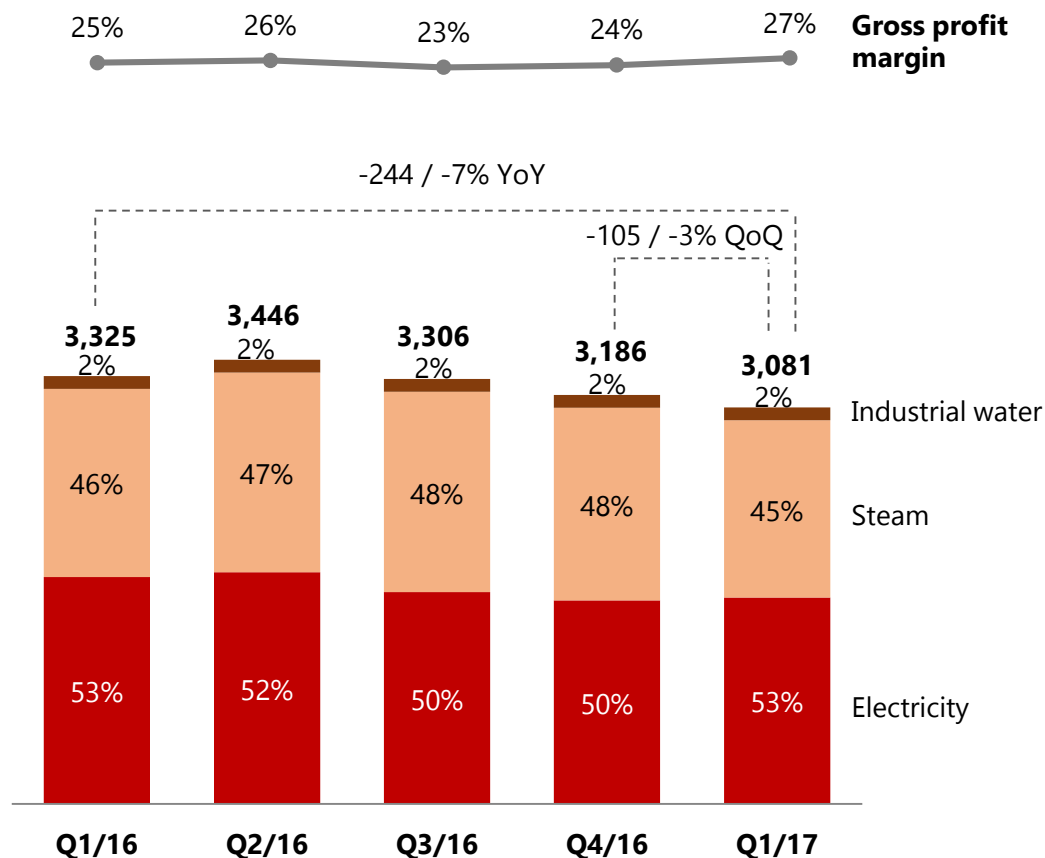
- Average sales price in Q1/17 decreased by 1.79 Baht per kWh **due to the lower natural gas price.**
- Revenue from Energy Payment (EP) increased by THB 1,119 million or 258% as **a result of higher dispatch volume per EGAT's instruction** partly caused by the maintenance of Myanmar gas field in Q1/17.

Q1/17 VS Q1/16 (YoY)

- Average sales price decreased by 0.32 Baht per kWh **due to the lower natural gas price.**
- Revenue from EP increased by THB 257 million **due to the increase in dispatch volume.**

Quarterly revenue & gross profit margin

(THB Million, %)



Q1/17 VS Q4/16 (QoQ)

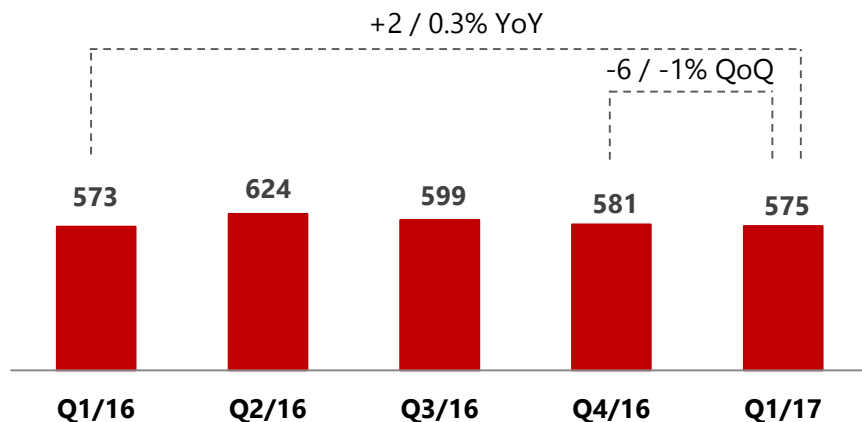
- Total revenue was lower by THB 105 million or 3% due to **the volumes of electricity and steam sold decreased** by 1% and 11%, respectively. This is because many **customers had maintenance shutdowns in Q1/17**.
- Gross profit margin increased by 3%. This was mainly from **the drop in cost of maintenance** as there was no maintenance for the machines at CUP-1 and 2 plants in this quarter.

Q1/17 VS Q1/16 (YoY)

- Total revenue decreased by THB 244 million or 7%, mainly from **the average selling price of electricity and steam decreased** by 10% and 4%, respectively from decrease in gas price.
- Gross profit margin improved by 2% as the **natural gas price was much lower** than in Q1/16 for approximately 10%.

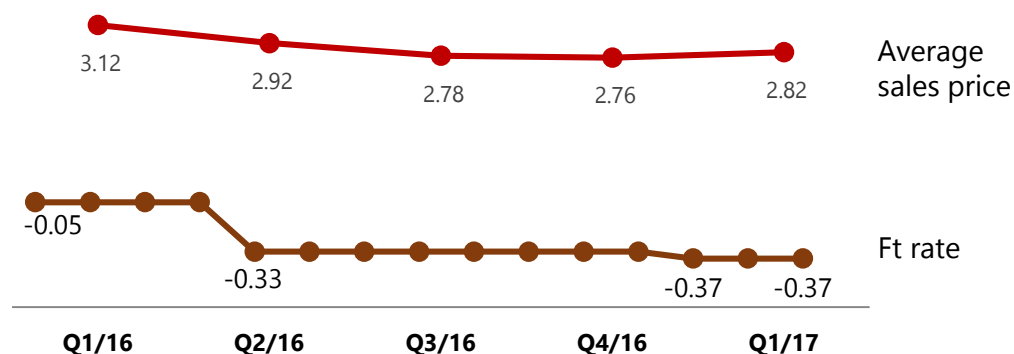
Quarterly power sales volume

(GWh)



Quarterly average sales price & Ft rate

(THB/kWh, THB)



Q1/17 VS Q4/16 (QoQ)

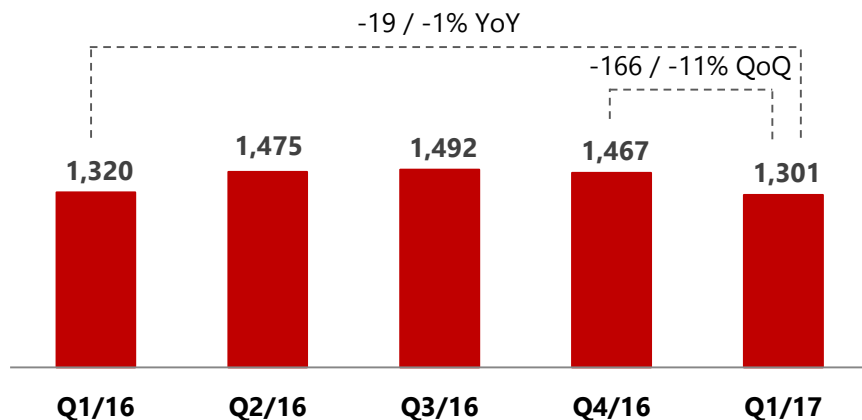
- Volume decreased by 6 GWh from **customer's unplanned shutdown**.
- Price increased by 0.06 Baht per kWh or 2% due to **the increase in natural gas price**.

Q1/17 VS Q1/16 (YoY)

- Volume slightly increased by 2 GWh from the **higher demands from customers** during Q1/17 compare to Q1/16.
- Price decreased by 0.30 Baht per kWh or 10% due to **the decrease in Ft rate**.

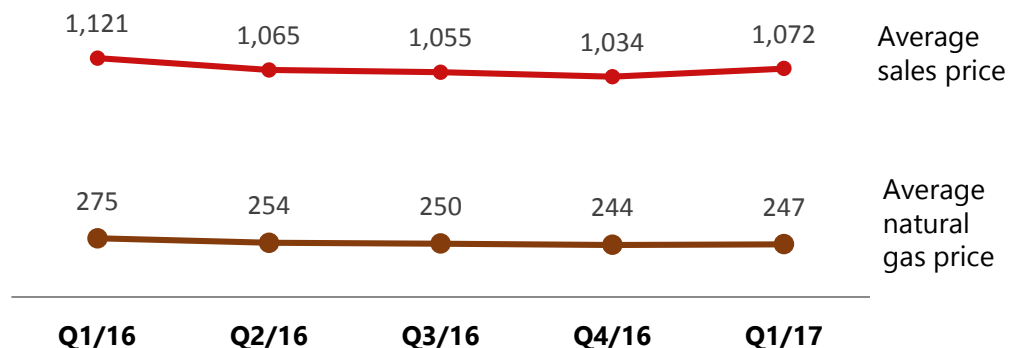
Quarterly steam sales volume

('000 tons)



Quarterly average sales price & natural gas price

(THB/ton, THB/MMBTU)



Q1/17 VS Q4/16 (QoQ)

