GPSC

THE INNOVATIVE POWER FLAGSHIP OF PTT GROUP

Corporate Presentation

GLOBAL POWER SYNERGY PUBLIC COMPANY LIMITED

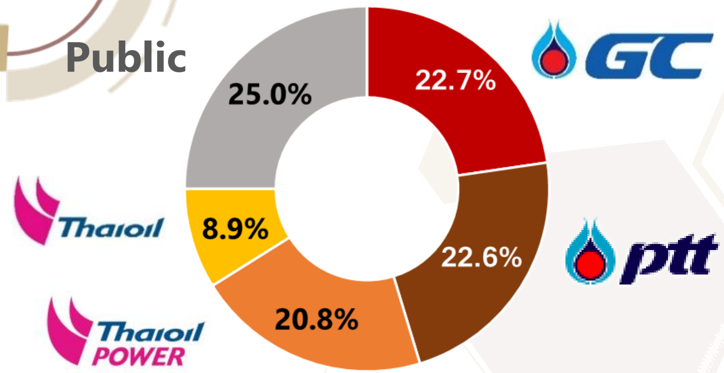
dbTISCO Local Non-Deal Roadshow 23-24 July 2018

Global Power Synergy Public Company Limited

- ❖ **Introduction to GPSC**
- ❖ Thailand Power Industry Overview
- ❖ GPSC's Growth Strategy
- ❖ Financial Performance
- ❖ New Projects under Construction

GPSC Innovative Power Company at a Glance

GPSC's Shareholding Structure



Thai Oil Power is 73.99% held by Thai Oil and 24.01% by PTT
As of 13 July 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 17 July 2018)*	THB 104,132 million

GPSC's committed capacity is 1,940 Equity MW Electricity and 1,585 T/H Steam in year 2020

COMBINED CYCLE / COGENERATION

Electricity 1,535 MW
Steam 1,585 T/H
Industrial Water 2,080 Cu.m./H
Chilled Water 12,000 RT

RENEWABLE ENERGY

Electricity 58 MW

HYDROELECTRIC

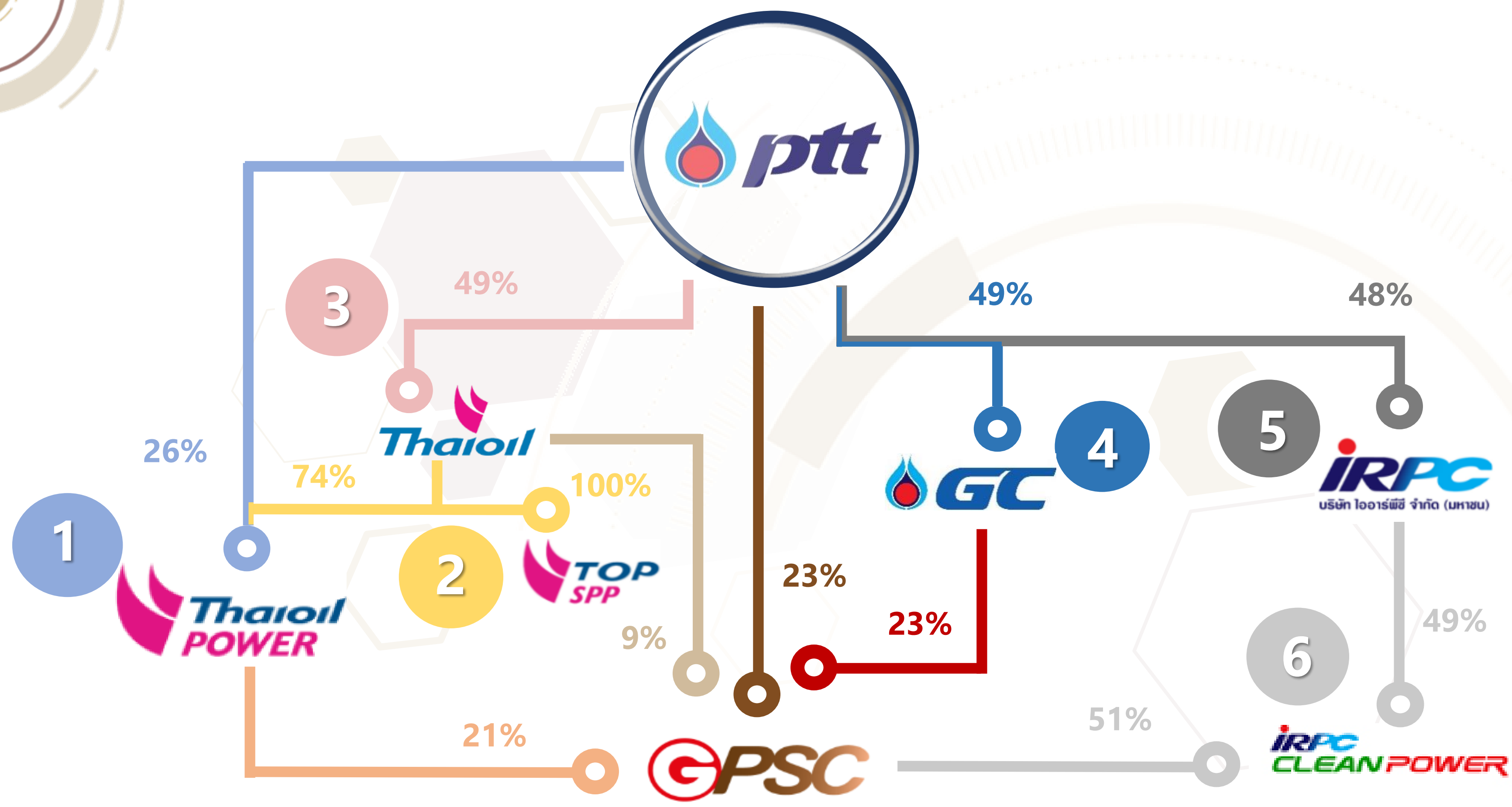
Electricity 347 MW

OTHER BUSINESSES

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

Remark: Capacity includes projects under construction
Source: www.gpscgroup.com

Petroleum Authority of Thailand PLC (PTT), GPSC's parent company, is the largest energy conglomerate in Thailand



Power Flagship of PTT Group with Solid Customers' Profiles

GPSC's major customers are EGAT and PTT group, whom are one of those with best credit profiles in the country. Moreover, GPSC operated with long term off-take contracts.

57% MAJORITY OF GPSC'S REVENUE IS FROM ELECTRICITY, PTT GROUP IS GPSC'S MAJOR CUSTOMER, AND IT IS SECURED THROUGH LONG-TERM OFF TAKE CONTRACTS.

35% GPSC AND ITS INVESTED COMPANIES SELL POWER TO INDUSTRIAL CUSTOMERS AND PUBLIC AGENCIES

8% IN ADDITION, GPSC ALSO SELLS POWER GENERATION BY PRODUCTS TO INDUSTRIAL CUSTOMERS IN NEARBY AREAS, PREVENTING IT FROM A CUSTOMER MONOPOLY.

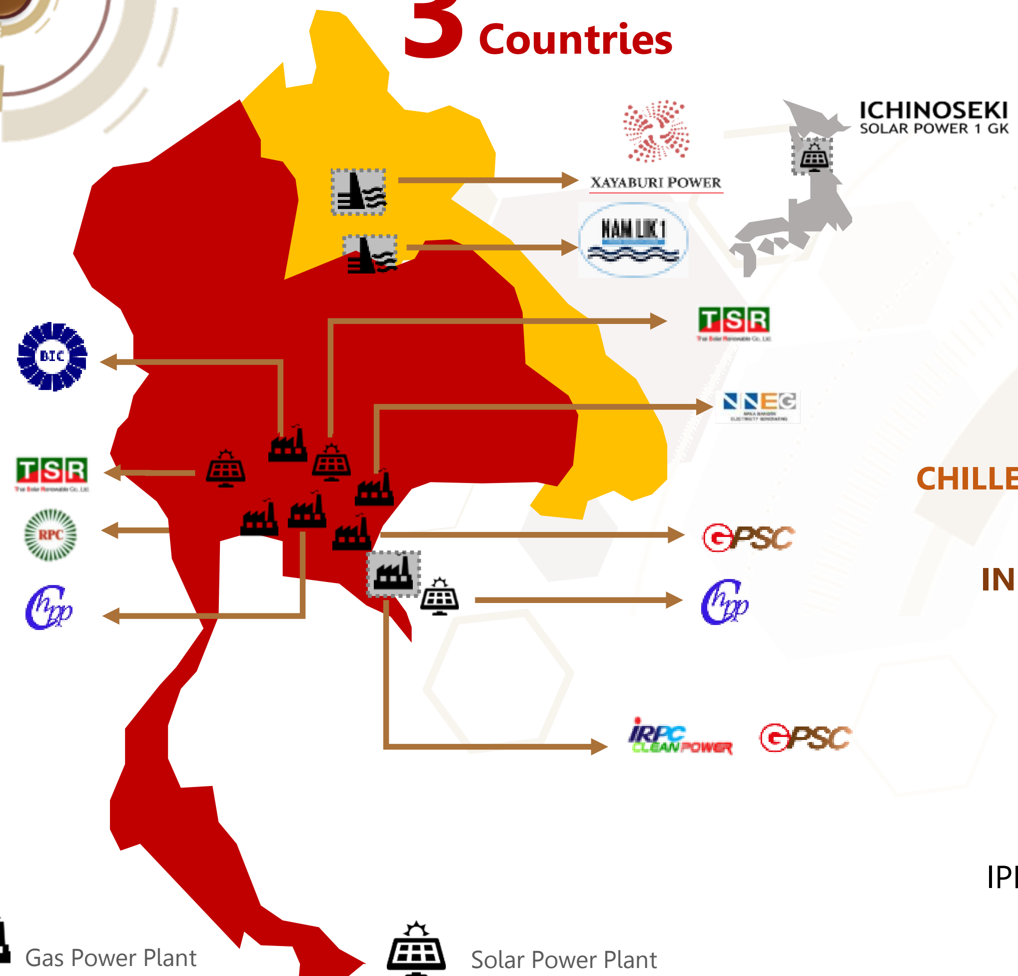
GPSC OPERATES WITH LONG TERM OFF TAKE CONTRACTS

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

GPSC's Business Portfolio in Thailand, Lao PDR and Japan

3 Countries

Today, GPSC's power plants continue to grow in locations, customer groups, and fuel types, as illustrates in the picture..



Gas Power Plant
Hydro Power Plant
Solar Power Plant
Project under construction

As of July 13, 2018, GPSC committed equity capacities below:

POWER	1,940 megawatts*
STEAM	1,585 tons/hour**
CHILLED WATER	12,000 refrigeration tons
INDUSTRIAL WATER	2,080 cu.m./hour

**Of 1,940 megawatts: operates 1,530 MW and under construction 410 MW*
*** of 1,585 tons/hour: operates 1,512 T/H*

CAPACITY BREAKDOWN — 1,940 equity MW

IPP	SPP	Renew & Hydro	VSPP
48%	31%	21%	0.003%

Significant events

Investment

Approved the M&A agreement with **GLOW** to achieve a giant step forward to be **Thailand's biggest Small Power Producer of 2,301 equity MW**

Geared up the investment in **24M** by cooperating with **US firm's** technology to produce and distribute **Lithium-Ion batteries in ASEAN**

Signed MOU with **NNCL** to develop the **Solar Rooftop, Energy Storage System and Smart Grid** project in **Nava Nakorn industrial zone**

Planned to build a **pilot project** of **lithium-ion battery** beginning with **Nava Nakorn industrial estate** and installation of solar rooftop to industrial users under **PTT group** and in Eastern Economic Corridor **(EEC)**

Operation

Bangpa-In Cogeneration Company Limited Phase 2 (BIC2) started COD and supplied electricity to EGAT with total capacity of 117 MW of electricity and 20 tons/hour of steam.

IRPC Clean Power Company Limited Phase2 (IRPC-CP) started COD and supplied electricity to EGAT with total capacity of 240 MW for electricity and 180-300 tons/hour of steam.

Ichinoseki Solar Power1 G.K. (ISP1) started COD and supplied electricity to Tohoku Electric Power Co,Inc with total of 20.8 MW at FiT of 40 JPY per KWh for term of 20 years.

Awards

Granted **2 awards** from the 8th Asian Excellence Award 2018 for **Asia's Best CEO Award** and **Best Investor Relations Company.**

Granted **1 award** from JIPM Assessors, Japan for **TPM Excellence Award 2017.**

Granted **1 certificate of Collective Action Coalition against corruption** from CAC

Granted **1 award** from The Asset Triple A Asian Awards 2018 for **Power Deal of the Year Highly Commended 5 Billion Baht Inaugural Debentures.**

Selected to include in **Thailand Sustainability Investment (THSI)** among other 65 listed companies by SET.

Financing

Annual dividend payment from 2017 operating results for **1.25** Baht per share in which 0.80 Baht per share has been distributed in Q1 of 2018.

Increase in total liabilities by 5% due to the issuance of long-term loan for IRPC-CP and the increase in construction account payable from the CUP-4 construction.

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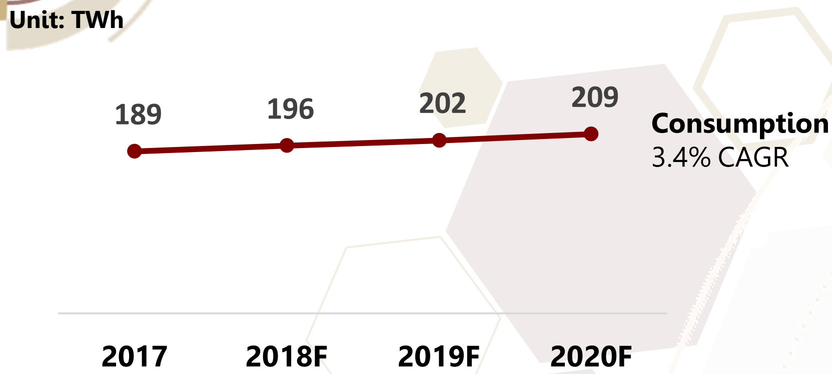
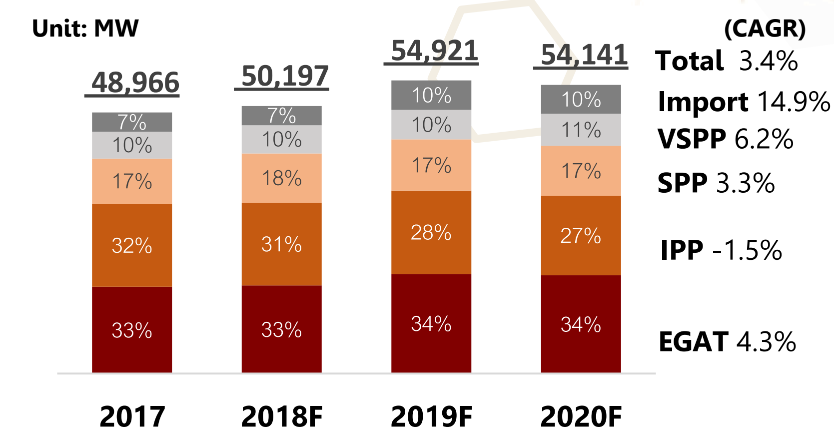
Thailand Market Outlook 2018

Thailand Electricity Consumption



Thailand Electricity Generation PDP 2015



Higher Demand Growth

Increase in electricity consumption by 3.4% CAGR as reflected in the higher Ft rate of -0.16 Baht/unit. However, IPP trend in generation has expected to decrease with the **increasing trend of SPP and VSPP generator**.

SPP Extension Policy

Energy policy and planning office, Ministry of Energy has considered to announce the adjustment of **SPP extension contract from 10-year to 3-year period** with the purchased capacity ranging from 40-90 MW.

New Demand

New power demand at least 3,000 MW from electric vehicle, EEC area, high speed train, smart grid, smart city and distributed energy resource (DER)

Power Shortage in Southern Thailand

Cancellation of coal power plants in Southern Thailand causing a lack of reliable power plants around 717 MW in 2019.

Source: Ministry of Energy, PDP 2015

Thailand Energy 4.0

กระทรวงพลังงาน
MINISTRY OF ENERGY

Energy Sector Improvement

Current Situations	Short term plans	Targets in 2030
Unbalanced fuel mix and instability from renew	• Renew plan for each region • Firm renew + ESS • Transmission line that support renew	• Natural gas down from 64% to 37% • Firm renew up from 8% to 20% • Coal up from 18% to 23% • Import up from 10% to 20
80% **Non-fully utilize generation & distribution system**	• Refurbish old power plants • Merit order • Buy and sell power with neighboring countries	• ASEAN Power Hub • Competitive power cost compared to other ASEAN countries
Low efficiency of power utilization	• Replacement of high efficiency equipment • Electrical equipment • Energy saving building • ESCO	• Renew plan for each region • Firm renew + ESS • Transmission line that support renew
Centralized production & distribution	• Distributed Generation (DG) • Micro grid pilot project	• Renew plan for each region • Firm renew + ESS • Transmission line that support renew

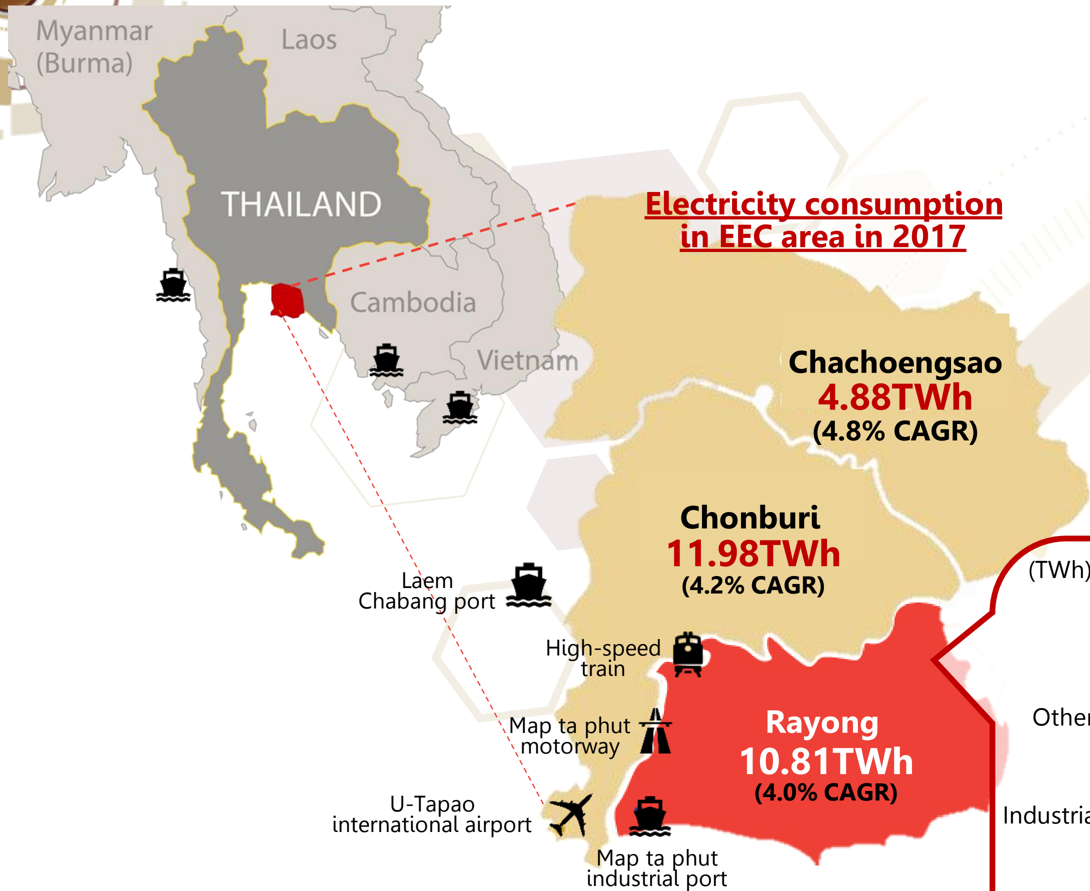
Innovation..