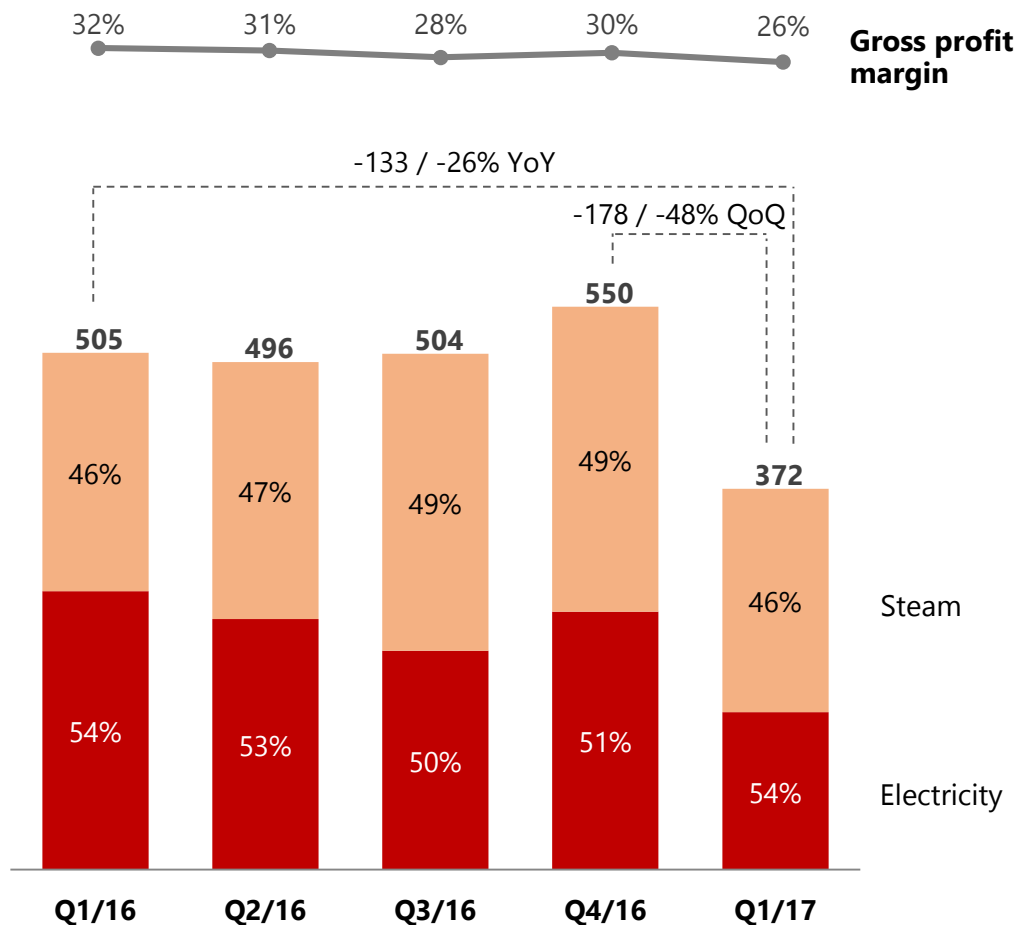
- Volume decreased by 166 thousand tons or 11% in Q1/17 because some **customers had maintenance shutdown in Q1/17.**
- Price increased by 38 Baht per ton or 4% in Q1/17 **due to the increase in natural gas price.**

Q1/17 VS Q1/16 (YoY)

- Volume decreased by 19 thousand tons or 1% **due to customer shutdown in Q1/17.**
- Price decreased by 49 Baht per ton or 4% **due to the decrease in natural gas price.**

Quarterly revenue & gross profit margin

(THB Million, %)



Q1/17 VS Q4/16 (QoQ)

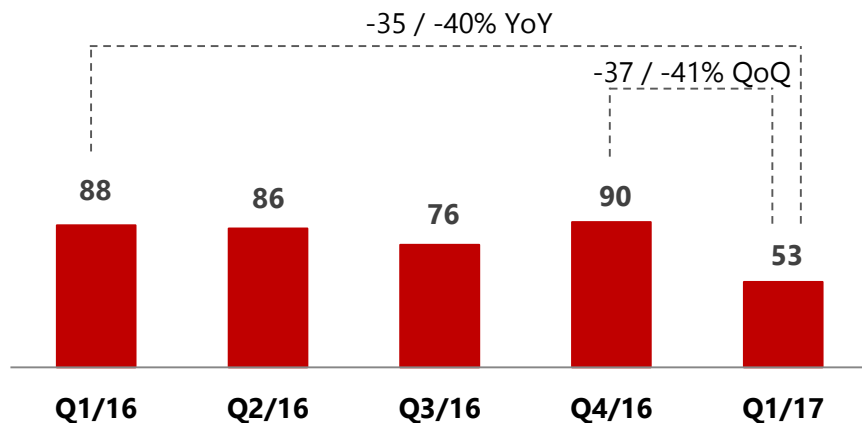
- Total revenue in Q1/17 decreased by THB 178 million or 48% due to **the maintenance shutdown from the main customer for a month.**
- GPM decreased by 4% due to **the increase in cost per unit was higher than the increase in selling price per unit.**

Q1/17 VS Q1/16 (YoY)

- Total revenue in Q1/17 decreased by THB 133 million or 26% because the one of the **main customer had a maintenance shutdown** for 1 month.
- Also, the GPM decreased from **lower electricity and steam selling prices.**

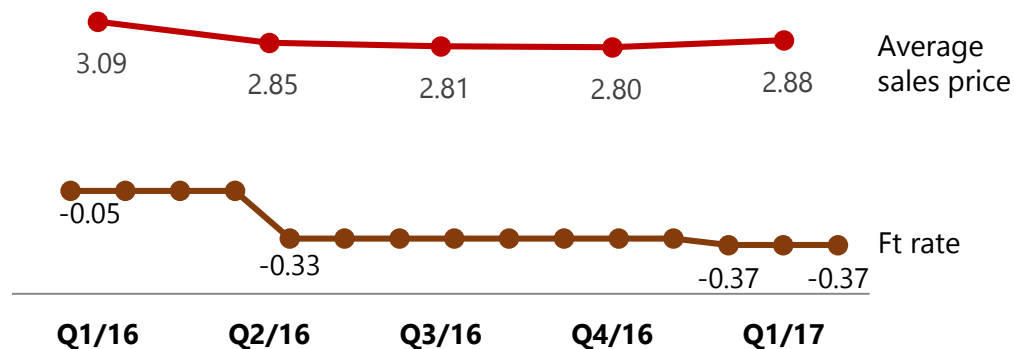
Quarterly power sales volume

(GWh)



Quarterly average sales price & Ft rate

(THB/kWh, THB)



Q1/17 VS Q4/16 (QoQ)

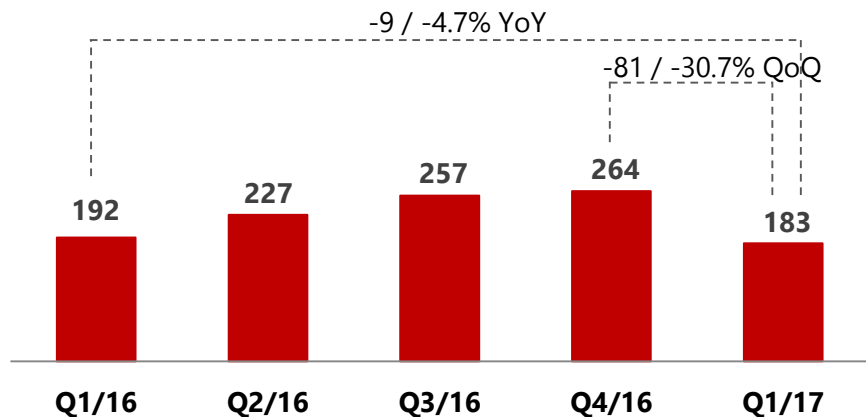
- Volume decreased by 37 GWh or 41% due to a **maintenance shutdown of one main customer**.
- Price increased by 0.08 Baht per kWh or 2.9% due to the **increase in k-factor and natural gas price**.

Q1/17 VS Q1/16 (YoY)

- Volume decreased by 35 GWh or 40% due to the **main customer temporarily ceased the operation**.
- Price decreased by 0.21 Baht per kWh or 6.8% **due to the decrease in Ft rate and natural gas price**.

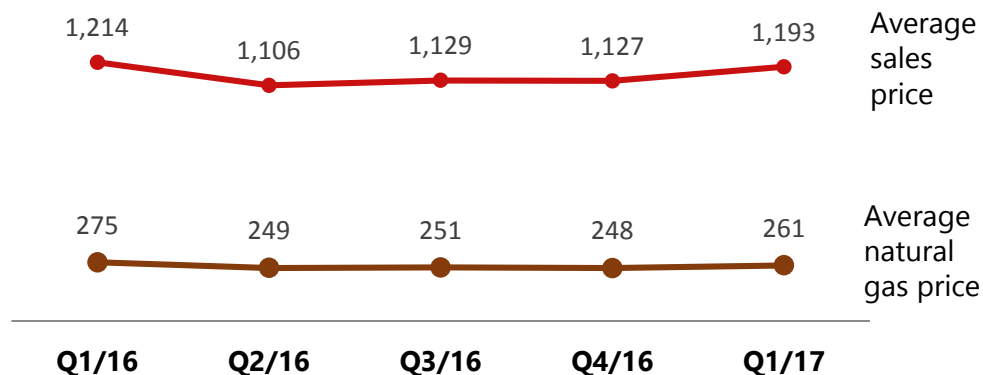
Quarterly steam sales volume

('000 tons)



Quarterly average sales price & natural gas price

(THB/ton, THB/MMBTU)



Q1/17 VS Q4/16 (QoQ)

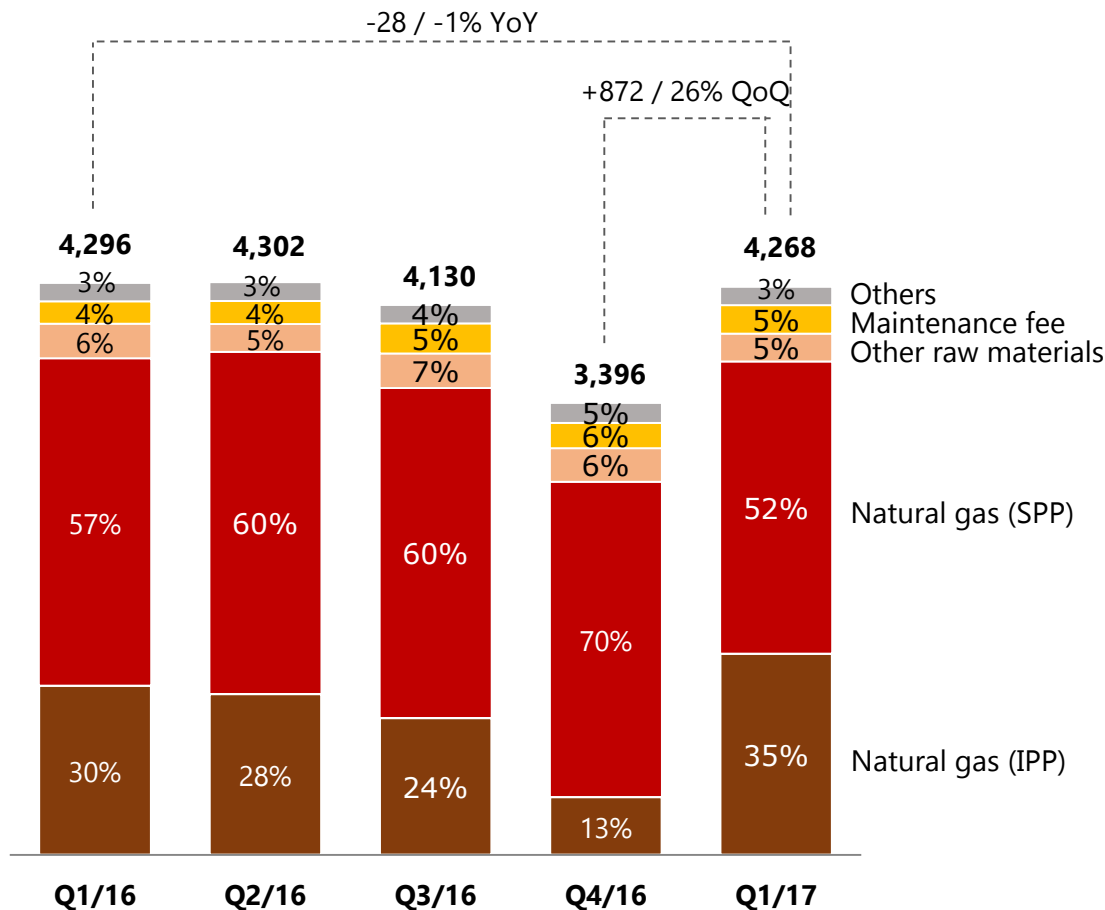
- Volume decreased by 81 thousand tons or 30.7% in Q1/17 **due to customer's maintenance shutdown.**
- Price increased by 66 Baht per ton or 5.9% in Q1/17 **due to the increase in natural gas price.**

Q1/17 VS Q1/16 (YoY)

- Volume decreased by 9 thousand tons or 4.7% **due to a main customer had a maintenance shutdown.**
- Price decreased by 21 Baht per ton or 1.7% **due to the decrease in natural gas price.**

Quarterly cost of sales and services*

(THB Million, %)



Q1/17 VS Q4/16 (QoQ)

- Cost of sales and services in Q1/17 increased by THB 872 million or 26% due to the **higher cost of raw materials, mainly natural gas (IPP)**, in relation to **higher dispatch volume of Sriracha plant**.

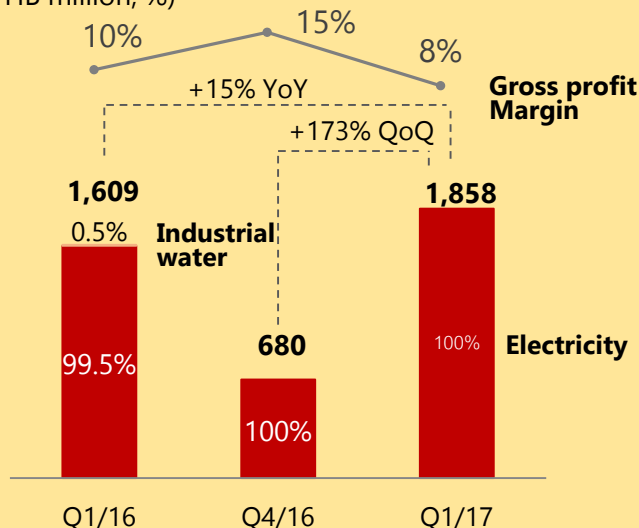
Q1/17 VS Q1/16 (YoY)

- Cost of sales and services decreased by THB 28 million or 1% due to **lower cost of natural gas resulted from the decrease in sales volume of IRPC-CP** from a main customer's maintenance shutdown.
- Also, the cost decreased from **the price of natural gas which drop YoY** following the trend of an oil price.

Sriracha Plant (IPP)

Total revenue & GPM

(THB million, %)



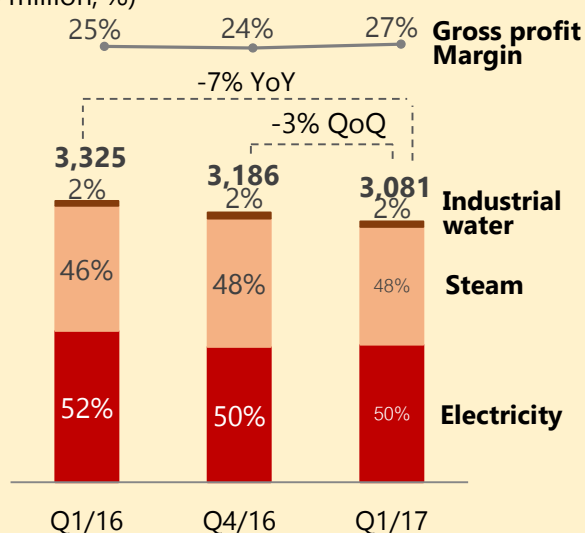
QoQ: Total revenue was higher by THB 1,178 million mainly from an increase in the dispatch volume while the GPM decreased because of the increase in EP which is the revenue that mainly passes through cost in energy production than generating profit.

YoY: Total revenue increased by THB 249 million, mainly due to the higher sales volume of electricity submitted to EGAT but GPM decreased from the increase in revenue from EP as well.

Rayong Plant (SPP)

Total revenue & GPM

(THB million, %)



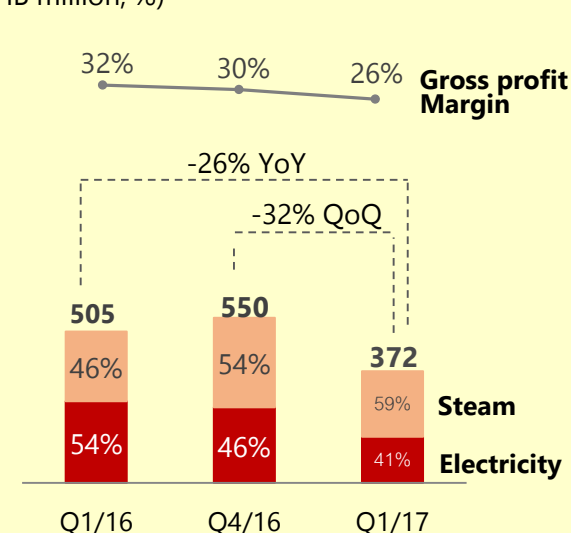
QoQ: Total revenue was lower by THB 105 million due to the volumes of electricity and steam decreased by 1% and 11%, respectively. This is because many customers had maintenance shutdowns in Q1/17.

YoY: Total revenue decreased by THB 244 million, mainly from the average selling price of electricity and steam decreased by 10% and 4%, respectively from decrease in gas price.

IRPC-CP Phase 1 Plant (SPP)

Total revenue & GPM

(THB million, %)

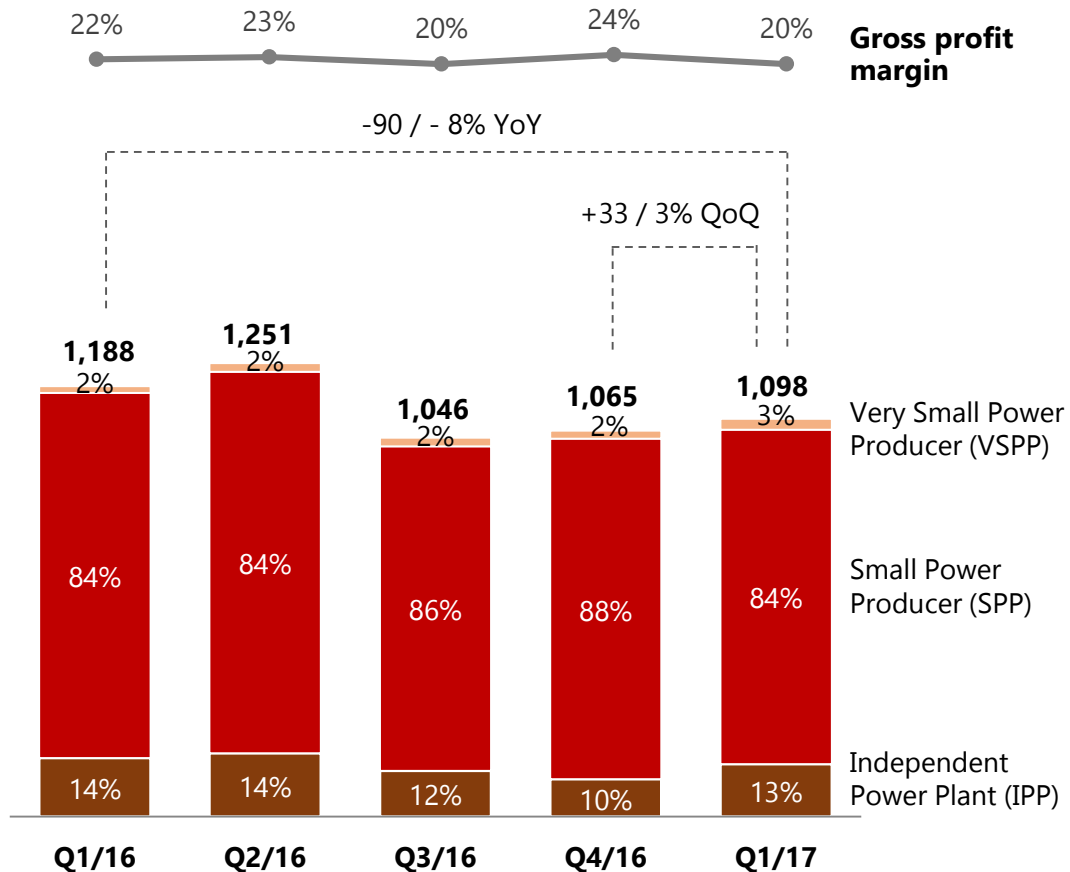


QoQ: Total revenue was lower by THB 178 million mainly from the maintenance shutdown from the main customer for a month.

YoY: The revenue of IRPC-CP Phase 1 in Q1/17 decreased from Q1/16 mainly because the one of the main customer had a maintenance shutdown for 1 month. Also, the GPM decreased from lower electricity and steam selling prices.