- **Micro grid**
- **Smart energy**
- **Smart grid**

- **Energy storage system**
- **SPP hybrid firm /VSPP firm**
- **Next generation of renewable**

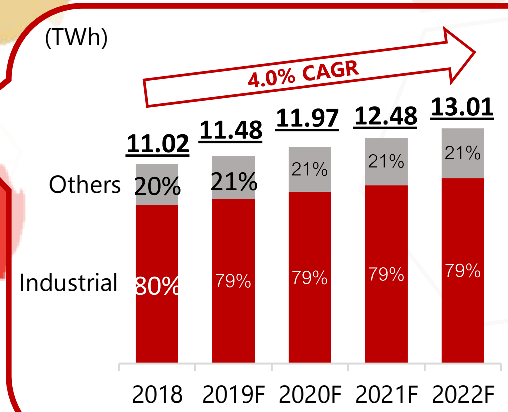
With the support from upcoming EEC project, demand of electricity is expected to increase by 4% CAGR

Electricity demand in Rayong by consumer type from 2013 to 2021 KWh



Thailand's Eastern Economic Corridor (EEC)

- ✓ Key and strategic area to support Thailand's flagship Special Economic Zone (SEZ)
- ✓ Gateway location for multi-connection and transmission among ASEAN and to China and India
- ✓ Increase in no. of Thailand leading industries in the area



Increase in electricity demand

- **Large business** or industrial estate has been the largest electricity user and the main driver of the increase in overall electricity demand in Rayong with 4% CAGR as effected by the EEC project in which the GDP in the area is expected to grow by 5%

- Introduction to GPSC
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- **GPSC's Growth Strategy**
- Financial Performance
- New Projects under Construction

GPSC Strategic Direction and Growth Strategy

GROWTH

"To be top of power company in Thailand"

Benchmarking
- Enhance ROA
- Enhance flexibility

Maximize core business
Plant operation to enhance competitive advantage

Manage invested companies
Center of Engineering

Engineering team
- Change to support Growth

GPSC's Three Strategic Pillars

Inorganic Growth
To build up critical size of company by M&A

Organic Growth
Investing with PTT group and new market ex. EEC and international

Innovative Renewable
Invest in renewable project and energy storage

Digitalization - Improve internal work process to operational excellence

Sustainability Culture – DJSI, OEMs, Customer Oriented

HR and Finance – Increase competency and competitive cost of capital

Inorganic Growth

Objective	Continuously expanding size of GPSC through M&A

Deal

Decision making process

Deal Criteria:

1. Diversified fuel plant
2. Operating power plant
3. Size Bigger than 1,000 MW

Strategy to success:

1. Competitive rate of return
2. Synergy with current portfolio or PPT Group

Goals to be achieved

- **Sizable:** enough to invest in more projects and possible to balance porfolio with new business
- **Competitive:** with other players
- **Strong cash flow:** for new innovation/ S-Curve Investment

Crucial Support to succeed

- Strategy Value Creation
- Source & Cost of Fund
- Post Deal Management
- M&A competency

Organic Growth

Objective	Investing in Conventional Projects		
Project	**1. Thailand first**	**2. Second Home**	**3. Go along with PTT Group**
	✓ Co-generation expansion ✓ Utility provider for EEC	✓ Invest in growth market ✓ Possible to re-invest	✓ Growth along with investment of PTT Group
Strategic move	➢ Build cost competitive to be utility provider for new industrial estate	➢ Right Partner (Governance, Local, Developer) ➢ Man on the ground	➢ Go with integrated PTT Group value chain

Example


Myanmar

Gas

Coal


Laos

Hydro

PTT GLOBAL CHEMICAL

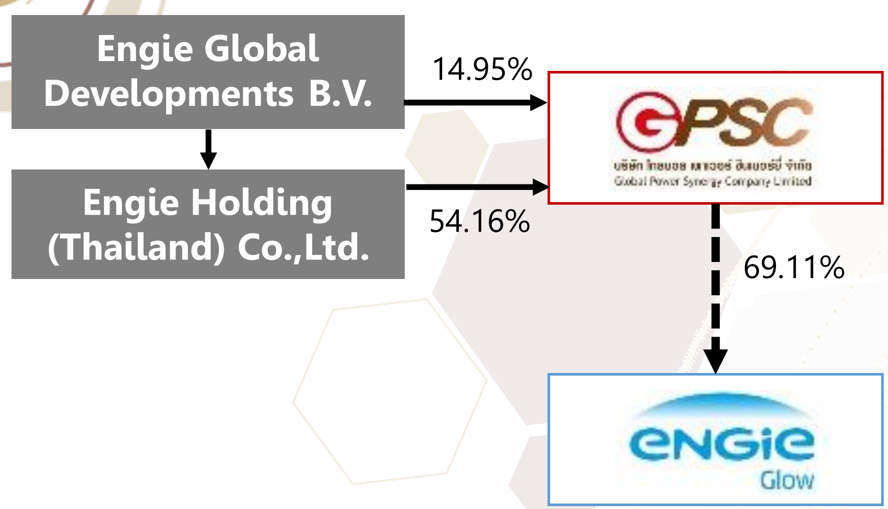
Innovative Renewable

Objective	**To become a Global ESS System Integrator**			
Activity	**Renewable energy** + **Energy storage** = **Energy storage system**			
	Renewable Private PPA	**Battery Merchant**	**ESS System Integrator**	**Energy Management Solution Provider**
	• Develop solar private PPA for industrial customers	• A Pioneer **Battery Producer 100 MWh** and expand to 2-5 GWh • Increase product varieties and develop BMS*/PCS*	• Develop ESS pilot project • Securing ESS projects within PTT group and government (EGAT/PEA/MEA)	• Provide energy management solutions to customers
Strategic move	➢ **Produce quality battery with competitive price**	➢ **Build employee compentency for this business**	➢ **Involve in government regulation and incentive policy for ESS business**	

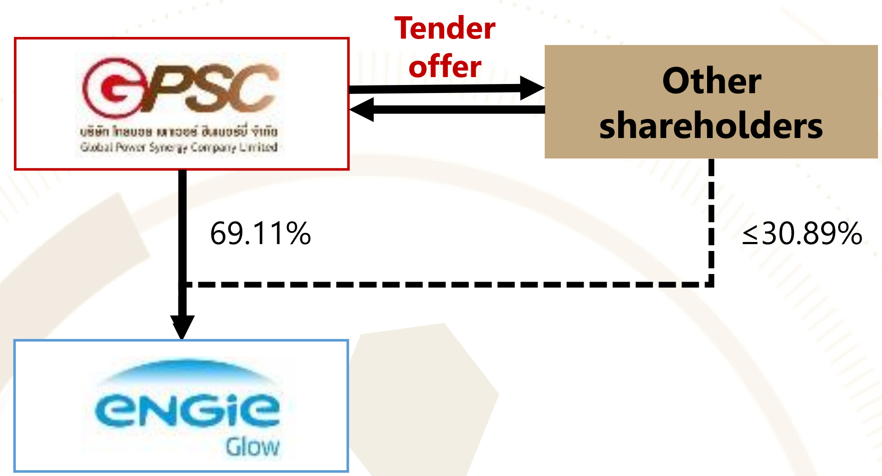
BMS = Battery Management System
PCS = Power Conversion System

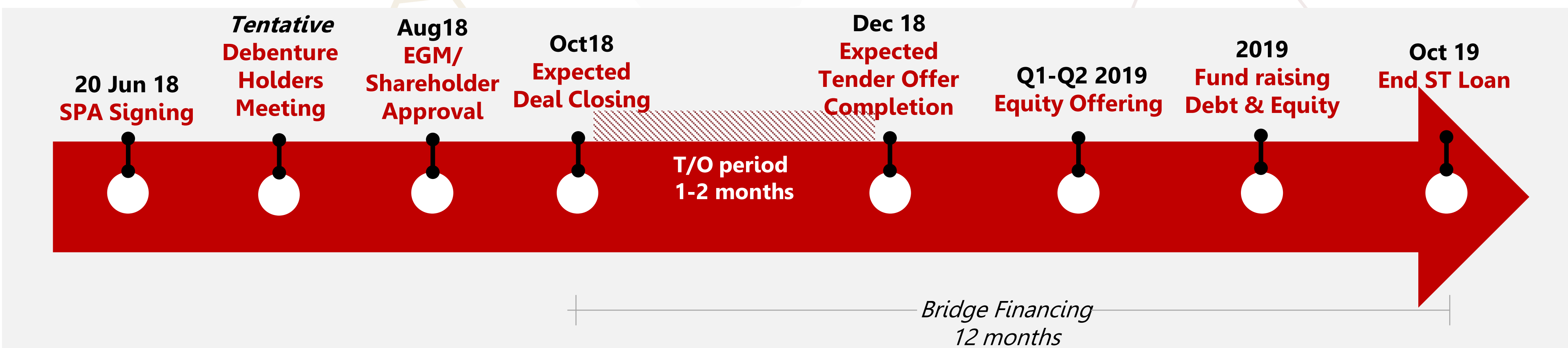
Inorganic Growth: Acquisition Transaction and Tender Offering

Share Purchase Transaction from Engie Group



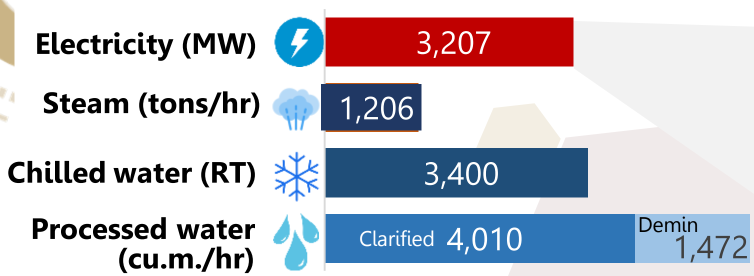
Tender Offering





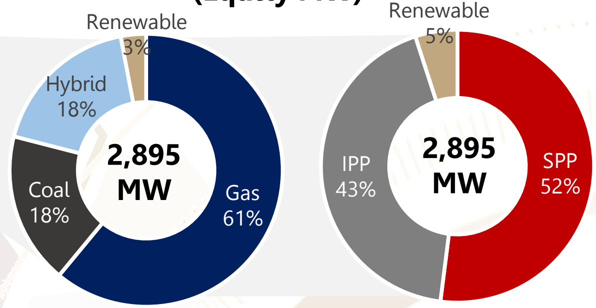
GLOW is a major electricity generating player in Thailand with 3,207MW production capacity

Glow Production Portfolio

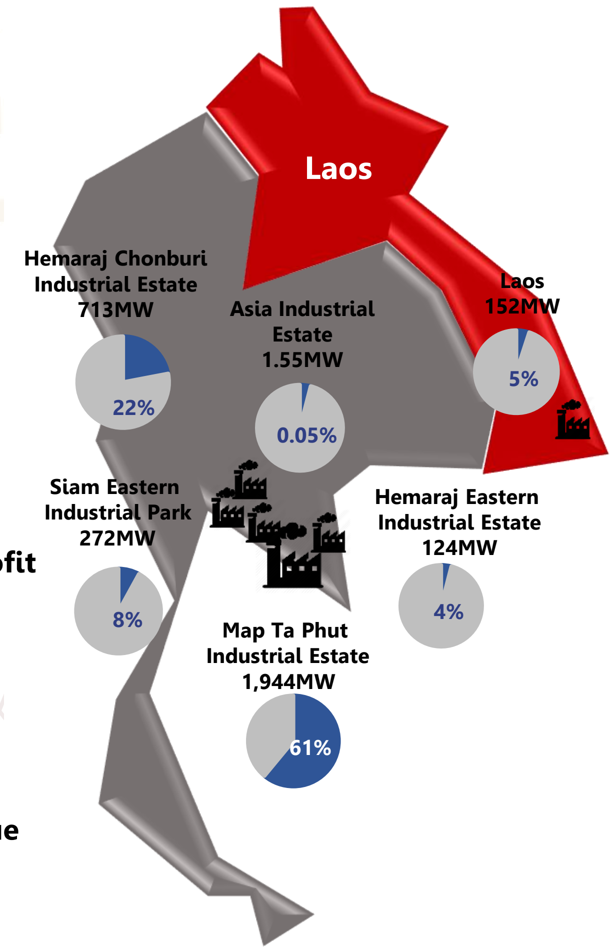


Electricity Generation Capacity

(Equity MW)



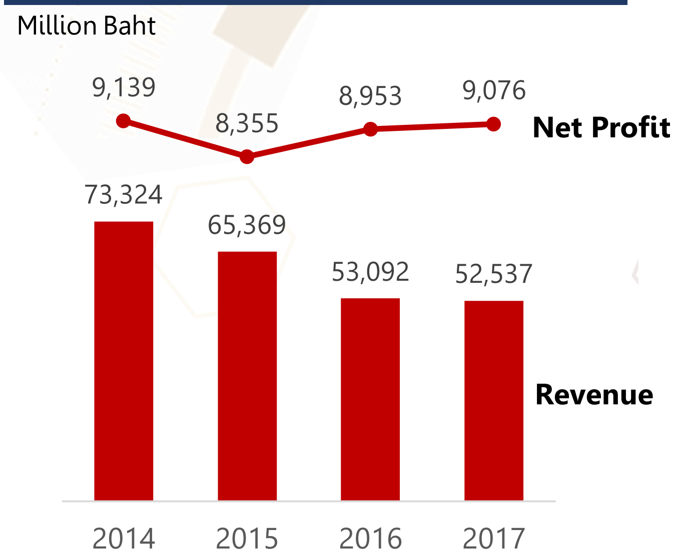
Diverse Area of Power Plant



About GLOW

Type of business	Generate and supply of electricity, steam and water for industrial use and electricity to Electricity Generating Authority of Thailand (EGAT)
Registered Capital	14,828,650,350 Baht
Paid-up Capital	14,628,650,350 Baht
Market Capitalization	136,412,160,000 Baht 4,133,701,818 USD*

Revenue and Net Profit



*As of July 16, 2018 : Average Bank of Thailand (BOT) selling rate THB/USD of 33.00

Why Acquisition? Why Glow?