Quarterly gross profit and gross profit margin*

(THB Million, %)



Q1/17 VS Q4/16 (QoQ)

- Gross profit in Q1/17 increased by THB 33 million or 3% due to the **increase in availability rate of Sriracha**.
- Also, the **lower maintenance cost of CUP** brought about the increase in quarterly gross profit.
- However, **GPM slightly declined** from the **increase in the Energy Payment revenue**, which is the revenue that passes through the cost to EGAT, of Sriracha plant.

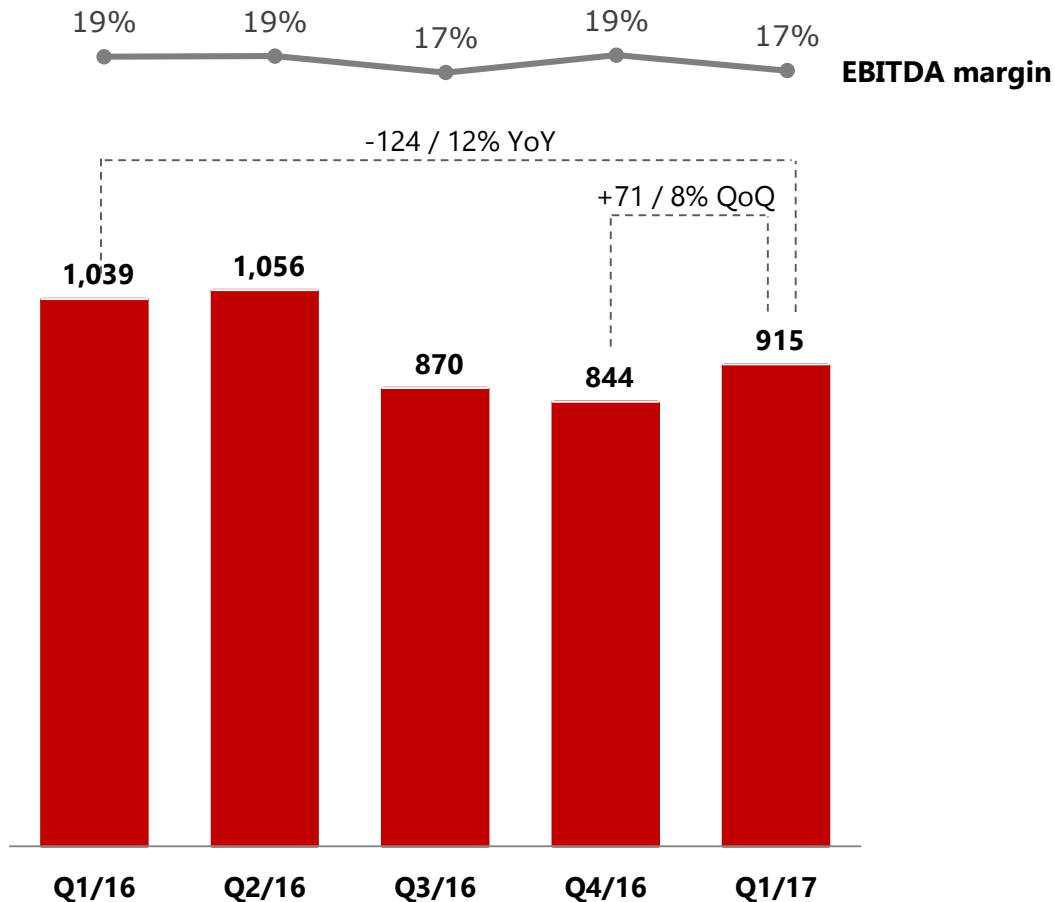
Q1/17 VS Q1/16 (YoY)

- Compare with Q1/16, gross profit decreased by THB 90 million or 8%. The decrease was mainly from **the drop in the profit of IRPC-CP because a major customer had maintenance shutdown** in Q1/17.

EBITDA increased 8% QoQ from efficient cost management

Quarterly EBITDA and EBITDA margin

(THB Million, %)



Q1/17 VS Q4/16 (QoQ)

- EBITDA in Q1/17 increased by THB 71 million or 8% to THB 915 million due to **better performance of the company's power plants**.
- Moreover, the increase in EBITDA caused by the **decrease in the selling and administrative expenses** relating to the business development costs.

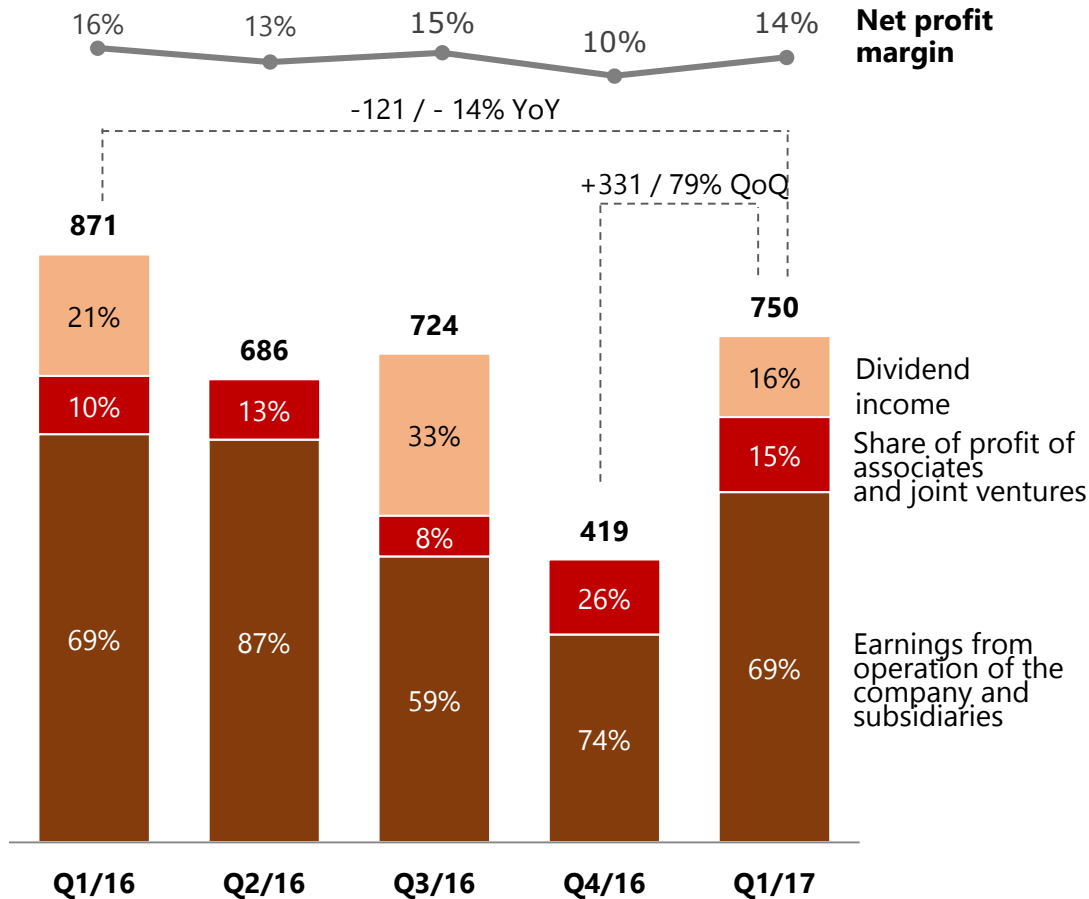
Q1/17 VS Q1/16 (YoY)

- EBITDA decreased by THB 124 million or 12% due to the **decrease in operating profit from maintenance shutdown of IRPC's main customer during Q1/17**.
- Also, the **increase in business development costs** resulted in the drop in the EBITDA in Q1/17.

Net profit grew 79% QoQ from strong operating earnings and supported by returns from investments

Quarterly net profit and net profit margin

(THB Million, %)



Q1/17 VS Q4/16 (QoQ)

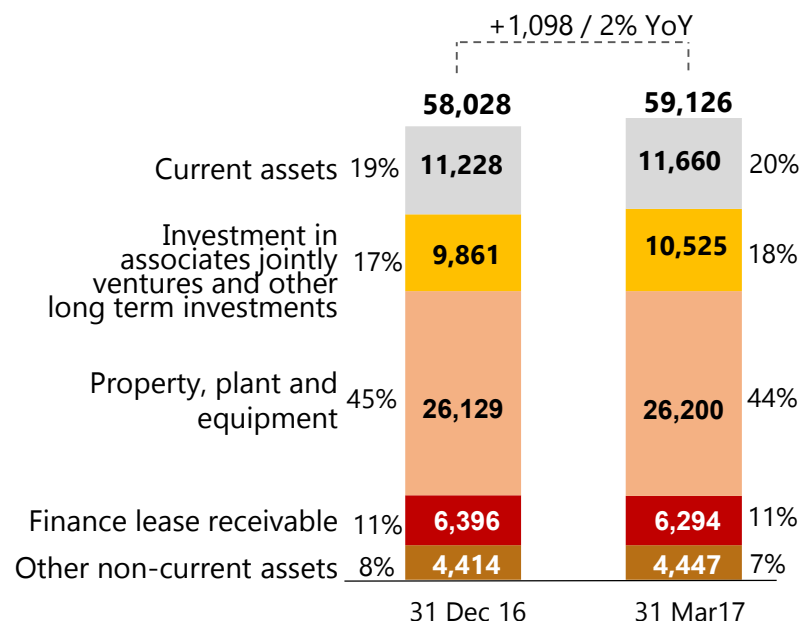
- The net profit increased by THB 331 million or 79% from **the continuously efficient cost management** and **the decrease in maintenance cost of Rayong CUP**.
- Furthermore, **the increase in the availability rate at Sriracha plant** contributed to higher profit.
- Also, GPSC **received dividend income from RPCL for THB 120 million**.

Q1/17 VS Q1/16 (YoY)

- Net profit decreased by THB 121 million or 14% due to the **dividend income from RPCL was lower than in Q1/16 by THB 60 million**.
- Moreover, the **drop in profits from IRPC-CP and Rayong CUP caused by the customers' maintenance shutdowns** decreased GPSC's overall net profit in Q1/17.

Total Assets

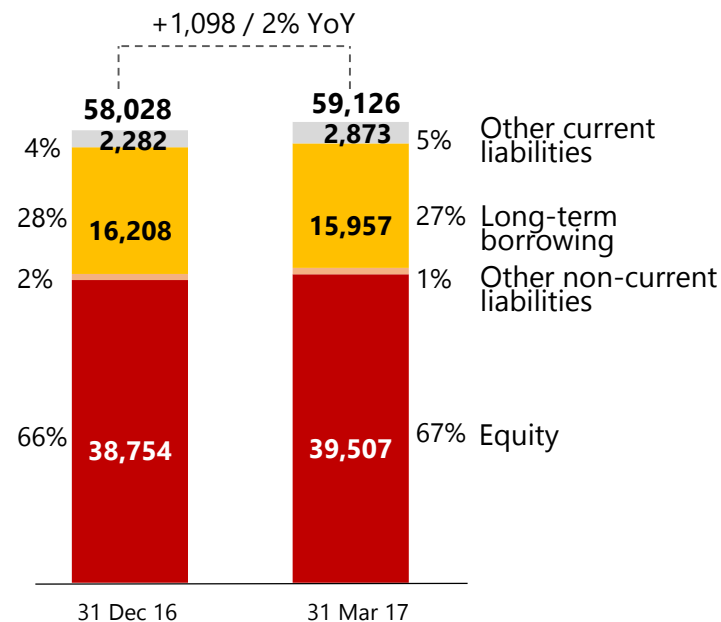
(THB Million)



- **Total assets** increased by THB 1,098 million or 2% from THB 58,028 million to THB 59,126 million in Q1/17.
- The increase was mainly from the **increase in investment in XPCL for THB 645 million**, GPSC hold 25% of shares, and the **increase in fixed assets** of the power plant during Q1/17.

Total Liabilities & Shareholders equity

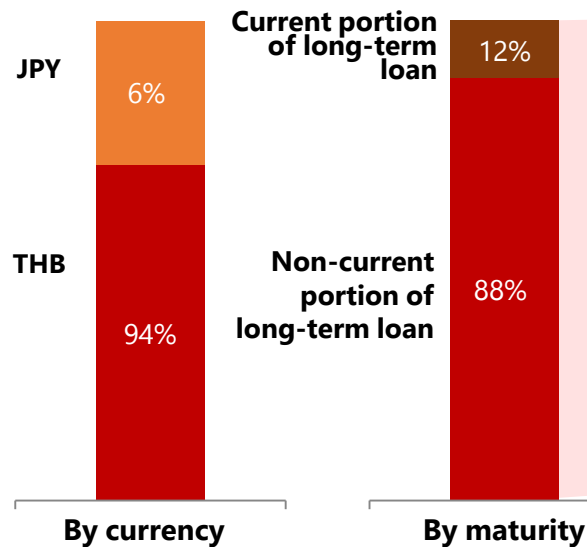
(THB million)



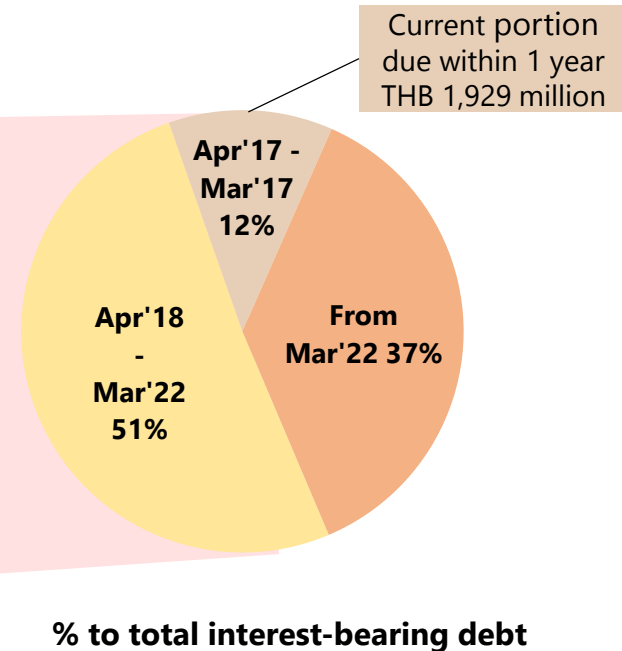
- **Total liabilities** increased by THB 345 million or 2% to THB 19,619 million due to the increase in the payable balance resulted from higher natural gas consumption from Sriracha plant.
- **Equity** increased by THB 753 million or 2% to THB 39,507 million from an increase in retained earnings thanks to the growths of from operating performance.

Debt profile

Total interest-bearing debt: THB 15,957 Million



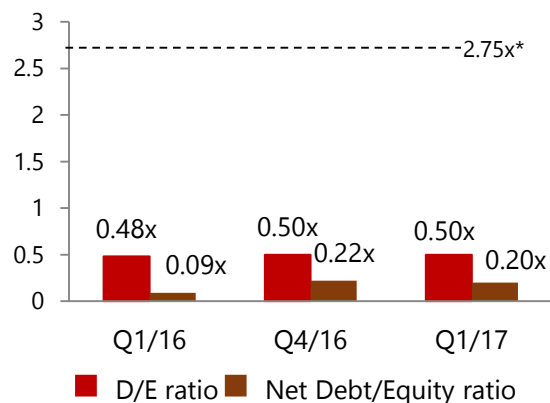
Debt repayment plan



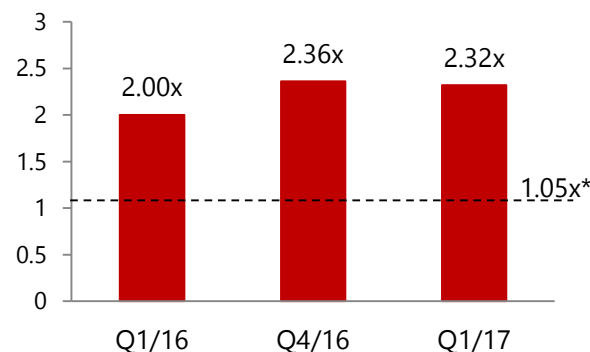
- All debt balance as at 31 March 2017 is in **THB and JPY currency**.
- 100% of total interest-bearing debt is long-term loan which includes **12% of current portion**.

- **Non-current portion** of long-term debt equals to THB 14,028 million while **current portion** equals to THB 1,929 million.
- 51% of total interest-bearing debt will be repaid between April 2018 – March 2022.

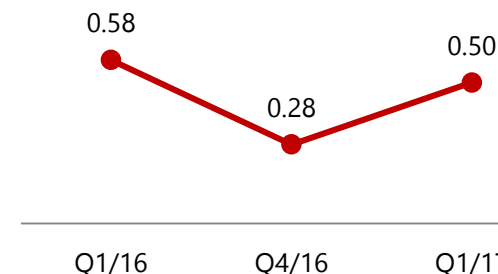
Total D/E and Net Debt/ Equity ratio (Times)



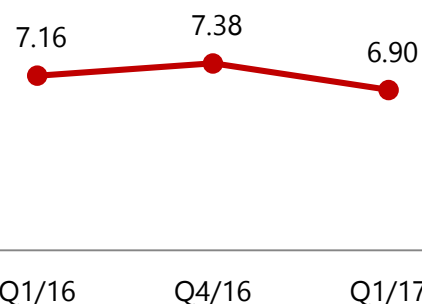
DSCR (Times)



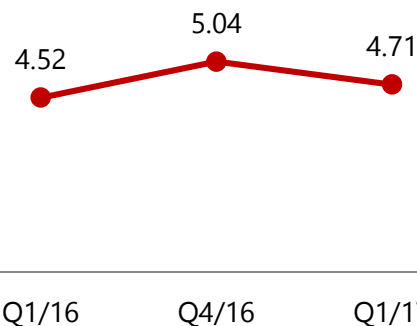
Earning per share (EPS) (Baht/share)



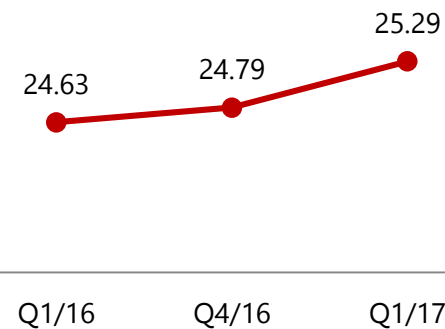
ROE (%)



ROA (%)



Book value per share (BVPS) (Baht/share)





Company Overview



Financial Performance



Investment in Affiliates

CHPP Solar Cooperatives has started COD as planned with the first full quarter to realize revenue in Q1 2017



CHPP Solar Cooperatives
Chanthaburi Province

- ✓ CHPP Solar Cooperatives starts **COD on 30 December 2016 as planned** with operating capacity of 5 MW
- ✓ Securing **Feed-in-Tariff (FiT) at 5.66 THB per unit** along 25 years of contract with Provincial Electricity Authority (PEA)
- ✓ Q1 2017 will be the first full quarter that performance of CHPP Solar Cooperatives will be consolidated to GPSC

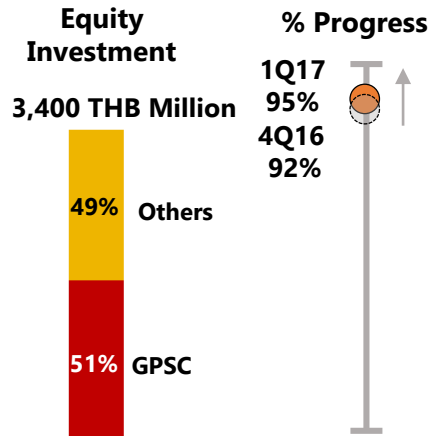
Shareholding





IRPC Clean Power Company Limited (IRPC-CP)

In IRPC Industrial Zone at Choeng Noen, Rayong Province (118 Rai)



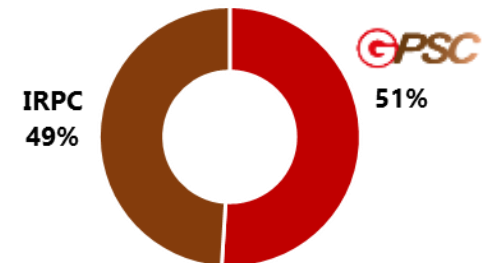
Type	SPP Cogeneration
Capacity*	<ul style="list-style-type: none"> Electricity: 240 MW Steam: 180-300 T/H
Customer*	<ul style="list-style-type: none"> Electricity: EGAT 2x90 MW (25 years), IRPC 60 MW (27 years) Steam: IRPC 180-300 T/H
SCOD	2017
Total Investment	13,600 THB Million
D/E	3:1

Progress update

Phase 2 Under Construction

- Construction progress of the project was 95%.
- Under construction of 230 kV transmission line.