1 Rare & Sizable Growth Opportunity

- **GPSC (post-merger) will rank #3 Power Producer** with total committed capacity of 4,835 equity MW
- Larger portfolio with higher stability and credibility

2 Highly Focused on SPP

- **GPSC will become #1 SPP** in contracted capacity equity capacity of 2,301 MW
- Favorable conditions to have renewal of SPP contracts

3 High Performance Organization with Strong Cash Flow

- **Strong historical and forecasted operating performance** with immediate cashflow generation

4 Potential Synergies and Diversification

- Enhanced **Reliability**, **Availability**, **Efficiency, and cost savings** from Integrated Power & Steam Distribution Network, Load Management, and Spare Part Management
- Diversified customers, power plant profile, and source of fuel

5 Strategic Move as PTT Flagship to become major power generation player in Thailand

- GPSC Growth Strategy to expand customers in Maptaphut area and add other IU customers

Potential Synergies and Diversification

The Combination of 2 High Performance Companies

ENGIE Glow	GPSC
High performance organization	Growth Organization
High margin SPP firm contract	Power Flagship of PTT
Lower cost of fuel (coal)	Opportunities for new investments
High Experienced Operator- SPP Pioneer	Strong Business Development team

Better Electricity and Steam Demand Management

Spare Part Management (shared spare parts among plants reduce cost of spare part)

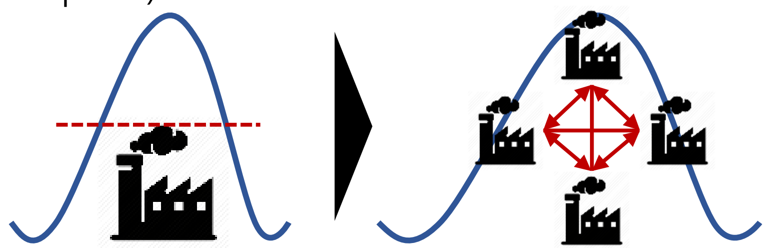
SG&A Saving, Operating & Maintenance Saving (+-250 MB per year)

Potential Synergies and Diversification

Integrated combined power plant network within the same area enables GPSC to achieve <u>better operating performance</u>

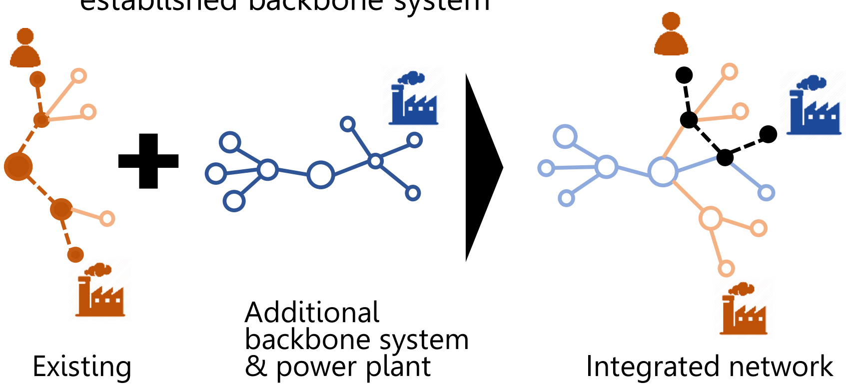
Higher Reliability

- Better Load Management (shifting loads between plants)



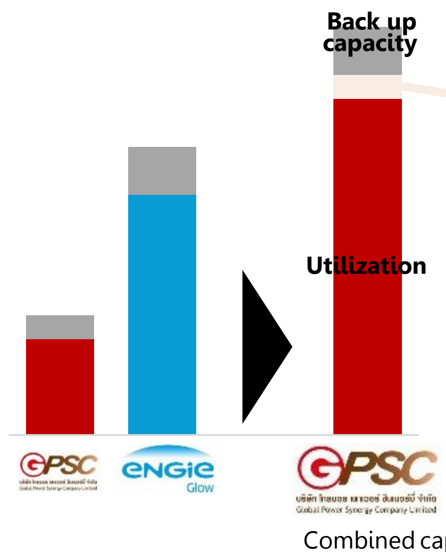
Higher Availability

- More integrated power plant network under a well-established backbone system



Higher Efficiency

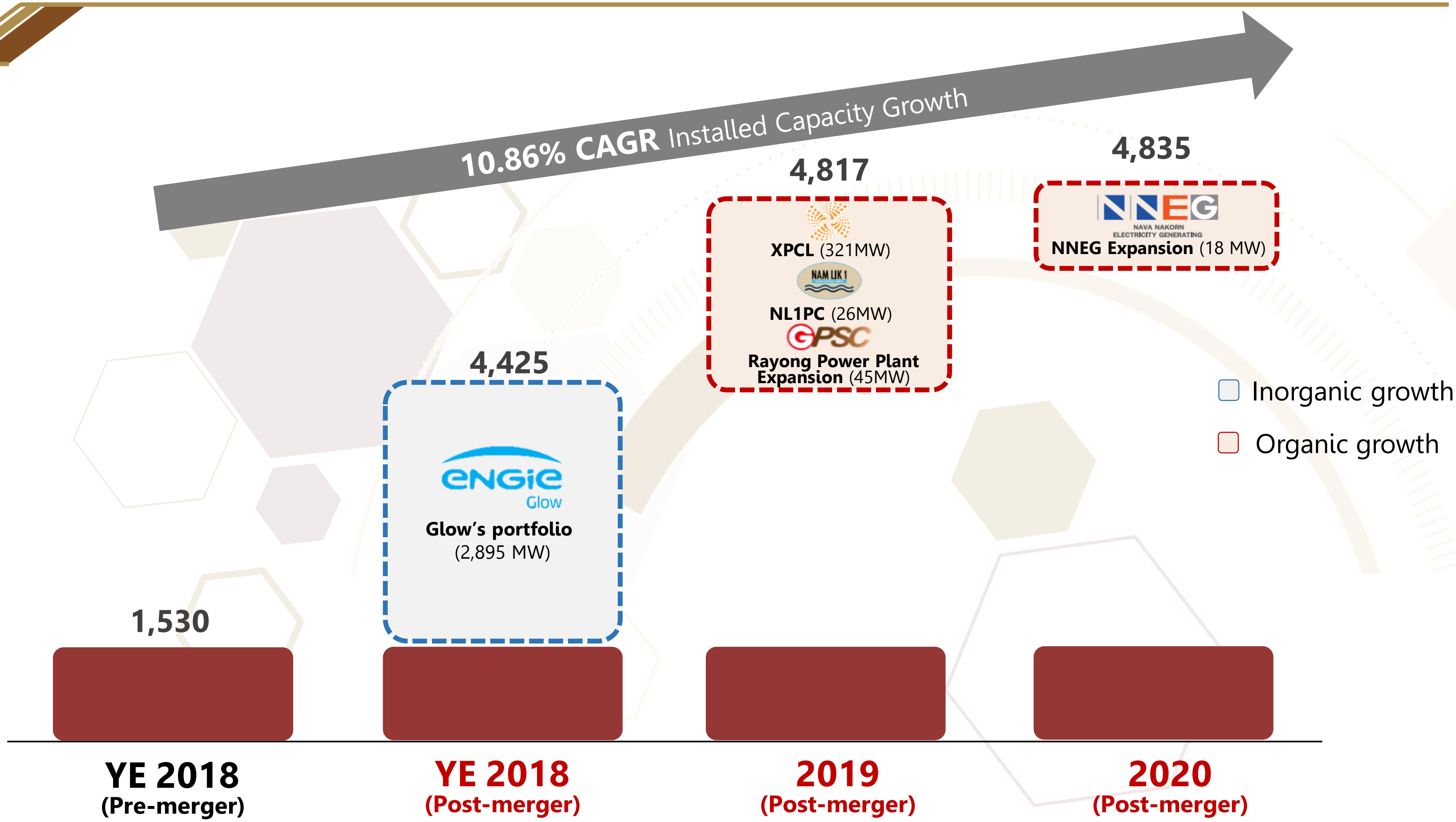
- Capacity Sharing
- Heat rate improvement and transmission loss reduction



<u>Additional capacity</u>

1. Acquire more customers to generate higher revenue
2. Investment Savings from building new CUP-4 Phase II

GPSC pre and post-merger Equity MW Growth

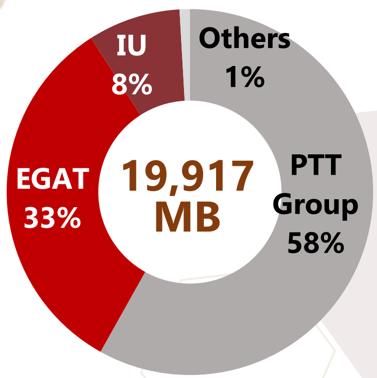


Equity Capacity	**1,530 MW**	**4,425 MW**	**4,817 MW**	**4,835 MW**
Installed Capacity	**3,148 MW**	**6,355 MW**	**7,750 MW**	**7,810 MW**
	14 Plants	**14 Plants**	**16 Plants**	**16 Plants + Expansion**

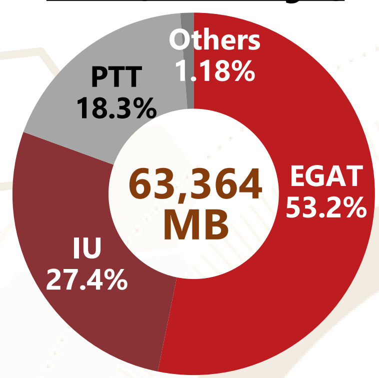
Potential Synergies and Diversification

Volume sales by customer FY 2017 (MB)

GPSC

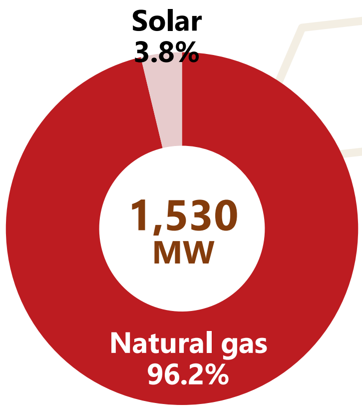


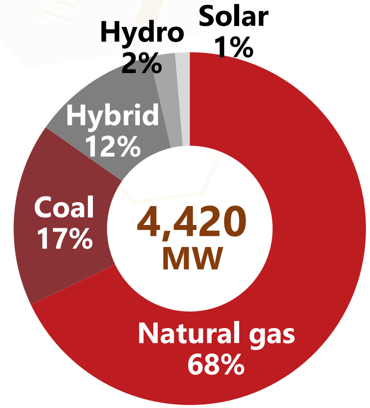
GPSC (Post-merger)



GPSC will **diversify customer profile from rely mainly on PTT Group customers to have more proportion of EGAT and IU customers.** This is in line with GPSC's growth strategy to acquire more IU customers in Thailand.

Portfolio by source of fuel (MW)



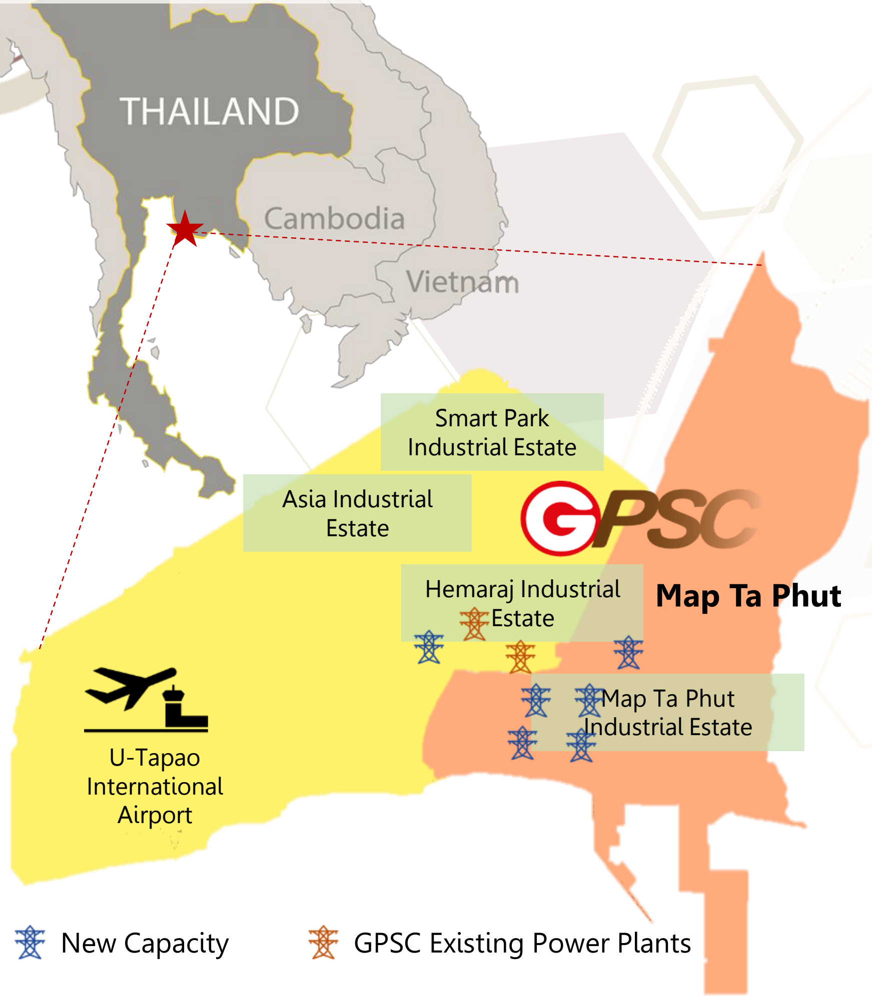


GPSC's **source of fuel will be more diversified and less focus on Natural gas.** As a result, cost of fuel will be less volatile from change in natural gas price.

Note: total MW and volume sales based on current operation as of Q1/18

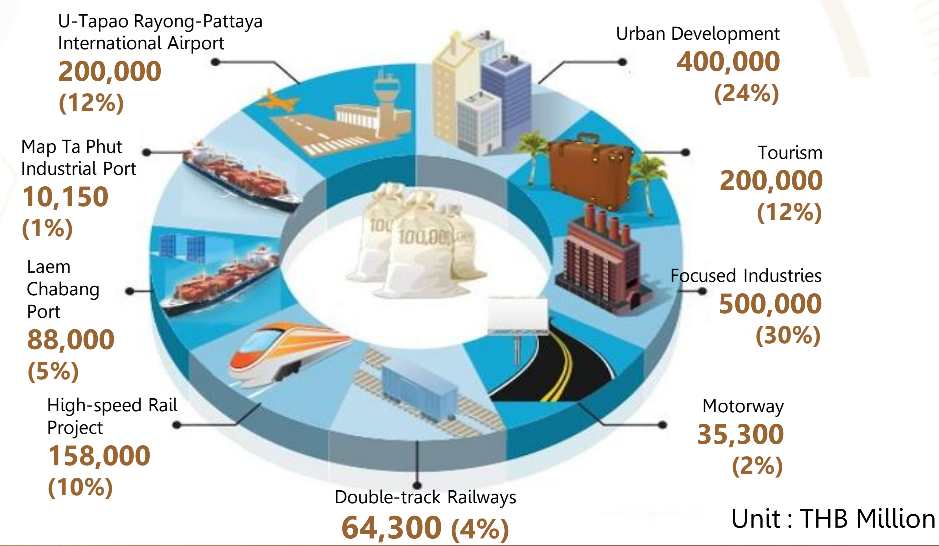
GPSC to be strategic location to support growth in EEC or power generation player in Thailand

Maptaphut is the strategic location for GPSC & PTT Group, which will be the **center of Thailand productivity growth** and benefit from the tailwind of **Eastern Economic Corridor (EEC)** infrastructure investment



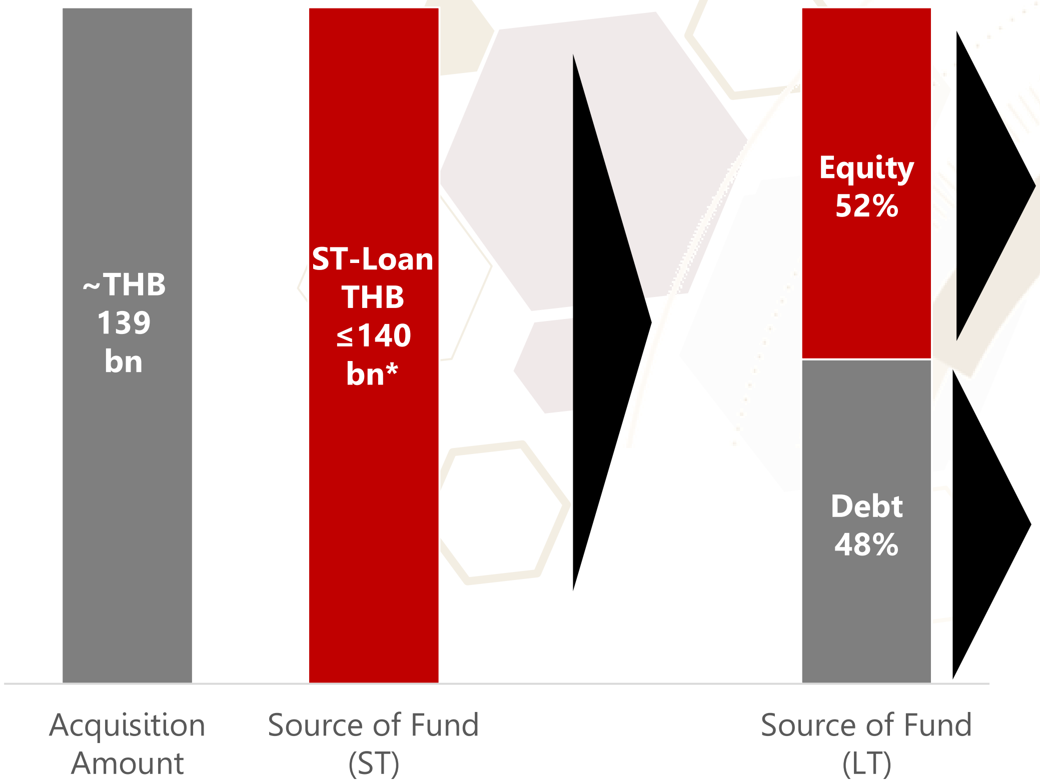
- Map Ta Phut industrial area is the **largest petrochemical complex in Thailand** and positions to be the largest petrochemical clusters in Southeast Asia
- Up to THB1.7 trillion investments on infrastructure by 2023 investing in deep sea port, double track railways, high speed train lines
- BOI **investment continues to rise** in Eastern Area
- Smart Park Industrial Estate in Map Ta Phut prepares 1,500 rais of land in industrial area for new investments in EEC together with Hemaraj Rayong also **preparing to facilitate new EEC projects**

EEC infrastructure investment in 5 years



Source of Funds for Share Purchase Transaction

Source of Fund



The Capital Restructuring Plan

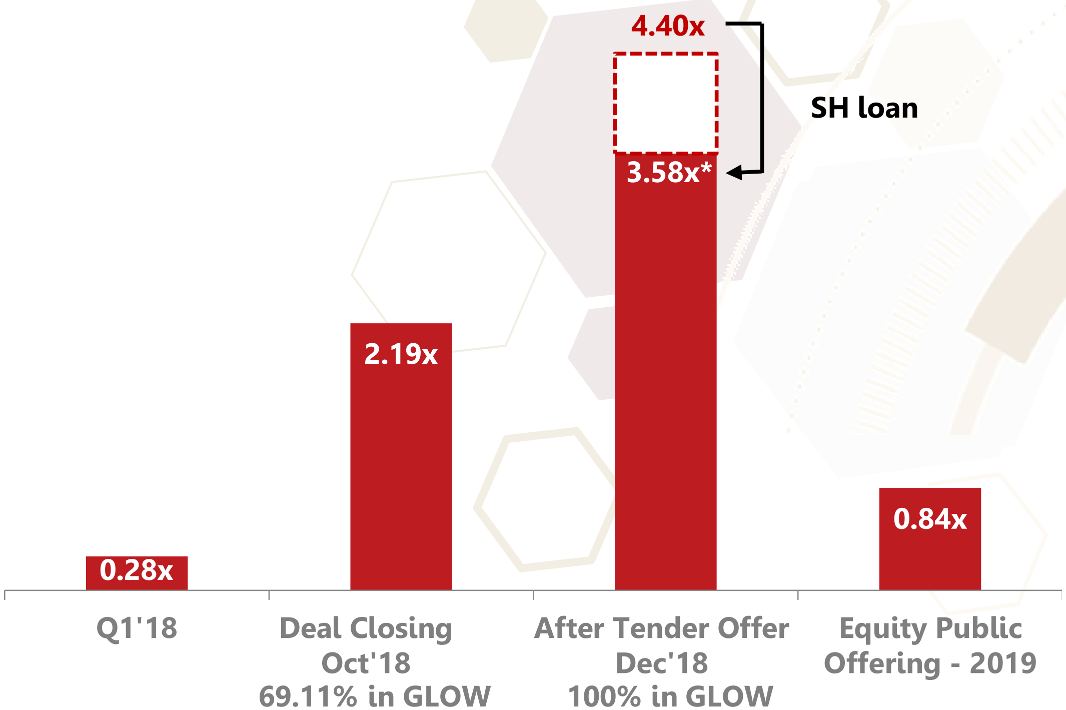
- Shareholders' meeting within April 2019 to consider:
- Capital increase not exceeding THB 72,800 million (52% of Acquisition amount)

- Issuing the debentures / long term loan or other financial instruments in money market THB 67,200 million (48% of acquisition amount)
- Repay short-term loan

*the source of fund decreased in the amount equivalent to the amount of the dividend paid per share should GLOW pay the dividend prior to the fulfilment of the condition precedent.