Shareholding

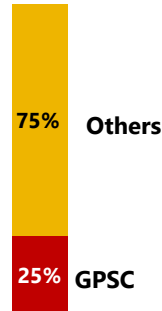




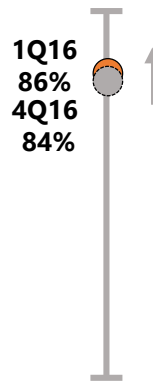
**Bangpa-In Cogeneration Company Limited
(Phase 2)**

Ayutthaya Province

Equity Investment
1,335 THB million



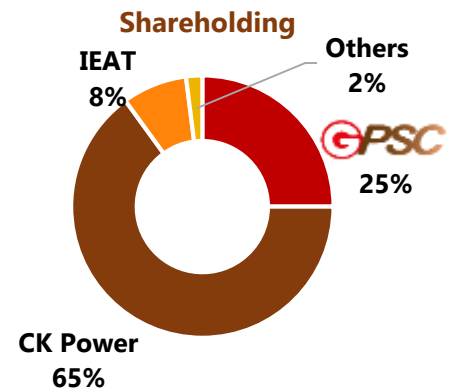
% Progress



Type	SPP Cogeneration
Capacity	<ul style="list-style-type: none"> Electricity: 117 MW (gross) Steam: 20 T/h
Customer	<ul style="list-style-type: none"> Electricity: EGAT 90 MW (25 years), IUs 27 MW Steam: IUs 20 T/h
SCOD	2017
Total Investment	5,340 THB Million
D/E	3:1

Progress update

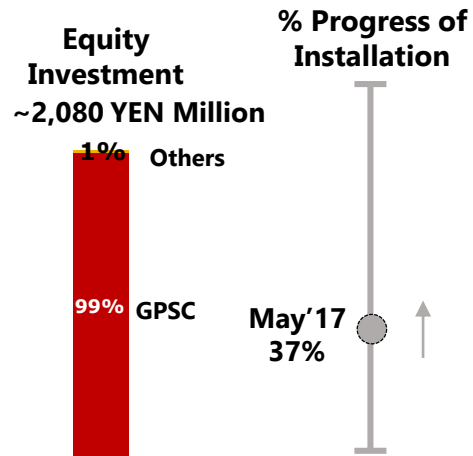
- Construction progress of the project was 86%.
- Fuel gas-introduced to gas compressor and gas turbine first firing test have been completed. Plant performance test and trial run plan will be proceeded for the next stage.





ICHINOSEKI Ichinoseki Solar Power (ISP1)

SOLAR POWER 1 GK Ichinoseki City, Japan

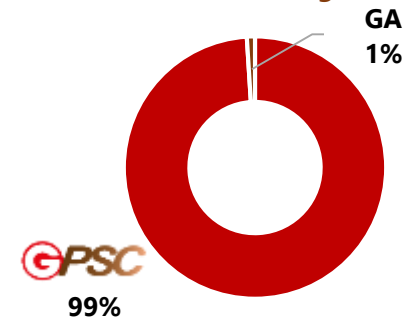


Type	Solar Farm
Capacity	• Electricity: 20.8 MWac
Customer	• Tohoku Electric Power (20 years)
SCOD	2017
Total Investment	~10,001 JPY million
D/E	4:1

Progress update

- Secure FiT at 40 JPY/kWh (exclude tax) for 20 years
- Foundation work and solar panel installation have already started in some area.
- GPSC first international project to COD in 2017

Shareholding



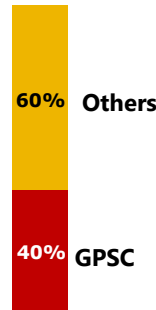


Nam Lik 1 Power Company Limited (NL1PC)

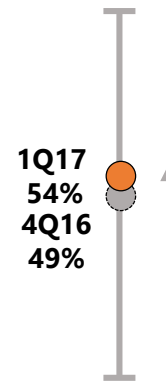
Lao PDR



Equity Investment
~37 USD Million



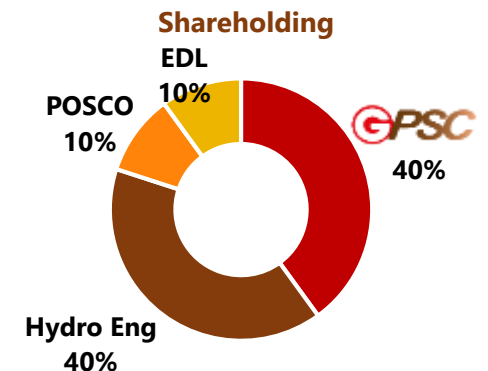
% Progress



Type	Run-of-River Hydropower
Capacity	• Electricity: 65 MW
Customer	• Electricity: EDL 63.8 MW (30 years PPA)
SCOD	Q1 2019
D/E	7:3

Progress update

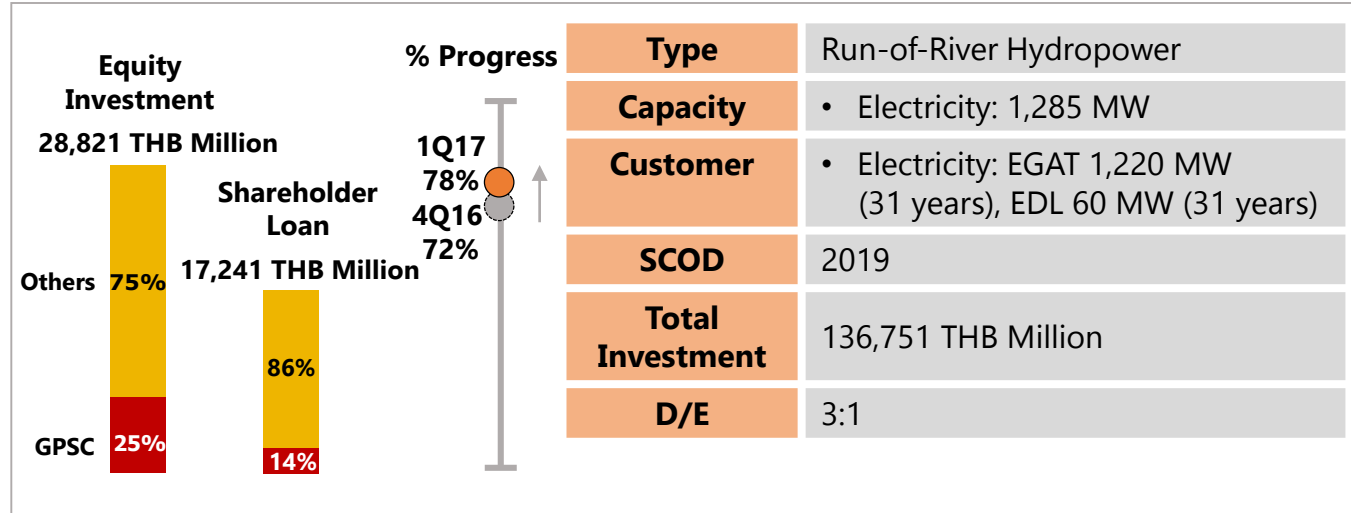
- Construction progress of the project was 54%. NL1PC suggests EPC contractor to engage experience sub-contractor to be responsible for civil work.





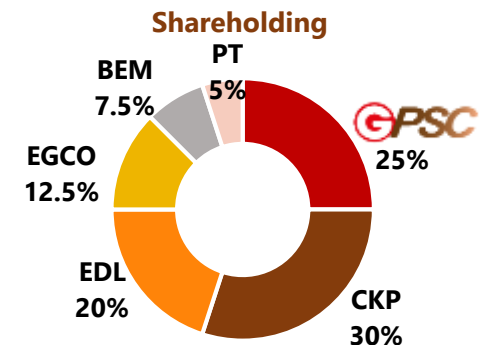
Xayaburi Power Company Limited (XPCL)

Xayaburi, Lao PDR



Progress update

- Construction progress of the project was 78% evaluated by GOL's technical advisor, which concluded that the project is on schedule.
- The permanent structure such as powerhouse, intermediate block, fish passing facilities are progressing well.



XPCL Project improvement according to environmental concerns

Fish passing facilities



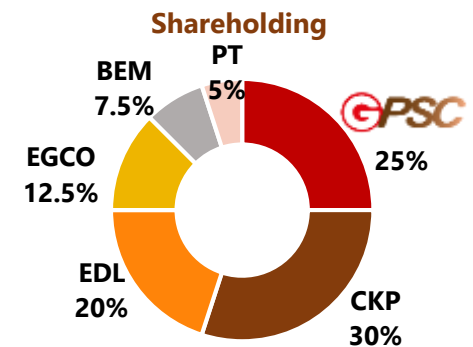
Powerhouse concrete work



Xayaburi Power Company Limited (XPCL) *Xayaburi, Lao PDR*

The additional requirements from Lao PDR's Government upon an environmental concerns in constructing XPCL power plant has caused an incremental construction costs. Therefore, the Government granted XPCL the compensations which are:

- ✓ **Decrease of corporate income tax**
- ✓ **Decrease of royalty fee**
- ✓ **Extend concession period for another 2 years** (after COD date); Total 31 years



Map Ta Phut Expansion Project

Grow with PTT : Be PTT Group's Power in Petrochemical Complex

Rayong Power Plant Rayong Province

CUP -1



CUP -2



CUP -3



Type	Cogeneration
Capacity	<p>CUP-1</p> <ul style="list-style-type: none"> Electricity: 226 MW Steam: 890 T/h Industrial water: 720 Cu.m/h <p>CUP-2</p> <ul style="list-style-type: none"> Cu.m/H Industrial water: 510 Cu.m/h <p>CUP-3</p> <ul style="list-style-type: none"> Steam: 280 T/h Industrial water: 770 Cu.m/h
Customer	<ul style="list-style-type: none"> PTT Group Other IU Customers EGAT
COD	2006-2009
Contract	<ul style="list-style-type: none"> CUP-1: 10-15 years ++ CUP-2: 15 years ++ CUP-3: 15 years ++