Well-managed debt profile and continuous deleveraging

Net Debt/ Equity ratio**
(Times)



- After incurring short-term loan to fund the share purchase transaction, <u>Net D/E ratio will increase to 3.58 times once in Dec'18.</u>
- After the capital restructuring plan, GPSC will repay short-term loan with debentures / long-term loan, equity injection, and net dividend payment from GLOW
- Estimated net D/E ratio will decrease to less than 1 time in 2019
- GPSC will also use its strong operating cash flow after acquisition to repay remaining debt

*D/E formula per covenant that excludes SH loan
** Will be further subject to Purchase Price Allocation

Post-merger Integration Plan

GPSC's Three Strategic Pillars
- Inorganic Growth
- Organic Growth
- Innovative Renewable

Leadership & People
- Management capability
- HR processes
- Key stakeholders

Culture
- Corporate and personal values
- Interpersonal relationships
- Decision making process
- Conflict resolution
- Resistance to change

Organizational Structure & Processes
- Organizational structure and process
- Customer relationship
- Communication strategy

Integration Plan/ Communication and Engagement

Working team of GPSC and GLOW

- Integration steering committee
- Corporate Plan & Corporate BD

- Supply, Commercial & Market
- Production
- Safety, Security, Health and Environment
- Finance, Accounting & Tax
- Human Resources
- Information Technology

- Communication Management Office

GPSC
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Global Power Synergy Public Company Limited

2017 and Q1 2018 Highlights

GROWTH
Becoming an Innovative Global Power Company

- Acquired **GLOW** to become **Thailand's biggest Small Power Producer** of 2,301 equity MW.
- Signed MOU with to develop **smart city** inside Chiangmai University and designed machine for a **lithium-ion battery pilot plant** has already done. The plant is expected to commercialize at the end of 2019.

SUSTAINABILITY
Awarded TPM Excellence Award Category A

- GPSC is the first power generator in Thailand that received **TPM Excellence Award Category A in 2018** by Japan Institute of Plant Maintenance (JIPM), one of the most reliable institution in Japan. To confirm the company's ability to increase capacity, reduce cost, and managing safety and environment with high standard.
- Responsibility towards the **environmental, social and governance, simultaneously with the creation of economic returns** to ensure sustainable growth and the efficiency in managing the supply chain risks.

GROWING PROFIT WITH SUSTAINABILITY AND CONTROL

PROFIT
18% Increase in Net profit yearly

- **GPSC's 2017 net profit of THB 3,175 million** increased by THB 475 million or 18% due to the rise in sales volume at Rayong Plant and IRPC-CP with lower natural gas price.
- **GPSC's Q1/18 net profit of THB 922 million** increased by THB 200 million or 28% QoQ due to **the rise in sales to EGAT from IRPC-CP**, the efficient cost management in electricity and steam production from Cogeneration, and the rise in revenue of Sriracha power plant.

CONTROL
3 Projects in progress meet milestone as planned

- **Nam Lik1**, **Xayaburi and CUP4** which are under construction are expected to **COD within 2019.**
- All the projects are closely monitored to meet the milestones.

Q1/18 Revenue of THB 5,716 million, increased 18% QoQ

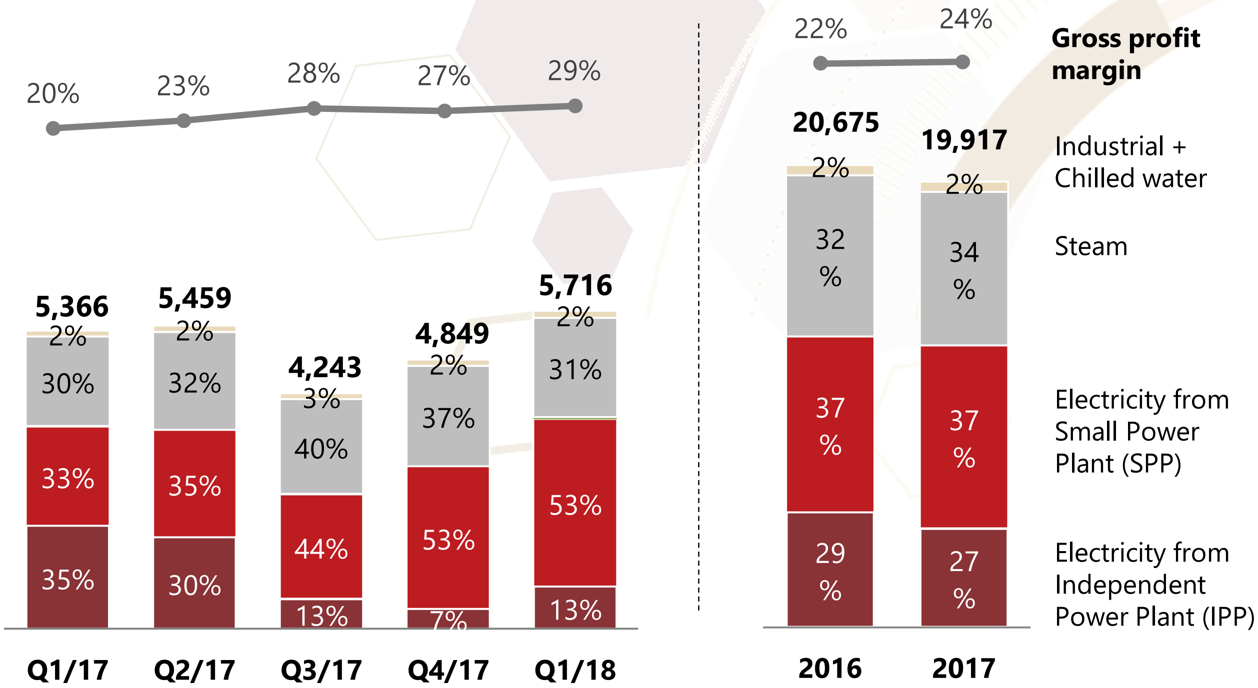
Quarterly and yearly revenue

(THB Million)

Quarter-on-quarter
▲Rev.+867 / 18%
▲GPM +2%

Year-on-year
▲Rev. +350 / 7%
▲GPM +9%

12 Months
▼Rev. -758 / 4%
▲GPM +2%



Q1/18 VS Q4/17 (QoQ)

- **Operating revenue** in Q1/18 was THB 5,716 million increased by THB 867 million or 18% from Q4/17 due to the first full quarter of IRPC-CP full capacity operation (Phase 1 & 2) and higher Availability Payment (AP) from Sriracha power plant after resuming from planned maintenance in Q4/17.

Q1/18 VS Q1/17 (YoY)

- **Operating revenue** in Q1/18 increased by THB 350 million or 7% from Q1/17 due to the first full quarter that IRPC-CP started selling electricity to EGAT together with higher demand at Rayong plant as well as higher Ft.

2017 VS 2016 (12M)

- **Operating revenue** in 2017 decreased by THB 758 million or 4% mainly due to the reserved shutdown of Sriracha Power Plant per EGAT's dispatch instruction.

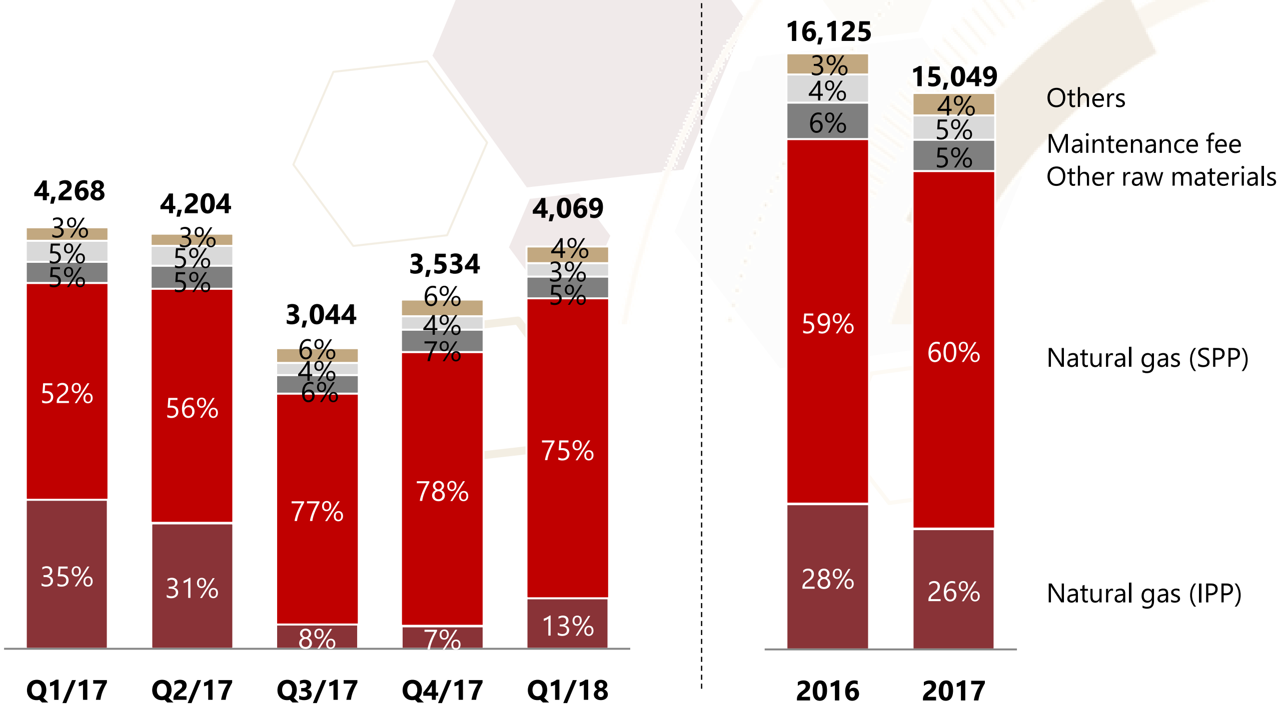
*Remark: *Revenue from Electricity (IPP) includes income from electricity sales and finance lease. Electricity (VSPP) is too small to be recognized in the graph.*

GPSC

Costs of sales and services have increased in Q1/2018 due to higher cost of natural gas

Quarterly and yearly cost of sales and services (THB Million)

Quarter-on-quarter	Year-on-year	12 Months
+535 / 15%	-199 / 5%	-1,076 / -7%



Q1/18 VS Q4/17 (QoQ)

- **Cost of sales and services** in Q1/18 was THB 4,069 million increased by THB 535 million or 15% mainly from higher cost of natural gas of IRPC-CP that started full phases operation for the first full quarter.

Q1/18 VS Q1/17 (YoY)

- **Cost of sales and services** decreased by THB 199 million or 5% mainly due to lower cost of natural gas of Sriracha Power Plant according to lower electricity dispatch volume per EGAT's instruction.

2017 VS 2016 (12M)

- **Cost of sales and services** in 2017 decreased by THB 1,076 million or 7% due to lower natural gas price; lower sales volume of Sriracha Power Plant from reserved shutdown.

*Remark: *Cost of sales and services excludes depreciation and amortization expenses.*

SPP is GPSC's main and prospering profit generator

Quarterly and yearly gross profit and gross profit margin

(THB Million, %)

Quarter-on-quarter

GP+332 / 25%

GPM +2%

Year-on-year

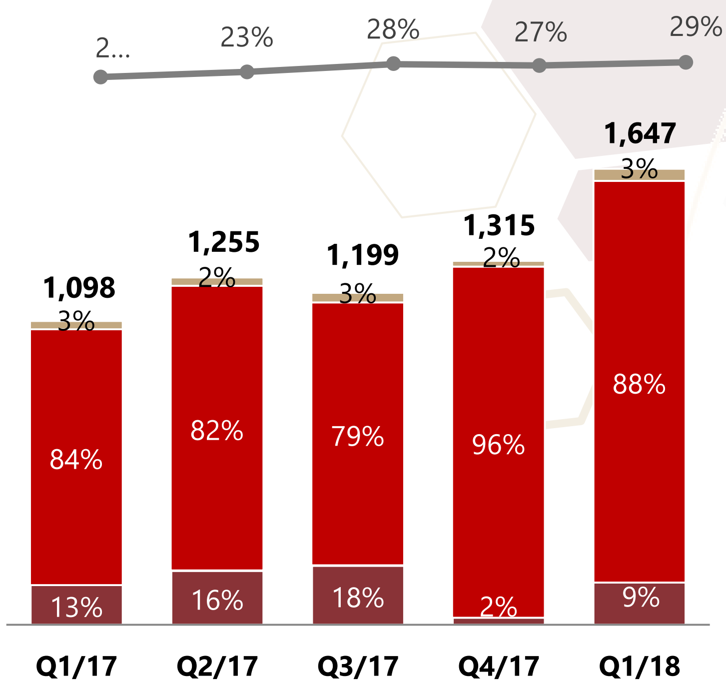
GP+549 / 50%

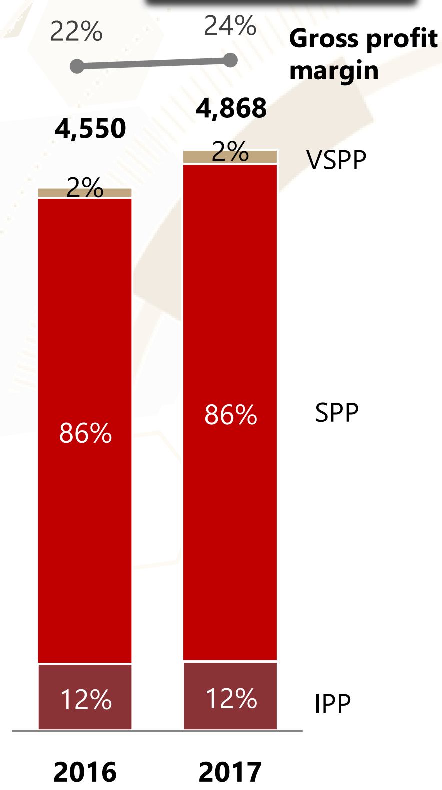
GPM +9%

12 Months

GP + 318 / 7%

GPM +2%





Q1/18 VS Q4/17 (QoQ)

- **Gross profit** in Q1/18 was THB 1,647 million increased by THB 332 million or 25% from Q4/17 mainly due to the first full quarter of IRPC-CP full capacity operation also, higher AP and EP of Sriracha Power Plant.
- **Gross profit margin** increased by 2% in line with gross profit.

Q1/18 VS Q1/17 (YoY)

- **Gross profit** increased by THB 549 million or 50% due to the first full operation quarter of IRPC-CP full phases operation and higher demand at Rayong plant
- **Gross profit margin** increased by 9% in line with gross profit.

2017 VS 2016 (12M)

- **Gross profit** in 2017 was THB 4,868 million increased by THB 318 million or 7% due to lower natural gas price and lower maintenance cost.
- **Gross profit margin** also increased by 2%

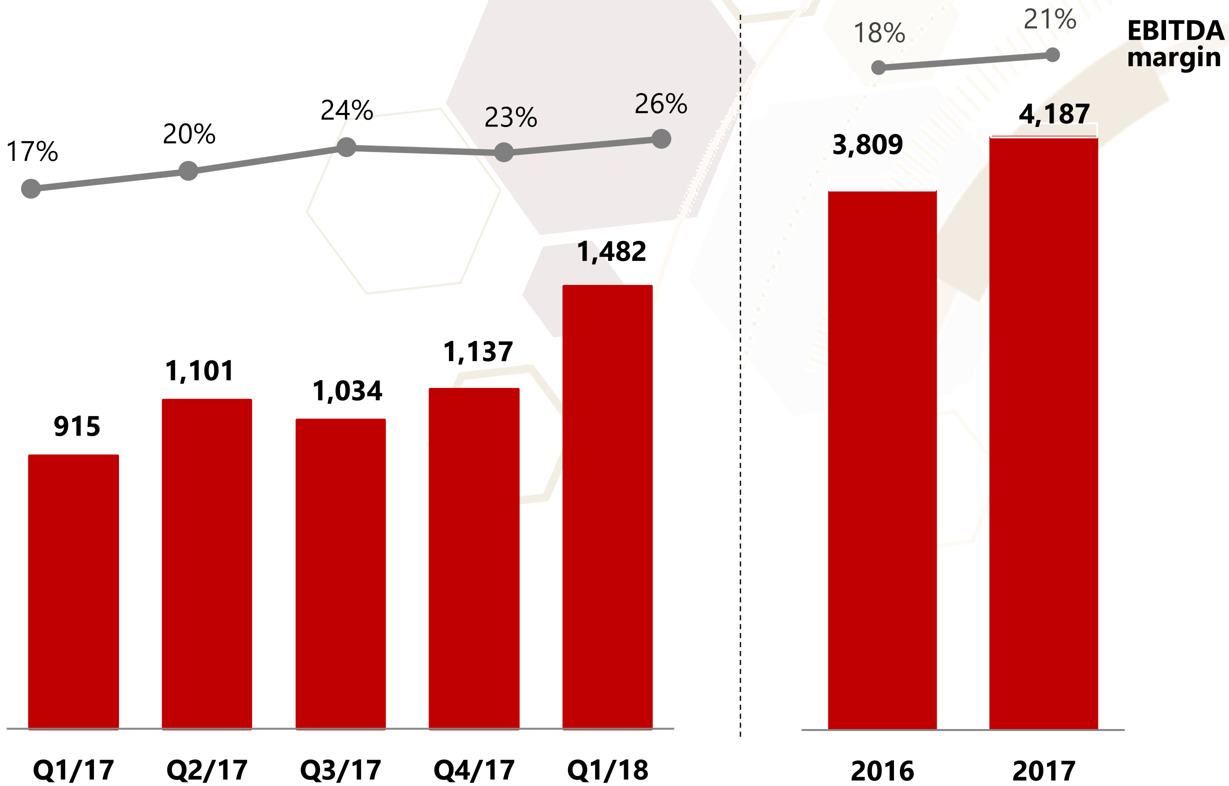
*Remark: *Gross profit margin does not include depreciation and amortization expenses.*

EBITDA increased by 30% QoQ and 62% YoY

Quarterly and yearly EBITDA and EBITDA margin

(THB Million, %)

Quarter-on-quarter	Year-on-year	12 Months
+345 / 30%	+567 / 62%	+ 378 / 10%



Q1/18 VS Q4/17 (QoQ)

- **EBITDA** in Q1/18 was THB 1,482 million increased by THB 345 million or 30% from Q4/17 mainly due to the rise in operating income from IRPC-CP and Sriracha Power Plant.

Q1/18 VS Q1/17 (YoY)

- **EBITDA** increased by THB 567 million or 62% from Q1/17 due to the rise in operating income from IRPC-CP and Rayong plant.

2017 VS 2016 (12M)

- **EBITDA** in 2017 was THB 4,187 million increased by THB 378 million or 10% due to the rise in sales volume, lower natural gas price and, lower SG&A.

Net profit grew 28% QoQ from higher sales volume and increase in AP from Sriracha

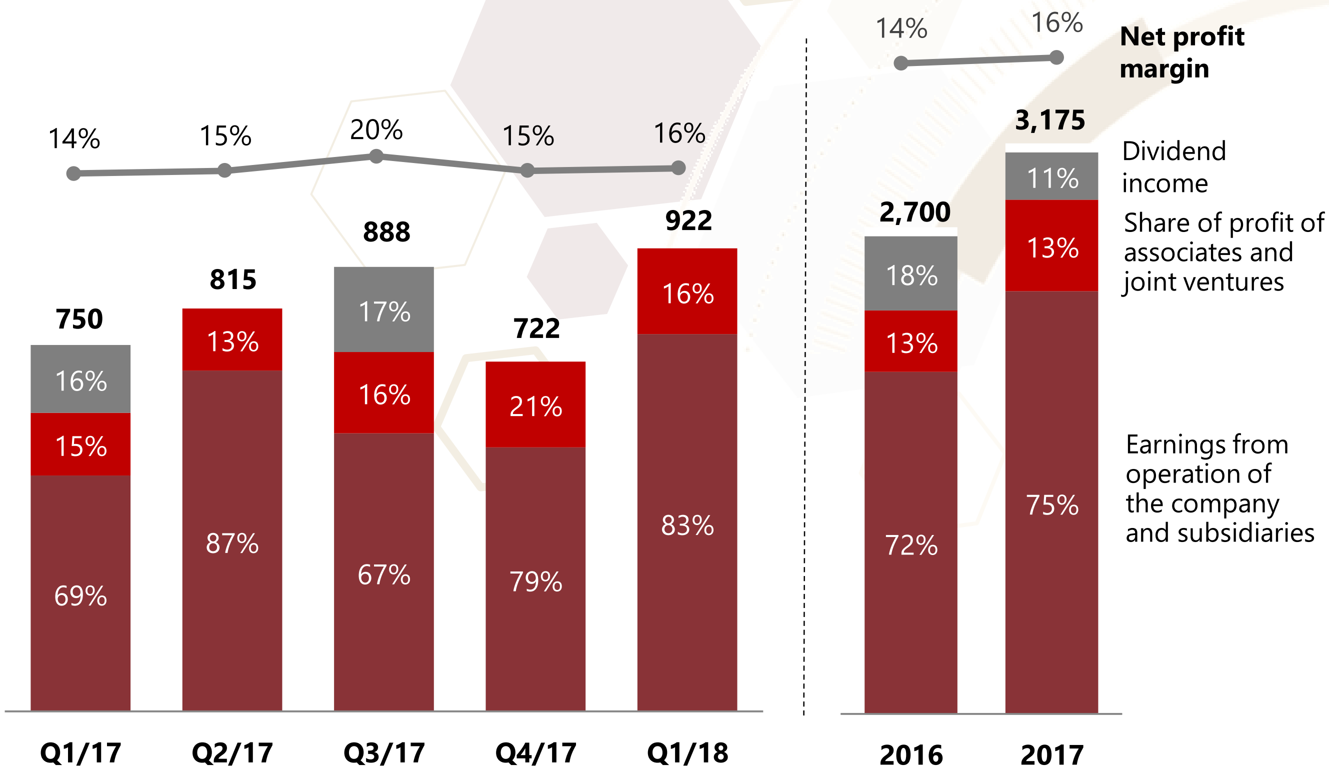
Quarterly and yearly net profit and net profit margin

(THB Million, %)

Quarter-on-quarter +200 / 28%

Year-on-year +172 / 23%

12 Months +475 / 18%



Q1/18 VS Q4/17 (QoQ)

- **Net profit** in Q1/18 was THB 922 million increased by THB 200 million or 28% resulted mainly from higher income from higher sales volume of IRPC-CP and the increase in AP from Sriracha plant.

Q1/18 VS Q1/17 (YoY)

- **Net profit** increased by THB 172 million or 23% even though the company did not receive dividend income from RPCL as in Q1/17. Main reasons came from the full operation of IRPC-CP, the rise in demand of Rayong plant together with higher Ft rate.

2017 VS 2016 (12M)

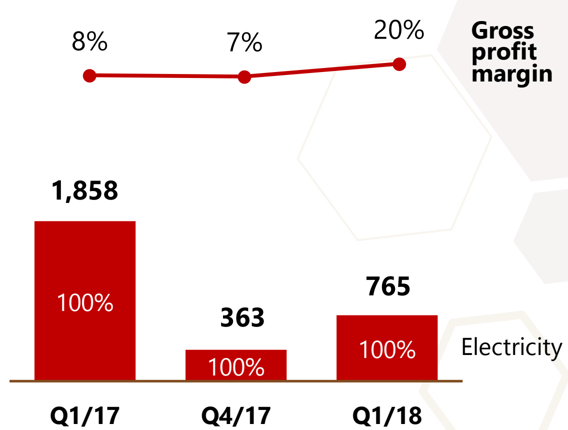
- **Net profit** increased by THB 475 million or 18% due to the rise in sales volume at Rayong Plant and IRPC-CP with lower natural gas price. Also, supported by higher share of profits from NNEG (COD Q3/16) and BIC2 (COD Q3/17).

Quarterly Revenue and GPM by Major Plants

Sriracha Plant (THB Million, %)

Year-on-year
- ▼ Rev. -1,093 / 59%
- ▲ GPM +12%

Quarter-on-quarter
- ▲ Rev. +402 / 111%
- ▲ GPM +13%

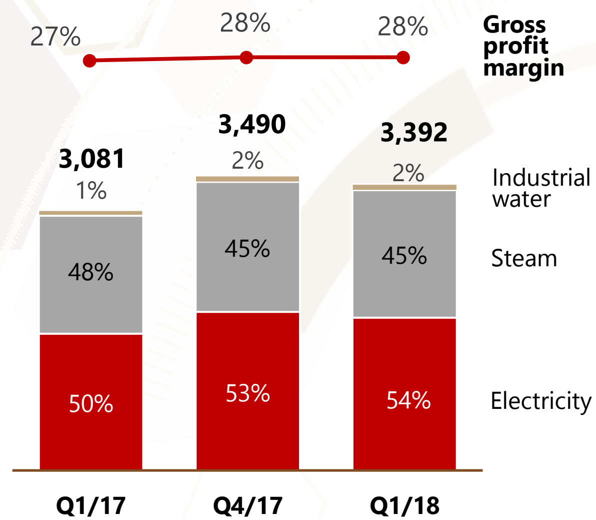


- **QoQ**: GPM increased in line with total revenue due to planned maintenance in Q4/17 together with higher Weight factor in Q1/18.
- **YoY**: GPM increased contrast to total revenue due to lower operating hour maintenance cost which in line with lower electricity dispatched volume per EGAT's instruction.

Rayong Central Utility Plants (THB Million, %)

Year-on-year
- ▲ Rev. +311 / 10%
- ▲ GPM +1%

Quarter-on-quarter
- ▼ Rev. -98 / 3%
- GPM unchanged

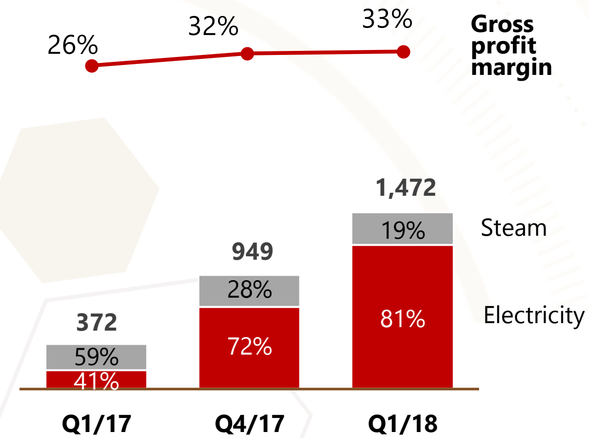


- **QoQ**: GPM remained the same while total revenue dropped due to planned maintenance in Q1/18.
- **YoY**: GPM rose in line with total revenue due to higher electricity and steam sales volume together with higher Ft rate in Q1/18 when compare to Q1/17.

IRPC-CP Plant (THB Million, %)

Year-on-year
- ▲ Rev. +1,100 / 296%
- ▲ GPM +7%

Quarter-on-quarter
- ▲ Rev. +523 / 55%
- ▲ GPM +1%



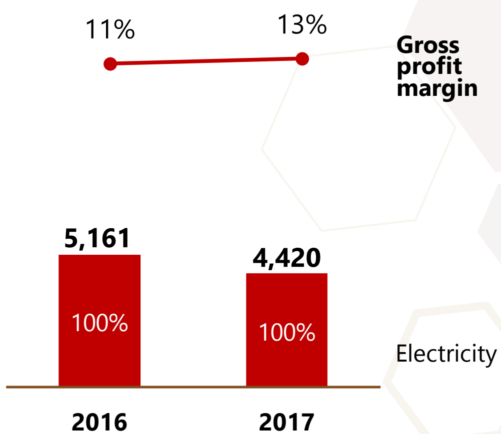
- **QoQ**: GPM rose in line with total revenue due to the first full quarter of full capacity operation (IRPC-CP Phase 1 & 2) in Q1/18.
- **YoY**: GPM rose in line with significant rise of total revenue since, IRPC-CP started selling electricity to EGAT for the first full quarter after COD of Phase 2 in Nov'17.

Yearly Revenue and GPM by Major Plants

Sriracha Plant
(THB Million, %)

12M

▼ Rev. -741 / -14%
▲ GPM +2%

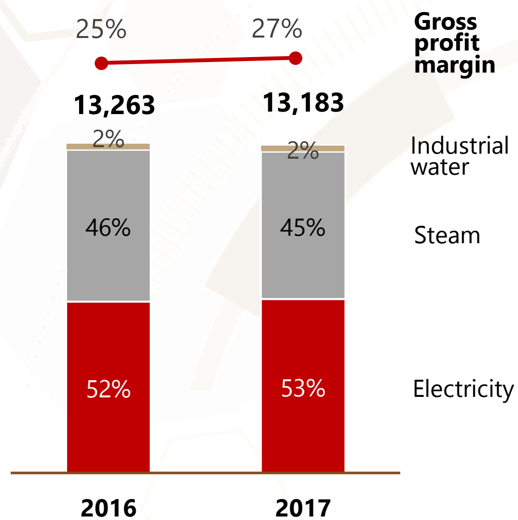


■ **12M**: GPM increased in contrast to total revenue due to the drop in operating hour maintenance cost from reserved shutdown.

Rayong Central Utility Plants
(THB Million, %)

12M

▼ Rev. -80 / -1%
▲ GPM +2%

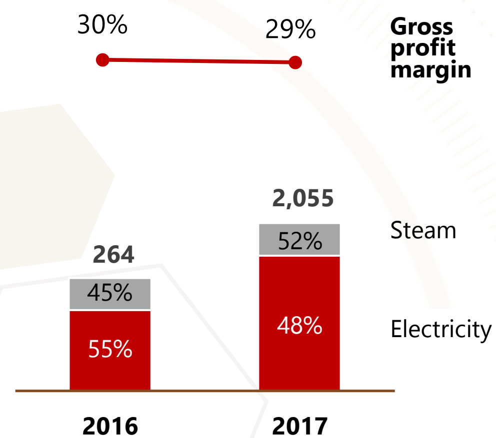


■ **12M**: GPM increased while total revenue declined due to with lower natural gas price.

IRPC-CP Plant
(THB Million, %)

12M

▲ Rev. +38 / +2%
▼ GPM -1%



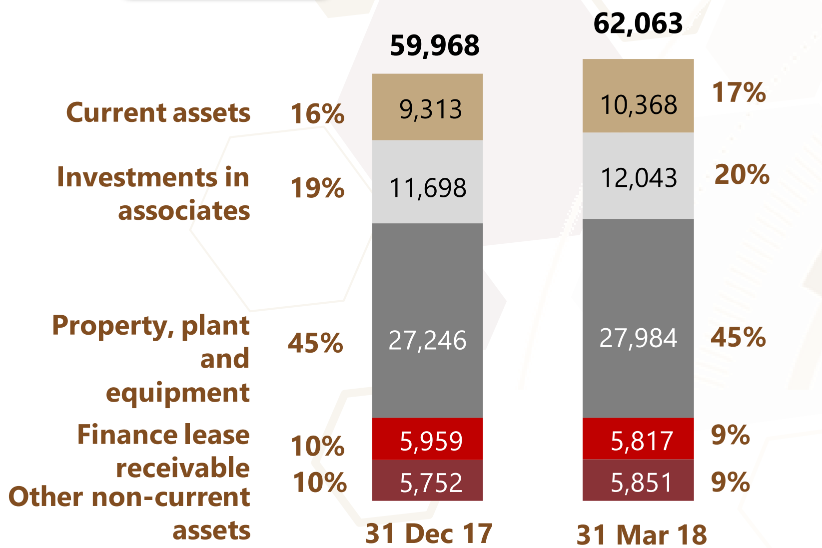
■ **12M**: GPM dropped in contrast to total revenue due to the shutdown of major customer and the shutdown of IRPC-CP for commissioning between Phase1&2 while maintenance cost rose from scheduled maintenance.

Summary of financial position of GPSC and its subsidiaries

Total Assets
(THB Million)

Year-on-year

+2,095 / 4%

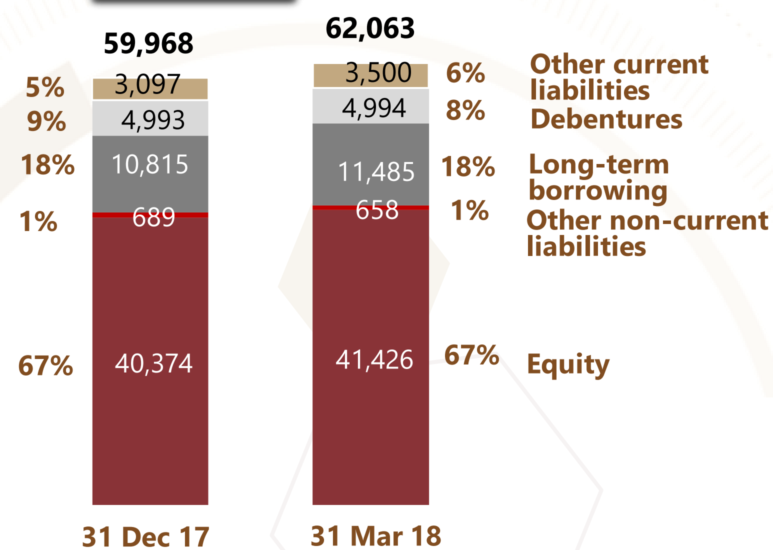


- Total assets were THB 62,063 million, increased by THB 2,095 million or 4% from 31 Dec 17.
- The increase was mainly from increases in cash & cash equivalent from operation and PPE from land & asset under construction of CUP-4 project.

Total Liabilities & Shareholders equity
(THB Million)

Year-on-year

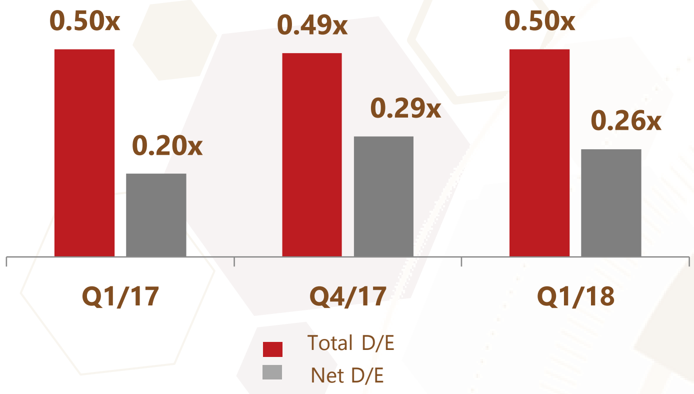
+2,095 / 4%



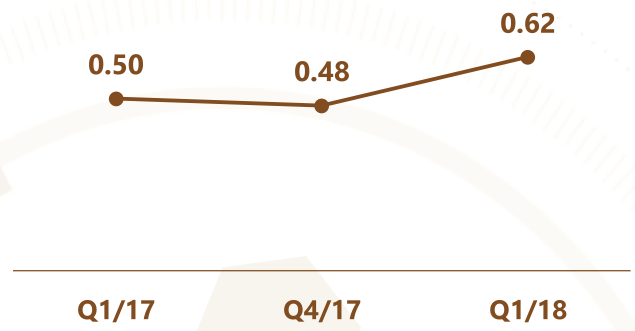
- Total liabilities were THB 20,637 million increased by THB 1,042 million or 5% mainly from long-term loan of IRPC-CP.
- Equity were THB 41,426 million increased by THB 1,052 million or 3% mainly from an increase in the unappropriated retained earnings.