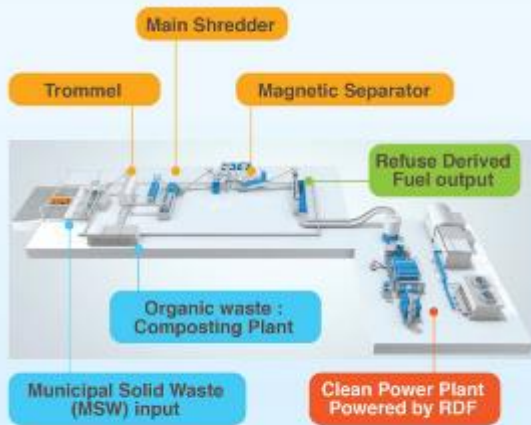


Shareholding





Waste Management Project Rayong Province



Type	RDF	Waste to energy Power Plant (Future Development)
Capacity	Treat MSW at least 500 ton/day	Electricity 8 MW
Customer	RDF Power Plant/ Cement Plant	PEA
Contract	Waste Management Contract between GPSC & Rayong PAO (Secured feedstock)	PPA under Feed-in-tariff scheme

Progress update

- Under the Public and Private Partnership (PPP), the Waste Management Contract is being proved by the Attorney General Thailand
- During process of apply PPA under Feed-in-tariff scheme
- ESA/CoP has been finished
- Completed Basic Engineering Design Package (BED)
- **December 28, 2016, GPSC already signed the Rayong Integrated Waste Management by Private Operator Contract (by converting to RDF) with Rayong Provincial Administration Organization for 22 years**

Shareholding

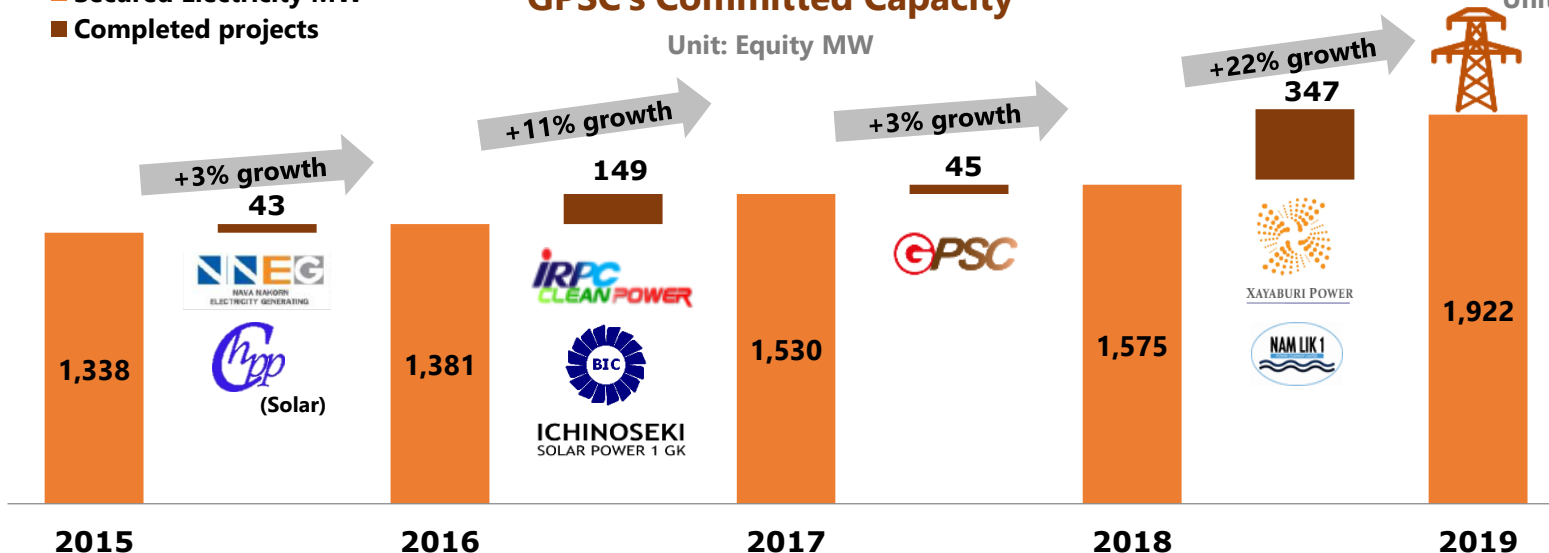


■ Secured Electricity MW
■ Completed projects

GPSC's Committed Capacity

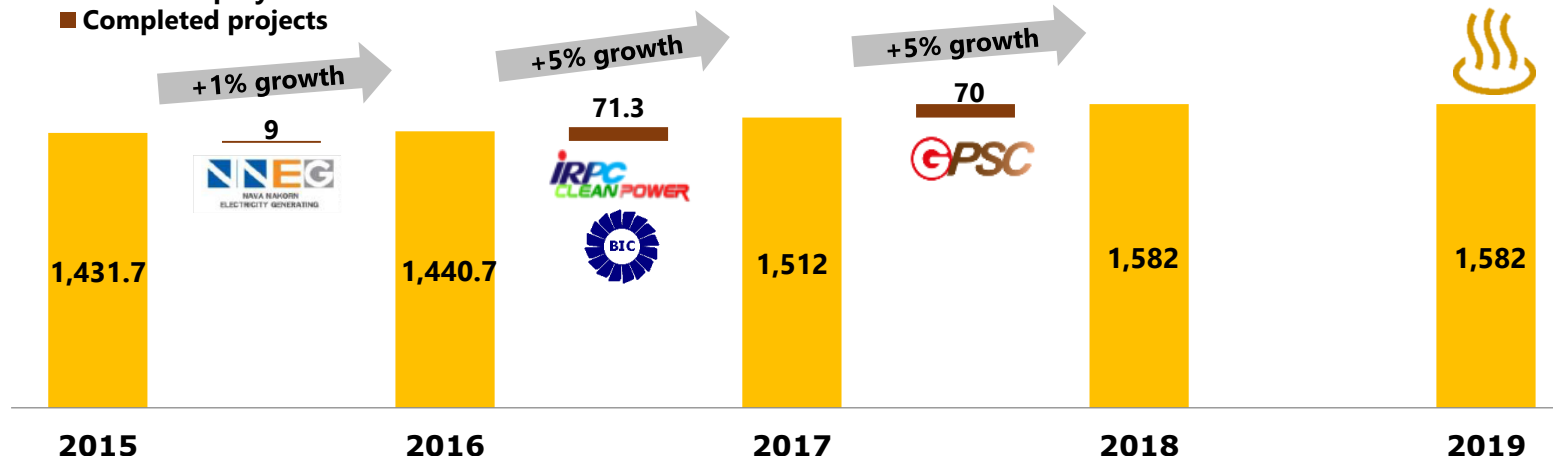
Unit: Equity MW

Unit: Equity MW



■ Secured equity steam
■ Completed projects

Unit: T/h



Maximize

Optimize and Manage cost on existing operating asset

Manage

Project Management / Portfolio Management

Move

3 Growth Engines

Grow with PTT & Domestic



- Be PTT Group's power supplier of choice
- New customers in Thailand
- Positioned for new Energy Policy

International Business



- Focus countries
- Enhance country knowledge and relationship
- Strategic partners

Future Energy



Energy Storage System

- power grid generation
- Smart grids for smart cities

New Organization / Process to support the model

THANK YOU

Global Power Synergy Public Company Limited

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

Disclaimer

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IR Contact

Sukittee Chaiyarak
Juthamas Singanurak
Pimpoy Wichienprakarn
ir@gpscgroup.com
Tel. +662 140 4628,
+662 140 4712,
+662 140 4691
www.gpscgroup.com

Ratios	Formula
Gross profit margin	$\frac{\text{Gross profit}}{\text{Revenue from sales of goods and service} + \text{Revenue from finance lease}}$
Net profit margin	$\frac{\text{Net profit}}{\text{Total Revenue}}$
Total Debt to Equity	$\frac{\text{Total liabilities}}{\text{Total shareholder's equity}}$
Net debt to Equity ratio	$\frac{\text{Interest bearing debts} - (\text{Cash and cash equivalents} + \text{Restricted cash} + \text{Current investments})}{\text{Total shareholder's equity}}$
DSCR	$\frac{\text{EBITDA for DSCR for the last 12 months}}{\text{Principal and Interest to be paid in the next 12 months}}$
Earning per share (EPS)	$\frac{\text{Net profit for the company}}{\text{Weighted average number of shares}}$
ROE	$\frac{\text{Net profit for the company}}{\text{Average shareholder's equity}}$
ROA	$\frac{\text{Net profit (last 12 months)}}{\text{Average assets}}$
Book value per share (BVPS)	$\frac{\text{Shareholder's equity for the company}}{\text{Average shareholder's equity for the company}}$



2017 Maintenance schedule: Sriracha and Rayong plants

Plant	Tag no.	Description	2017											
			Q1			Q2			Q3			Q4		
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CUP-1	H-13701	Aux. Boiler.11			1Y 2-12/3									
	N-13901 H-13702	GTG11 HRSG11		1Y 18-28/2										
	N-13902 H-13703	GTG12 HRSG12		18-31/4 18-31/4	HG 3Y	HG 3Y	30/3-12/4 30/3-12/4							
	N-13903 H-13704	GTG13 HRSG13		13-26/3	PSV	23-26/3		10-20/6 1Y	1Y 4-14/7					
	N-13904 H-13705	GTG14 HRSG14		13-26/3 1Y 3-13/2	PSV	23-26/3						1Y 15-25/10		
	N-13961 H-13761	GTG15 HRSG15												
	N-13962 H-13762	GTG16 HRSG16	8 MI 29 8 3Y 29											
CUP-2	H-23701	Aux. Boiler.21					16-26/6 1Y		1Y 1-11/7					
	N-23901 H-23701	GTG21 HRSG21					16-26/6 1Y							11-21/12 1Y
	N-23902 H-23702	GTG22 HRSG22					16-29/6 1Y 16-29/6 3Y						HG 3Y 1-14/11 3Y 1-14/11	
	N-23911	Steam Turbine21					16-30/6 MI						MI 16-30/11	
CUP-3	H-33701	Aux. Boiler 31								3Y 1-13/8				
	H-33711	Aux. Boiler 32										3Y 1-13/10		
	H-33712	Aux. Boiler 33									3Y 15-27/9			
SRC	11MB 1-211-SG-101	GT11 HRSG#1											1Y	
	12MB 1-211-SG-201	GT12 HRSG#2											1Y	

Notes

MI Major Inspection for Gas Turbine 22 days
 HGPI Hot Gas Path Inspection for Gas Turbine 14 days
 MO 2nd Major Overhaul for Steam Turbine 27 days
 Mi Minor Inspection for Steam Turbine 15 days
 1Y One Year Inspection Aux. Boiler 11 days
 3Y Three Year Inspection Aux. Boiler 13 days