Key financial ratios support GPSC's strong financial position

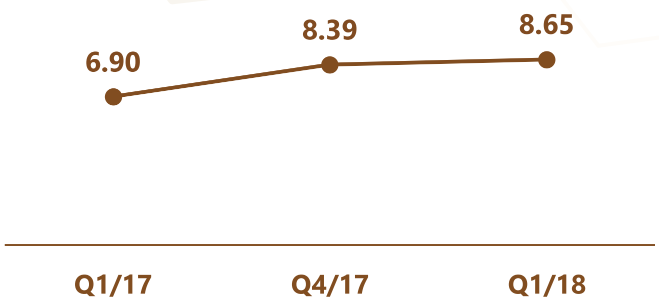
Total D/E and Net Debt/ Equity ratio
(Times)



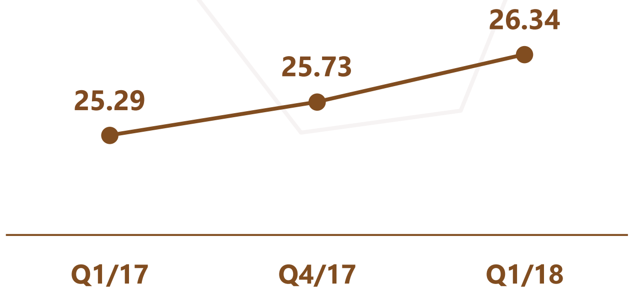
Earning per share (EPS)
(Baht/share)



ROE
(%)



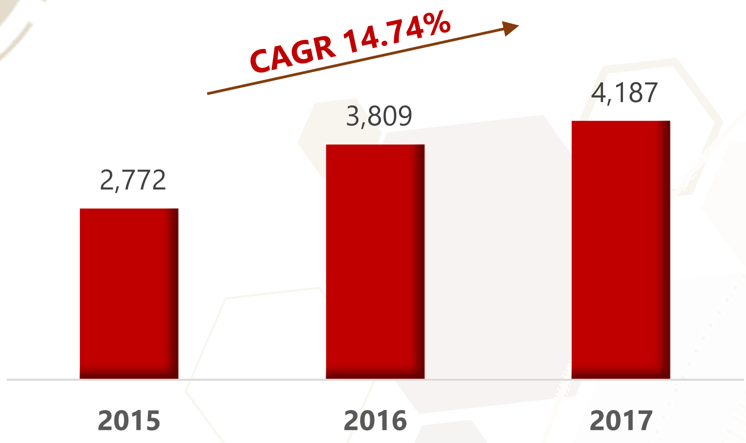
Book value per share (BVPS)
(Baht/share)



Constantly Improving Financial Performance

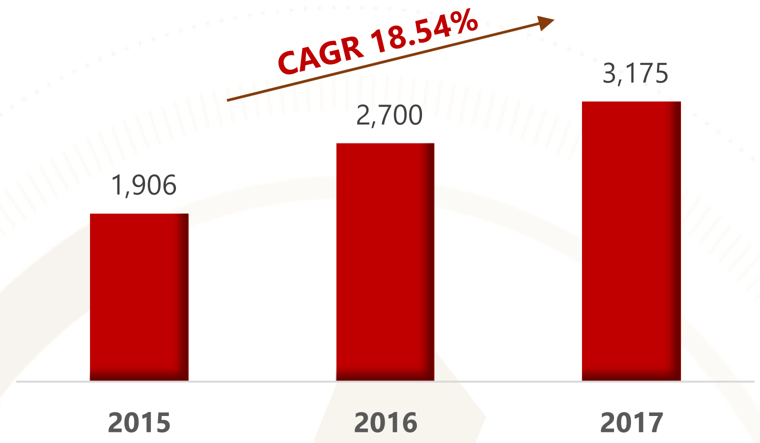
EBITDA

(THB Million)

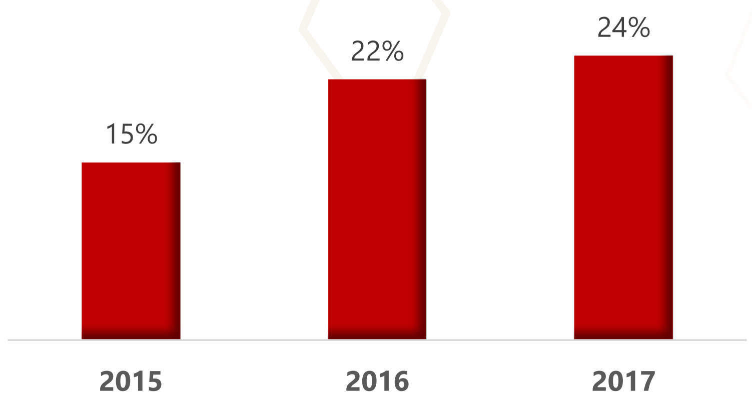


Net Profit

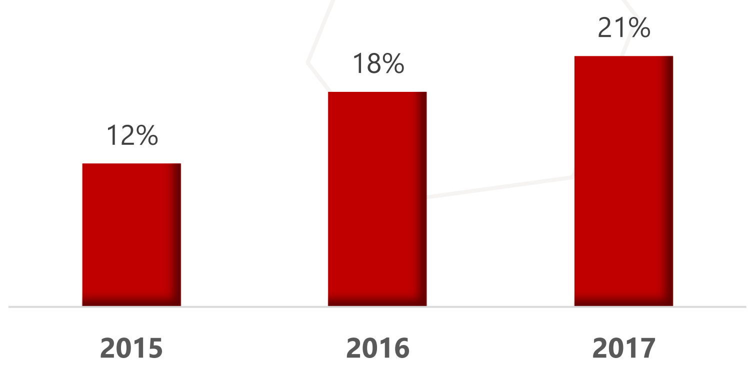
(THB Million)



Gross Profit Margin (%)

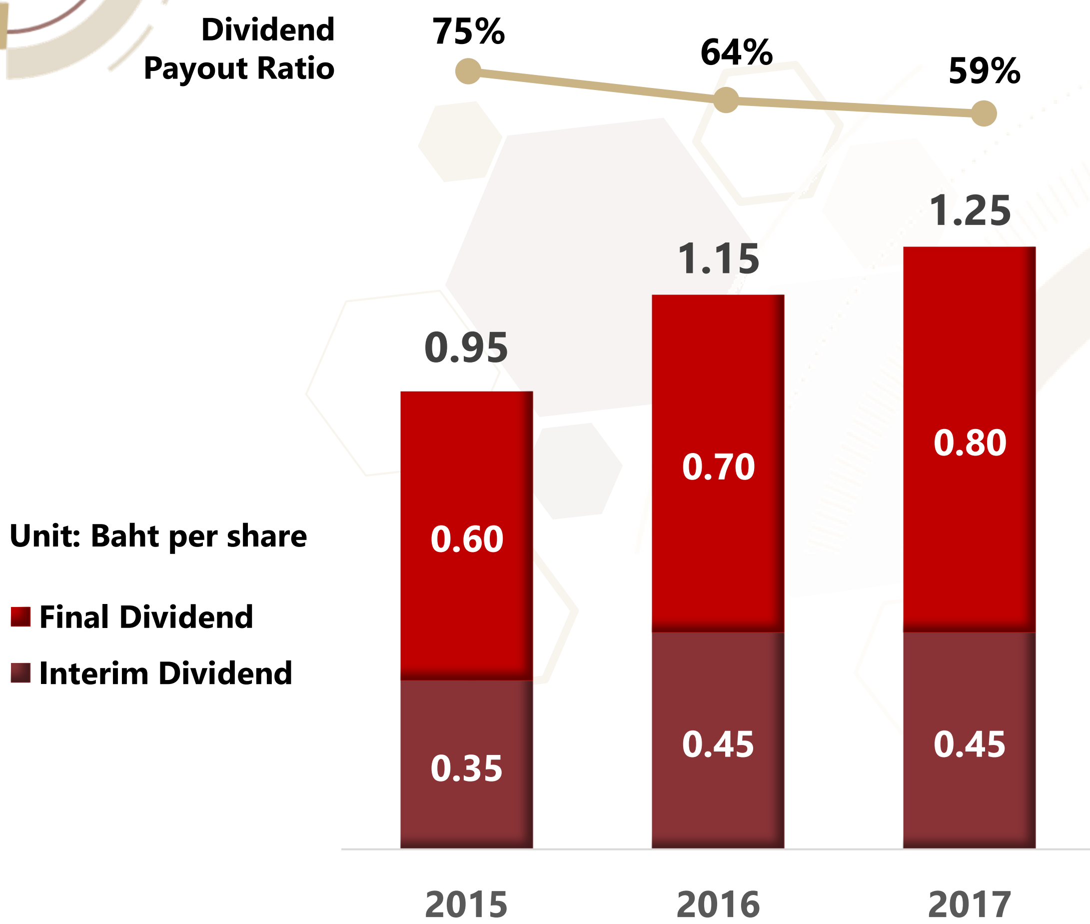


EBITDA Margin (%)



Note:
1) EBITDA margin = EBITDA / Revenue 2) Gross profit margin = Gross profit / revenue

2017 dividend payout ratio is 59% of FY2017 net income



- On 12 February 2018, BOD passed a resolution for the payment of **dividend for 2017 at Baht 1.25 per share** which is higher than 2016 dividend, resulting from the better operating results.
- The **dividend per share for 2H/17 is 0.80 Baht**
- The Record Date will be on 28 February 2018 for the right to receive the dividend.
- The dividend payment date will be on 20 April 2018 **after obtaining approval from 2018 AGM.**

- **Dividend Policy :**
  Minimum of 30% of net income according to a financial statement, after deductions of tax, reserve capital requirement (with additional conditions)

*Remark: *Dividend yield calculated from Accumulated dividend declared amounts for the last 12 months/Stock closing price on the period end date*

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

- Introduction to GPSC
- Thailand Power Industry Overview
- GPSC's Growth Strategy
- Financial Performance
- **New Projects under Construction**

Nam Lik 1 Power Company Limited (Lao PDR)

Type:
Run-of-River Hydropower

Electricity:
65 MW

SCOD:
Q1 2019

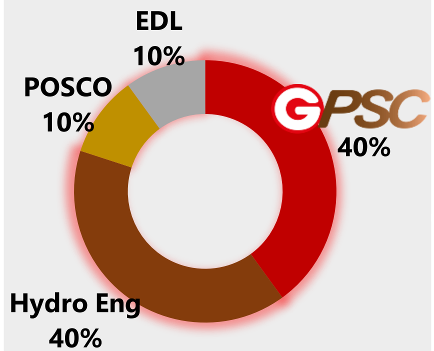
Progress YE2017:
76%

Progress 1Q2018:
86%

Equity Investment :
137 M USD

D/E:
7:3

Shareholding:



Progress Update:

- Construction progress of the project as appraised by technical advisor was 86.3 %, more than the plan at 84.2 %. When comparing with the end of Quarter 4/17 at 76.0 % about 10.3 % increased as the main activities such as installation of turbine unit 1 and 2, construction of spillway gates and 115 kV transmission line were able to continue and keep up as plan schedule.

Customer:

- Electricity: EDL 63.8 MW (30 years PPA)

Xayaburi Power Company Limited (Xayaburi,Lao PDR)

Type:
Run-of-River Hydropower

Electricity:
1,285 MW

SCOD:
October 2019

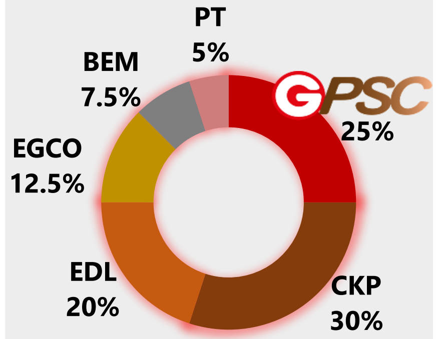
Progress YE2017:
88%

Progress 1Q2018:
92%

Total Investment :
136,751 MB

D/E:
3:1

Shareholding:



Progress Update:

- Construction progress of the project continued as planned at 91.6% as appraised by the government of Lao PDR's technical advisor. Main construction tasks such as powerhouse, intermediate block, fish ladder and 500 kV transmission line are progressed as planned.

Customer:

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

Map Ta Phut Expansion Project (Rayong)

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

CUP-1

CUP-2

CUP-3

Type:

Cogeneration

COD:

2006-2009

Shareholding:

Capacity:

CUP-1
- Electricity: 226 MW
- Steam: 890 T/h
- Industrial water: 720 Cu.m/h

CUP-2
- Electricity: 113 MW
- Steam 170 T/h
- Industrial water: 510 Cu.m/h

CUP-3
- Steam: 280 T/h
- Industrial water: 770 Cu.m/h

Contract:
- CUP-1: 10-15 years ++
- CUP-2: 15 years ++
- CUP-3: 15 years ++

Customer:
- PTT Group
- Non-PTT Group industrial customers
- EGAT

Central Utility Plant 4 (CUP-4)

Type:
Cogeneration

Electricity:
45 MW

Steam:
70 T/h

SCOD:
2019

Progress YE2017:
19%

Progress 1Q2018:
34%

Total Investment :
3,980 MB

Shareholding:

Progress Update:

- Central Utility Plant 4 (CUP-4) will provide electricity and steam to support new demand from customers in Asia Industrial Estate and nearby industrial estate. In order to increase the system's reliability and stability, the project is now in the design of connecting between CUP-4 and CUP-3 existing operation system. Currently, some of customers have signed PPA with CUP-4 while new customers is under negotiation process.
- At the end of Q1/2018. EPC started site work. The detail engineering design and equipment specification approval are on progress.

Customer:

- PTT Group
- Non-PTT Group Industrial Customers
- EGAT

Nava Nakorn Electricity Generation Expansion Project (NNEG)

Type: Cogeneration

Electricity: 60 MW

Steam: 10 T/h

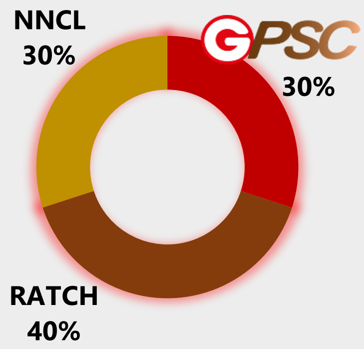
SCOD: Q3 2020

Contract: 25 years

Total Investment : 3,105 MB

D/E: 3:1

Shareholding:



Progress Update:

- MOU with Industrial Users (IUs) has been signed.
- The project is in the process of final selection for EPC and selection for the Owner's Engineer (OE) services.
- Notice to proceed (NTP) is expected to be in Q3 2018.

Customer:

Non-PTT Group Industrial Customers

THANK YOU

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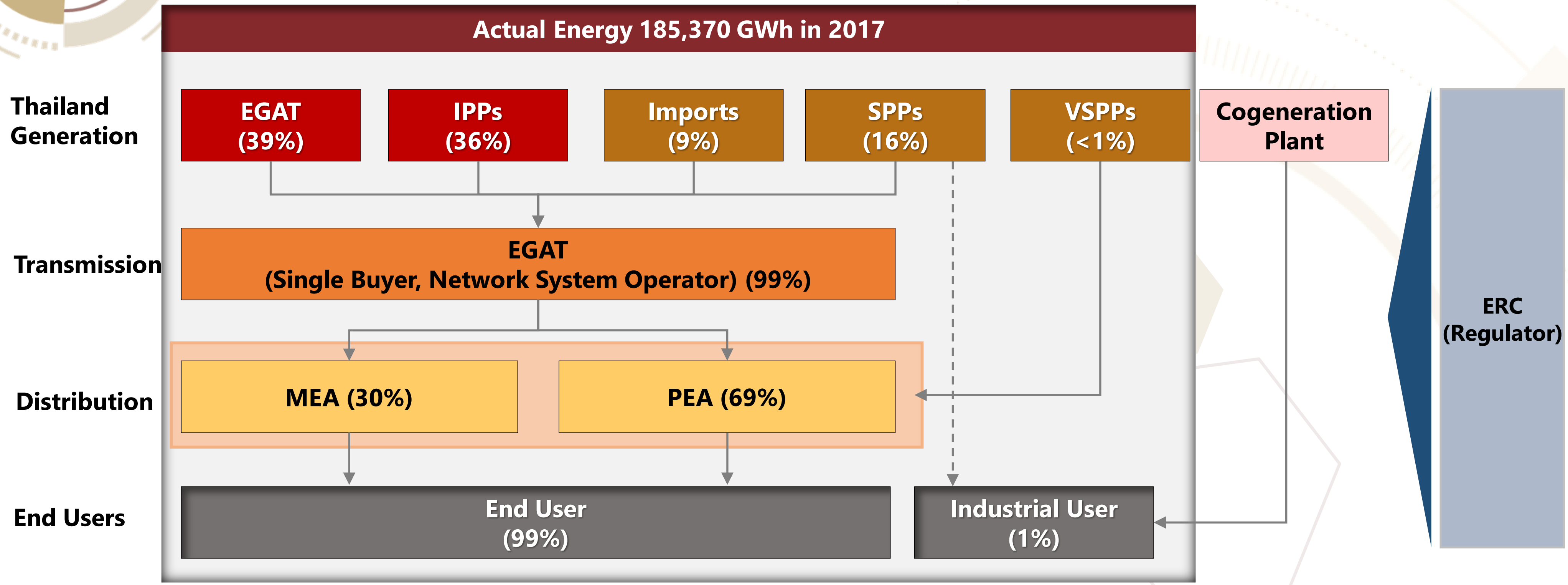
Ratios	Formula
Gross profit margin	$\frac{\text{Gross profit}}{\text{Revenue from sales of goods and service + Revenue from finance lease}}$
Net profit margin	$\frac{\text{Net profit}}{\text{Total Revenue}}$
Total Debt to Equity	$\frac{\text{Total liabilities}}{\text{Total shareholder's equity}}$
Net debt to Equity ratio	$\frac{\text{Interest bearing debts – (Cash and cash equivalents + Restricted cash + Current investments)}}{\text{Total shareholder's equity}}$
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)	$\frac{\text{Shareholder's equity for the company}}{\text{Average shareholder's equity for the company}}$

Current Power Industry Structure in Thailand

- **EGAT and IPPs dominate electricity generation market**, with the combined market share 75%.
- EGAT is the sole purchaser for almost all of the electricity generated, while VSPPs sell electricity directly to the MEA and PEA
- SPPs sell electricity to both EGAT and directly to industrial users



Definition

EGAT	Electricity Generating Authority of Thailand (State-owned entity)
IPP	Independent Power Producers
SPP	Small Power Producers
VSPP	Very Small Power Producers
MEA	Metropolitan Electricity Authority (State-owned entity)
PEA	Provincial Electricity Authority (State-owned entity)
ERC	Energy Regulatory Commission

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

Availability Payment	+	**Energy Payment**
⇩		⇩
Availability % x Availability Payment Rate (APR)		**Energy cost regarding % Dispatch 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

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)

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

Base Tariff + **Ft** + **adder**

Feed in Tariff

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

GPSC's Business Portfolio : 11 Affiliates in 4 Countries

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 ***(SCOD in 2019)***
- Electricity: 45 MW
- Steam: 70 T/h

IRPC Clean Power (SPP Firm) — 51%

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

Phase 1
Electricity: 45 MW
Steam: 170 T/h

Phase 2 ***(COD in Nov 2017)***
Electricity: 195 MW
Steam: 130 T/h

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

NNEG Expansion ***(SCOD in 2020)***
- Electricity: 60 MW
- Steam: 10 T/h

Bangpa-in Cogeneration (SPP Firm) — 25%

Phase 1
- Electricity: 117 MW
- Steam: 20 T/h

Phase 2 ***(COD 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%

(COD in Dec 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

Project COD in 2017

2018 Maintenance schedule: Sriracha and Rayong plants

Plant	Tag no.	Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			2018											
			Q1			Q2			Q3			Q4		
CUP-1	H-13701	Aux. Boiler.11		16 **1Y** 26										
	N-13901 H-13702	GTG11 HRSG11			5 **1Y** 16									
	N-13902 H-13703	GTG12 HRSG12				7 **1Y** 17								
	N-13903 H-13704	GTG13 HRSG13							7 **HG** 20 7 **3Y** 20					
	N-13904 H-13705	GTG14 HRSG14		3 **1Y** 13										
	N-13961 H-13761	GTG15 HRSG15										16 **1Y** 26		
	N-13962 H-13762	GTG16 HRSG16	21 **1Y** 31											
CUP-2	H-23701	Aux. Boiler.21							1 **1Y** 11					
	N-23901 H-23701	GTG21 HRSG21			1 **HG** 14 1 **3Y** 14									
	N-23902 H-23702	GTG22 HRSG22						10 **1Y** 20						
	N-23911	Steam Turbine21												
CUP-3	H-33701	Aux. Boiler 31								4 **1Y** 14				
	H-33711	Aux. Boiler 32										14 **1Y** 24		
	H-33712	Aux. Boiler 33									26/9 **1Y** 10/10			
SRC	11MB 1-211-SG-101	GT11 HRSG#1										15/10 – 3/12 **MO** **3Y**		
	12MB 1-211-SG-201	GT12 HRSG#2										**MO** **3Y**		
	STG	Steam Turbine 10										**MO**		

Notes Rayong Site

GTG
- HGPI 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 2nd Major Overhaul for Steam Turbine 23 days
- 2MO 2nd Major Overhaul for Steam Turbine 27 days

AB
- 1Y One Year Inspection Aux. Boiler 11 days
- 3Y Three Year Inspection Aux. Boiler 13 days

HRSG
- 1Y One Year Inspection HRSG 11 days
- 3Y Three Year Inspection HRSG 14 days

Other
- 1Y One Year Inspection NG Station Test Online
- 5Y Five Year Inspection NG Station (NDT) Online
- FO Forced Outage Depending on physical damage

Notes Sriracha Site

GTG
- 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

HRSG
- 1Y One Year Inspection HRSG 8 days
- 3Y Three Year Inspection HRSG 33 days

Other
- 1Y One Year Inspection NG Station Test Online
- 5Y Five Year Inspection NG Station (NDT) Online
- FO Forced Outage Depending on physical damage

2018 Maintenance schedule: IRPC-CP

Plant	Unit	2018			
		Q1	Q2	Q3	Q4
IRPC-CP	**Block 1**				
	CTG 21	E	A		
	HRSG 21	E	YI		
	CTG 22	E	A		
	HRSG 22	E	YI		
	STG 23				
	Block 2				
	CTG 31				
	HRSG 31		E		A
	CTG 32		E		YI
	HRSG 32	B			
	STG 33	B			
	Aux. Boiler			YI	

YI

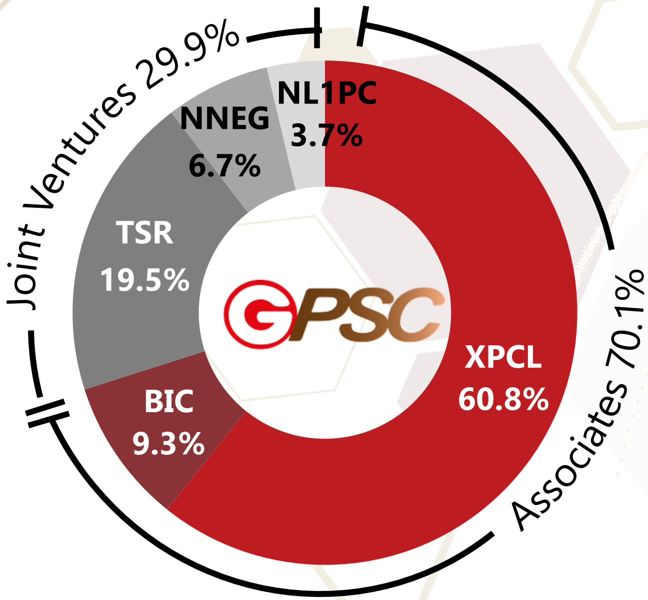
Notes

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

Investment in associates and joint ventures

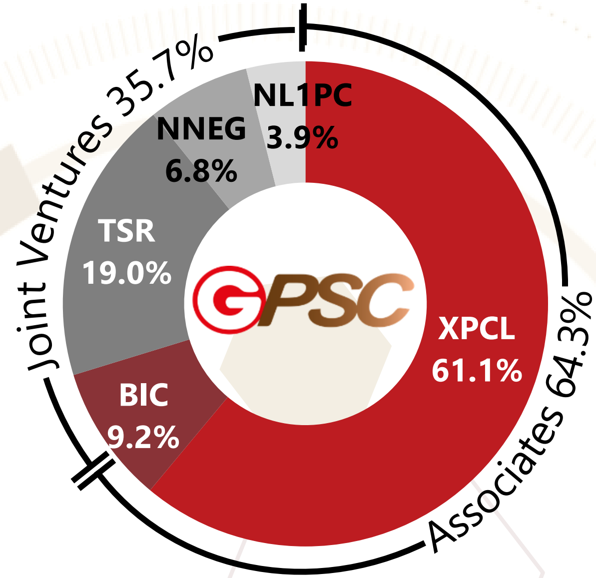
Proportion of GPSC's investment in associates and joint ventures at YE17 and Q1/18
(THB Million, %)

Investment in associates and JV at YE17



Total of THB 8,774 million

Investment in associates and JV at Q1/18



Total of THB 9,119 million

- GPSC's investment in associates and joint ventures increased from THB 8,774 million at YE17 to THB 9,119 million at Q1/18 or **approximately THB 345 million or 3.9% increase.**
- The **increase in investment in Q1/18 was mainly from the investment in XPCL which increased by THB 244 million** while the share of profit from associates and joint ventures in Q1/18 contributed to an increase in the investments for THB 152 million.

IRPC-CP has contributed largest portion of earning from operation of company and subsidiaries

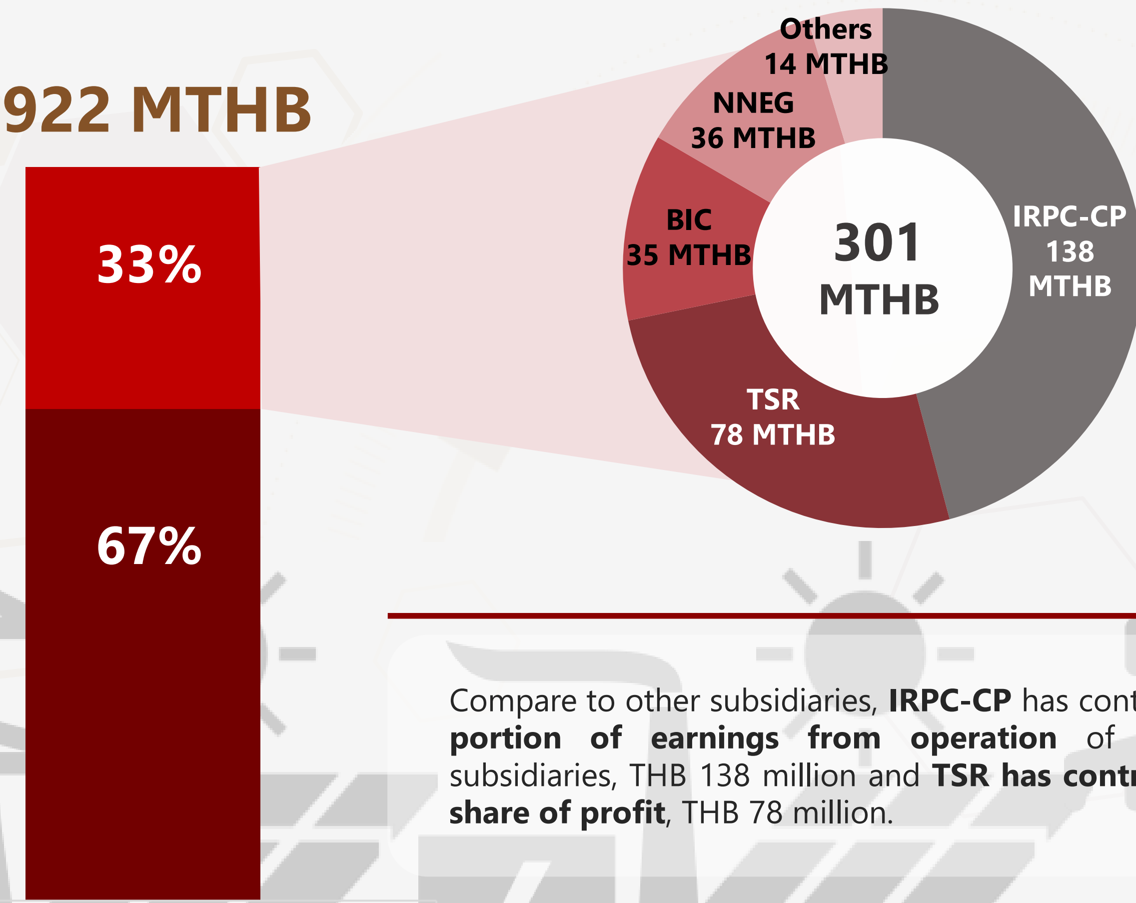
Net profit breakdown by subsidiaries

(THB Million)

Net Profit 922 MTHB

Share of profit of associates and joint ventures was 301 MTHB

Earnings from operation of the company was 621 MTHB



Q1/18 Net Profit

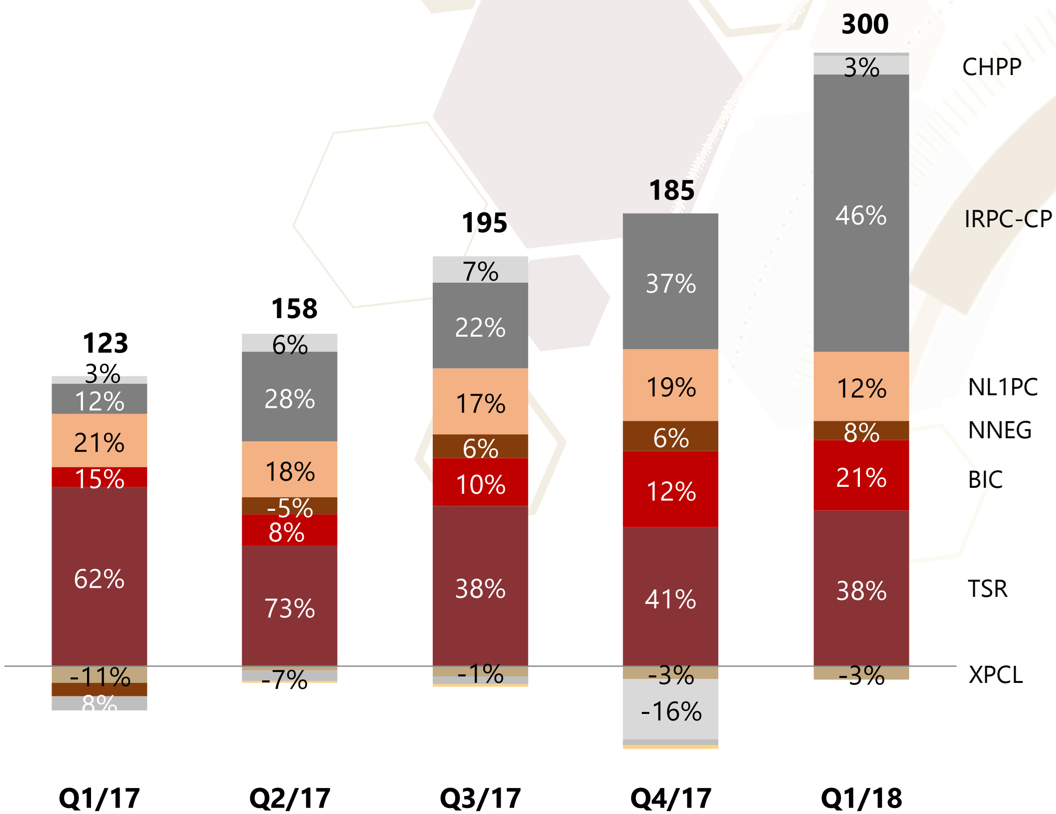
Compare to other subsidiaries, **IRPC-CP** has contributed **largest portion of earnings from operation** of company and subsidiaries, THB 138 million and **TSR has contributed largest share of profit**, THB 78 million.

Share of profits from investment

Quarterly share of profits from investment (THB Million, %)

YoY
+177 / 244%

QoQ
+115 / 62%



Q1/18 VS Q4/17 (QoQ)

- **Total share of profits** in Q1/18 was THB 300 million increased by THB 115 million or 62% from Q4/17 mainly due to the COD of IRPC-CP since Nov'17.

Q1/18 VS Q1/17 (YoY)

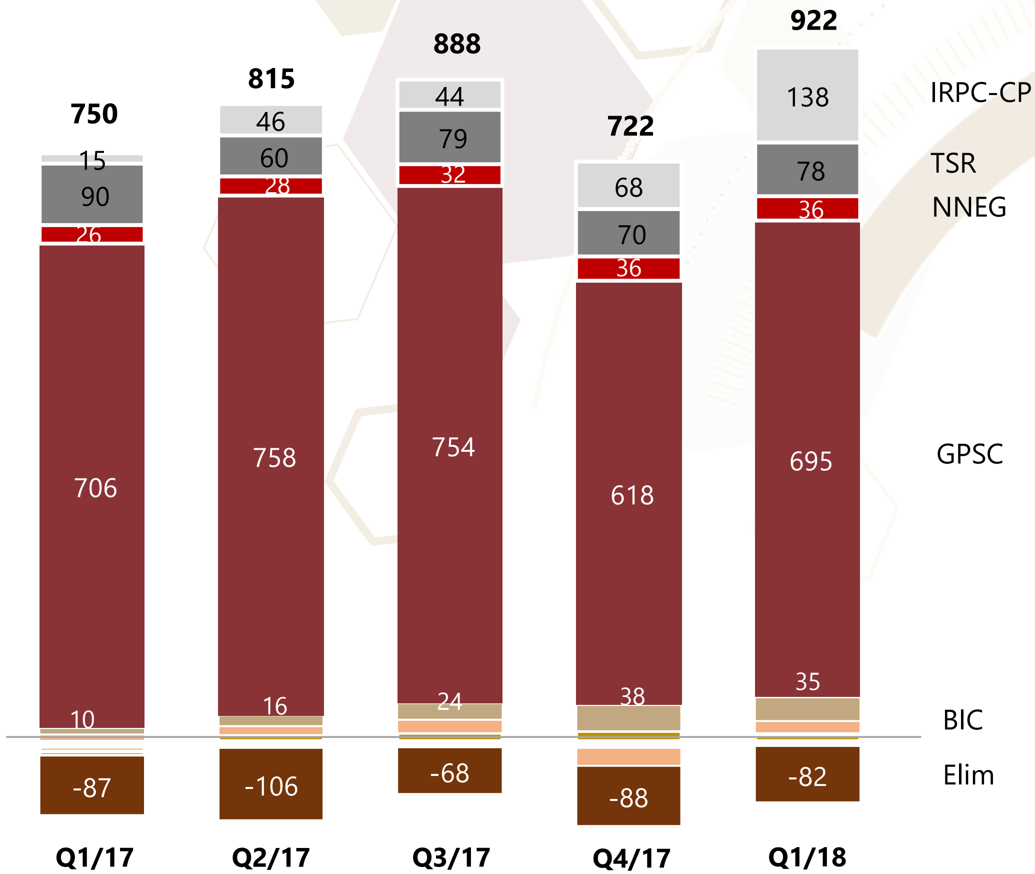
- **Total share of profits** increased by THB 177 million or 244% mainly from the COD of IRPC-CP in Nov'17 and BIC 2 in Jun'17 which contributed the share of profits for GPSC in Q1/18 for THB 123 million and THB 35 million, respectively.

Net Profit breakdown by affiliates

Net profit breakdown by affiliates (THB Million)

Year-on-year +172 / 23%

Quarter-on-quarter +200 / 28%



Q1/18 VS Q4/17 (QoQ)

- **Net profit** increased by THB 200 million or 28% from IRPC-CP operated the whole period (COD in Nov 17) and SRC maintain higher Availability rate as there was a plan maintenance in Q4/17.

Q1/18 VS Q1/17 (YoY)

- **Net profit** increased by THB 172 million or 23% due to there were plan maintenance in Q1/17 for major customers of Rayong Plants together with higher Ft rate and the COD of IRPC-CP for both phases since Nov 17.