Rayong Site

Major Inspection for Gas Turbine 22 days
 Hot Gas Path Inspection for Gas Turbine 14 days
 2nd Major Overhaul for Steam Turbine 27 days
 Minor Inspection for Steam Turbine 15 days
 One Year Inspection Aux. Boiler 11 days
 Three Year Inspection Aux. Boiler 13 days

Notes

CI Combustion Inspection for Gas Turbine 9 days
 1Y One Year Inspection HRSG 8 days
 Maintenance schedule as of 4Q16

Sriracha Site

Combustion Inspection for Gas Turbine 9 days
 One Year Inspection HRSG 8 days

Maintenance schedule: IRPC-CP

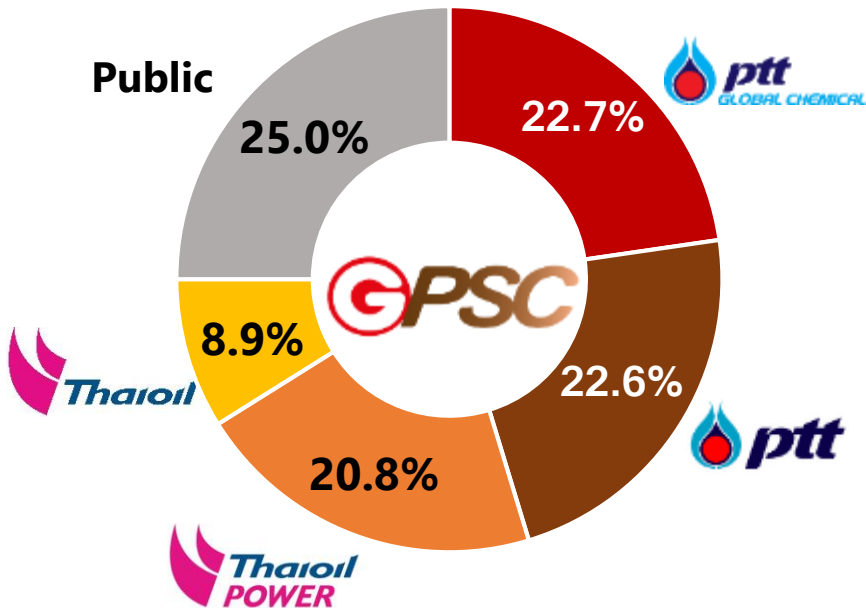
Plant	Unit	2016											
		Q1			Q2			Q3			Q4		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
IRPC-CP	CTG 2B								22/09	A	30/09		
	HRS2B								22/09	YI	30/09		
	Aux. Boiler				23/05	YI	27/05						

Notes

A Level A inspection 5 days
 YI Yearly inspection 5 days

Plant	Unit	2017											
		Q1			Q2			Q3			Q4		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
IRPC-CP	CTG 2B	12/02	IRPC Turnaround	13/03			27/06	1st Synchronization/Commissioning			16/09		
	HRS2B	12/02	IRPC Turnaround	13/03			27/06	1st Synchronization/Commissioning			16/09		
	Aux. Boiler	7/02	IRPC Turnaround	7/03			26	SD	30				

GPSC's Shareholding Structure



Vision

'The Global Leading innovative and sustainable power company'

Mission

- Create long term shareholders value with **profitable growth**.
- **Delivery reliable energy** through operation excellent to customer.
- Conduct business with **corporate governance, social and environmental responsibility**
- Seek for innovation in power and utility efficient management through **Energy Storage Technology/ Smart Grid/Smart City**

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

Availability Payment



Energy Payment



Availability %
x
Availability Payment Rate (APR)



Energy cost regarding % Dispatch to EGAT

EGAT (Power)

Firm	Capacity Payment	+	Energy Payment
Non-Firm	K factor (seasonal weight)	×	Energy Payment

Industrial Customers

Electricity	PEA tariff TOU Rate 4.2*
Steam	Steam Base Cost x (Gas index + CPI index)

Base Tariff



Ft



adder

Feed in Tariff

*<https://www.pea.co.th/Documents/Rate2015.pdf>
Reference rate with conditions

GPSC's Business Portfolio

 Sriracha 700 MW	 Rachaburi Power 1,400 MW	 Xayaburi Power 1,285MW
 Nava Nakorn Electricity Generation 125 MW 30 T/h	 Bangpa-in Cogeneration Phase 1 : 117 MW Phase 2 : 117 MW 20 T/h 20 T/h	 IRPC Clean Power 240 MW 300 T/h
 CUP 1-4 384 MW 1,410 T/h		
 Chantaburi's Shrimp Farmer Cooperative 5 MW	 Thai Solar Renewable 80 MW	

Japan : ISP1 20.8 MW

Lao PDR : NL1PC 65 MW

Pricing Structure

IPP/Import = Availability Payment + Energy Payment

Investment cost	<ul style="list-style-type: none"> • Equity Return • Financing Cost • Fix O&M 	<ul style="list-style-type: none"> • Fuel Cost • Variable O&M
-----------------	--	---

SPP (firm) = Capacity Payment + Energy Payment

<ul style="list-style-type: none"> • Vary by type of fuel & Contract Period • FX adjustment 	<ul style="list-style-type: none"> • Vary by type of fuel • Fuel adjustment
---	---

Cogen (SPP non-firm) = K factor(seasonal weight) x EP

Cogen (Sell to IU) = Electricity + Steam

• Base Tariff (PEA : TOU 4.2) + Ft	• Cost Plus Basis
------------------------------------	-------------------

VSPP Renewable = Base tariff + Ft + Adder

VSPP Renewable = FiT

Renewable = FiT

Renewable = Fixed Rate with escalation

Details of GPSC Group's Power Plants

Name	Type	GPSC's share %	Total capacity (MW)	Equity capacity (MW)	Steam (T/H)	Industrial water (Cu.m/H)	COD	Tenor
IN OPERATION								
Sriracha	IPP	100%	700	700		80	2000	25/2025
CUP-1	SPP	100%	226	226	890	720	2006	10-15/2021++
CUP-2	SPP	100%	113	113	170	510	2008	15/2022++
CUP-3	SPP	100%	-		280	770	2009	15/2023++
CHPP	VSPP	100%	5	5		-	2008	30/2038
IRPC-CP Phase 1	SPP	51%	45	23	86.7	-	2015	25/2040
CHPP (Solar)	VSPP	100%	5	5			2016	2041
Consolidate to Financial Statement				1072	1427	2080		
TSR	Renew	40%	80	32		-	2013	25/2038
NNEG	SPP	30%	125	38	9		2016	25/2041
BIC-1	SPP	25%	117	29.25	5	-	2013	25/2038
RPCL	IPP	15%	1,400	210		-	2008	25/2033
Share of Profit / Dividend Income				309	14			
Total operating				1,381	1,441	2,080		
UNDER CONSTRUCTION								
CUP-4	SPP	100%	45	45	70			-
ISP1	Solar	99%	20.8	20.6			2017	20/2037
IRPC-CP Phase 2	SPP	51%	195	99.4	66.3		2017	25-27/2044
NL1PC	Hydro	40%	65	26			2019	27/2044
BIC-2	SPP	25%	117	29.25	5		2017	25/2042
XPCL	IPP	25%	1,285	321			2019	29/2048
Total under construction				541.3	141.3			
Total capacity				1,922	1,582	2,080		

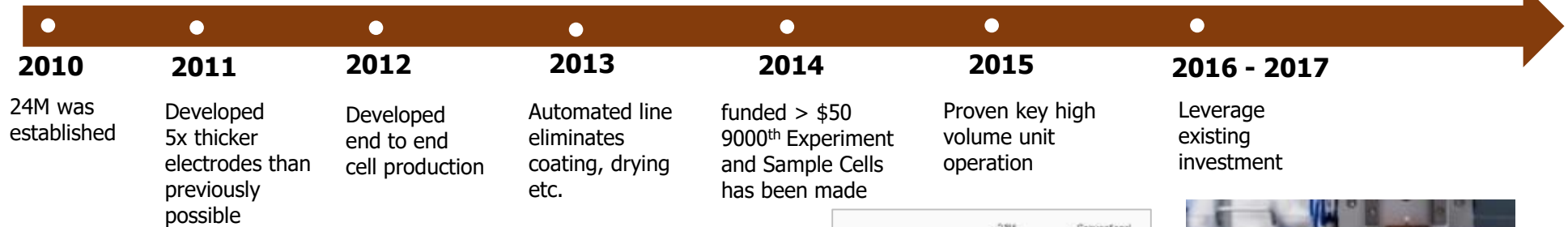
24M Technologies, Inc. (24M) Cambridge, Massachusetts (MA), USA

Business

Lithium-Ion Battery technology

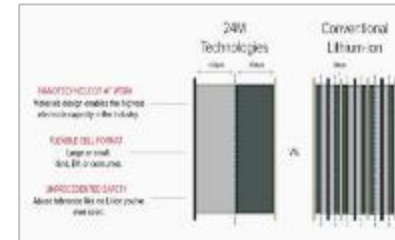
Application

• Energy Storage System (ESS)

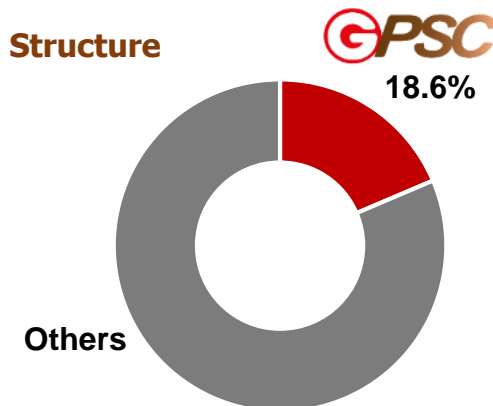


Progress update

- On October'16, 24M Delivers Initial Quantity of Production-size Semisolid Lithium-ion Cells to NEC Energy Solutions (NECES) for Testing and Validation.
 - Currently, 24M is working on the **developing of High Volume Manufacturing production line.**



Shareholding Structure



Awards & Recognition

- Throughout 2016, 24M has received many awards and recognition. For example :
 - 2016 Energy Innovation Pioneers: CERA WEEK**, HIS Energy
 - 2016 New Energy Pioneers: Future of Energy Summit**, BENF
 - Listed in **"50 Smartest Companies 2016"**: MIT Technology Review
 - 2016 Platts Global Energy Awards finalists** : Breakthrough Solution of the Year
 - 2016 Zayed Future Energy Prize finalists**

Total Investment of GPSC Portion

~22 USD million