Power Plants Portfolio of GPSC

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
IRPC-CP Phase 2	SPP	51%	195	99.4	66.3	-	2017	25-27/2044
CHPP (Solar)	VSPP	100%	5	5	-	-	2016	2041
ISP1	Solar	99%	20.8	20.6	-	-	2017	20/2037
Consolidate to Financial Statement				**1,192**	**1,493.3**	**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
BIC-2	SPP	25%	117	29.25	5		2017	25/2042
RPCL	IPP	15%	1,400	210		-	2008	25/2033
Share of Profit / Dividend Income				**338.5**	**19**			
Total operating				**1,530**	**1,512.3**	**2,080**		
UNDER CONSTRUCTION								
Rayong Expansion	SPP	100%	45	45	70	-		
NL1PC	Hydro	40%	65	26	-	-	2019	27/2044
XPCL	IPP	25%	1,285	321	-	-	2019	29/2048
NNEG Expansion	SPP	30%	60	18	5	-	2020	25/2041
Total under construction				**410**	**75**			
Total capacity				**1,940**	**1,585**	**2,080**		

Power Plants Portfolio of GLOW

Name	Installed Capacity	Equity Capacity	Steam Capacity	PPA Expiration
Current Portfolio				
Chonburi, Thailand				
Hemaraj Chonburi Industrial Estate				
Glow IPP	713 MW	677 MW	-	2028
Rayong, Thailand				
Asia Industrial Estate				
Glow Energy Solar	1.6 MW	1.6 MW	-	2037
Hemaraj Eastern Industrial Estate				
Glow SPP1	124 MW	124MW	90 Tons/hr	2021
Map Ta Put Industrial Estate				
GHECO-One	660 MW	429 MW	-	2037
Glow Phase 1	-	-	250 Tons/hr	IU only
Glow Phase 2	281 MW	281 MW	300 Tons/hr	2020
Glow Phase 4	77 MW	77 MW	137 Tons/hr	2037
Glow Phase 5	328 MW	328 MW	160 Tons/hr	IU only
Glow Energy CFB 3	85 MW	85 MW	79 Tons/hr	IU only
Glow SPP2/SPP3	513 MW	513 MW	190 Tons/hr	2024
Siam Eastern Industrial Park				
Glow SPP11 phase 1	120 MW	120 MW	-	2025
Glow SPP11 phase 2	110 MW	110 MW	-	2037
Glow SPP11 phase 3	42 MW	42 MW	-	IU Only
Attapeu, LaoPDR				
Huay Ho	152 MW	102 MW	-	2029
Total	**3,207 MW**	**2,890 MW**	**1,206 Tons/hr**	

Name	Installed Capacity	Equity Capacity	Steam Capacity	PPA Expiration
Projects under construction				
Chonburi, Thailand				
Hemaraj Chonburi Industrial Estate				
Chonburi Clean Energy	8.3 MW	2.8 MW	-	-
Rayong, Thailand				
Amata Rayong Industrial Estate				
C&I Rooftop Solar	0.87 MW	0.87 MW	-	-
Saraburi, Thailand				
Hemaraj Saraburi Industrial Estate				
C&I Rooftop Solar	1.0 MW	1.0 MW	-	-
Lemro River, Myanmar				
Lemro Hydro Power	622 MW	N/A	-	-
Total	**632 MW**	**4.67 MW**	**-**	

Sriracha Power Plant (Chonburi, Thailand)

Type:

IPP
Combined Cycle

Capacity:

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

COD:

2000

Customer:

- Electricity: EGAT
- Industrial water: Thai Oil Power

Shareholding:

Contract:

- 25 years
- End 2025

Central Utility Plants (Rayong, Thailand)

CUP-1

CUP-2

CUP-3

Type:

SPP Non-Firm Cogeneration

COD:

2006-2009

Shareholding:

Capacity:

CUP-1
- Electricity: 226 MW
- Steam: 890 T/h
- Industrial water: 720 Cu.m/h

CUP-2
- Electricity: 113 MW
- Steam 170 T/h
- Industrial water: 510 Cu.m/h

CUP-3
- Steam: 280 T/h
- Industrial water: 770 Cu.m/h

Contract:
- CUP-1: 10-15 years ++
- CUP-2: 15 years ++
- CUP-3: 15 years ++

Customer:
- PTT Group
- Non-PTT Group industrial customers
- EGAT

Combined Heat and Power Producing (CHPP) (Bangkok, Thailand)

Type:

VSPP

Combined heat and power with district cooling

Capacity:

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

COD:

- 2008
- Electric chiller Q1 2009

Customer:

Government complex

Shareholding:

GPSC 100%

Contract:

- 30 Years
- End: 2038

CHPP Solar Cooperatives (Chanthaburi, Thailand)

Type:

VSPP Solar

Capacity:

- Electricity: 5 MW

COD:

Q4 2016

Customer:

PEA

Shareholding:

Contract:

- 25 Years
- End: 2041
- Feed-in Tariff 5.66 Baht

IRPC Clean Power (Rayong, Thailand)

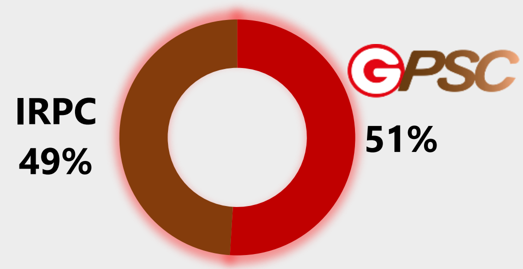
Type:

SPP Firm Cogeneration

COD:

- Phase 1 : Q4 2015
- Phase 2 : Q4 2017

Shareholding:



Electricity:

- Electricity 240 MW
- Steam 180-300 T/h

Customer:

- Electricity: EGAT 2x90 MW
- IRPC: 60 MW
- Steam: IRPC 180-300 T/H

Contract:

- EGAT: 25 years
- IRPC: 27 years

Thai Solar Renewable Company Limited (Kanchanaburi & Suphanburi, Thailand)

Type:

VSPP Solar

Capacity:

- Electricity: 80 MW

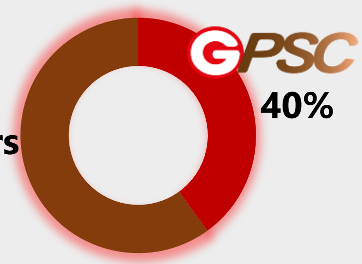
COD:

2013

Customer:

PEA

Shareholding:



Contract:

- 10 Years
- End: 2023
- Adder 6.5 Baht (for 10 years)

Nava Nakorn Electricity Generating (Pathumthani, Thailand)

NNEG
NAVA NAKORN ELECTRICITY GENERATING

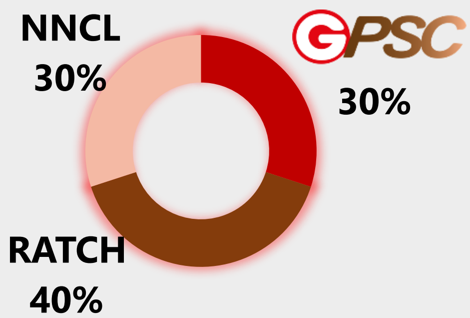
Type:

SPP Firm Cogeneration

COD:

Q2 2016

Shareholding:



Electricity:

- **Electricity 240 MW**
- **Steam 180-300 T/h**

Customer:

- **Electricity: EGAT 90 MW, IUs 27 MW**
- **Steam: IUs 20 T/h**

Capacity:

- **EGAT 25 years**

Bangpa-In Cogeneration (Ayuttaya, Thailand)

Type:

SPP Firm Cogeneration

Electricity:

(BIC 1 & BIC 2 each)
- Electricity: 117 MW
- Steam: 20 T/h

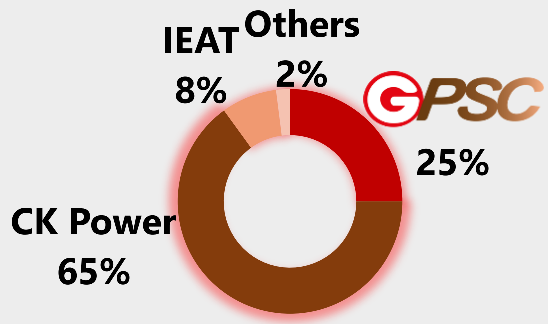
COD:

- BIC 1 : Q4 2015
- BIC 2 : Q2 2017

Customer:

- Electricity: EGAT 90 MW, IUs 27 MW
- Steam: IUs 20 T/h

Shareholding:



Capacity:

- EGAT 25 years

Ratchaburi Power (Ratchaburi, Thailand)

Type:

IPP
Combined cycle

Electricity:

- Electricity 1,400 MW

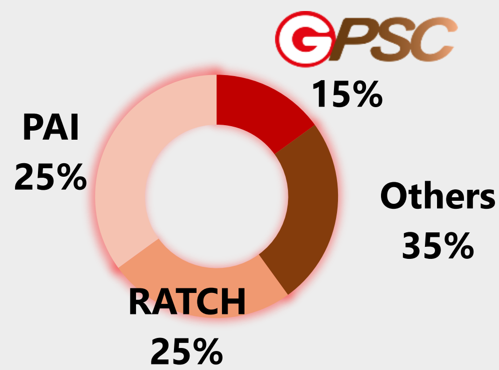
COD:

Q1 2008

Customer:

EGAT

Shareholding:



Contract:

- 25 years
- End 2033

24M Technologies (Boston, USA)

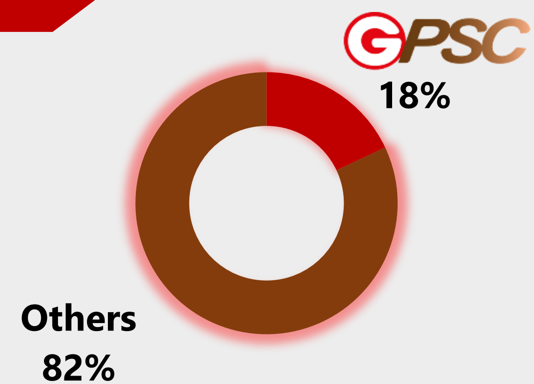
Business:

Lithium-Ion Battery (LFP) technology

Application:

Energy Storage System (ESS)

Shareholding:



Rayong Power Plant (SPP) : Revenue & GPM

Quarterly revenue & gross profit margin

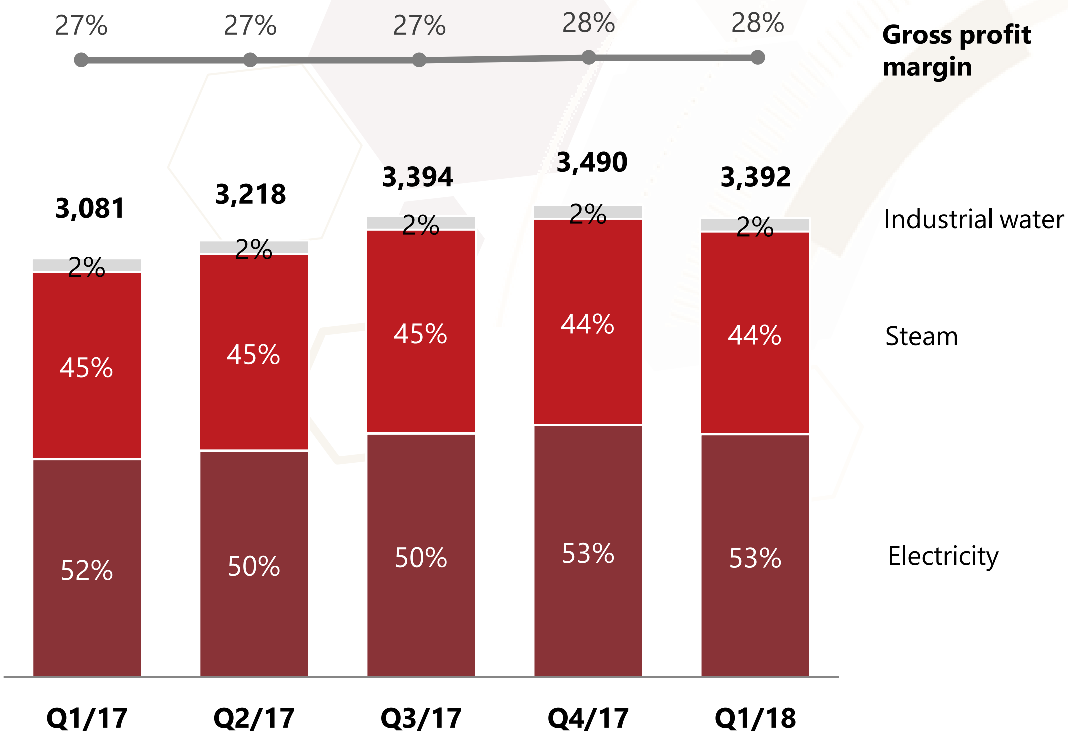
(THB Million, %)

Year-on-year

▲ Rev. +311 / 10%
▲ GPM +1%

Quarter-on-quarter

▼ Rev. -98 / 3%
GPM unchanged



Q1/18 VS Q4/17 (QoQ)

- **Total revenue** in Q1/18 was THB 3,392 million decreased by THB 98 million or 3% from Q4/17 mainly from **lower electricity sales volume exported to EGAT** due to maintenance shutdown in Q1/18.

Q1/18 VS Q1/17 (YoY)

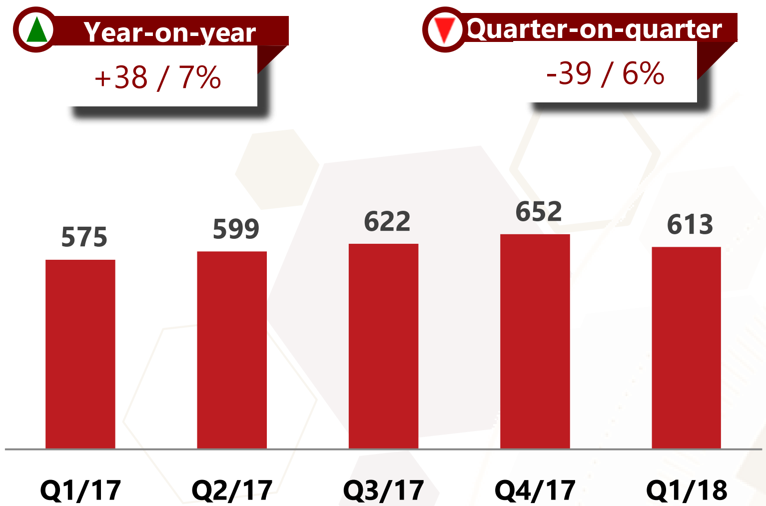
- **Total revenue** in Q1/18 increased by THB 311 million or 10% from Q1/17 due to **major customers shutdown** in Q1/17 together with **higher Ft rate** in Q1/18.

GPSC

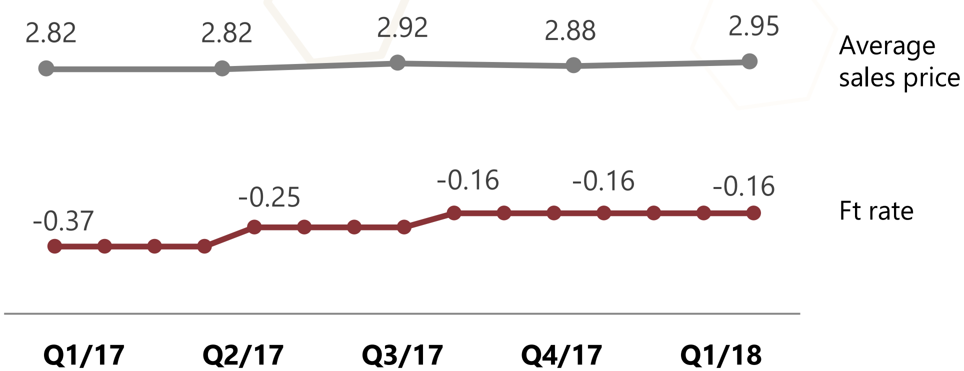
*Remark: *Revenue from Electricity (IPP) includes income from electricity sales and finance lease.*

Rayong Power Plant (SPP): Power

Quarterly power sales volume (GWh)



Quarterly average sales price & Ft rate (THB/kWh, THB)



Q1/18 VS Q4/17 (QoQ)

- **Volume** decreased by 39 GWh or 6% due to lower electricity sales volume exported to EGAT as a result of maintenance shutdown in Q1/18.
- **Price** slightly increased by 0.07 Baht per kWh or 2%.

Q1/18 VS Q1/17 (YoY)

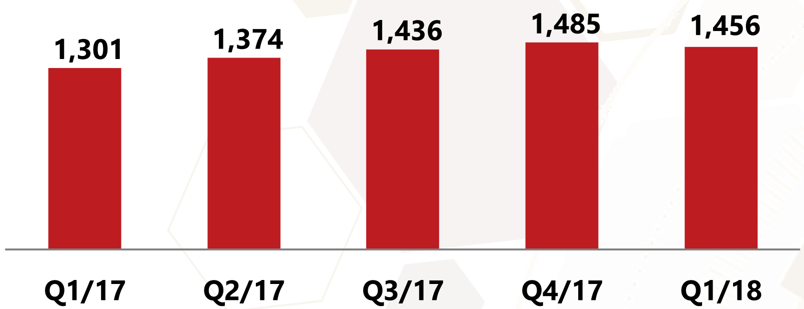
- **Volume** increased by 38 GWh or 7% due to major customers shutdown in Q1/17.
- **Price** increased by 0.13 Baht per kWh or 5% in line with higher Ft.

Rayong Power Plant (SPP): Steam

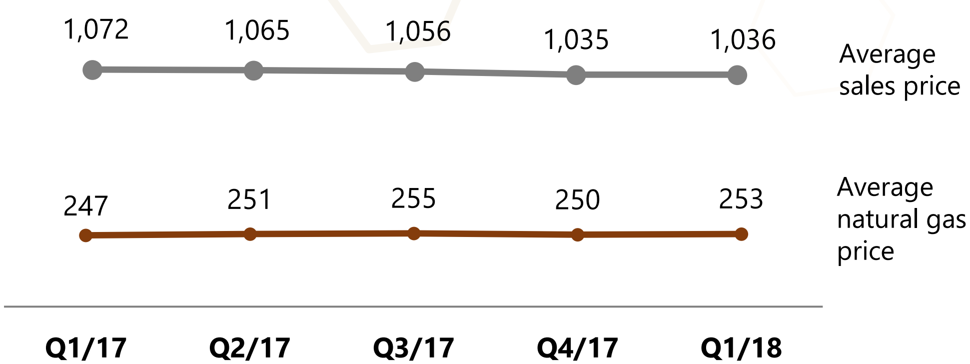
Quarterly steam sales volume ('000 tons)

Year-on-year
+155 / 12%

Quarter-on-quarter
-29 / 2%



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



Q1/18 VS Q4/17 (QoQ)

- **Volume** decreased by 29 thousand tons or 2% due to lower demand from customer.
- **Price** slightly increased by 1 Baht per ton or 0.1% in line with higher natural gas price.

Q1/18 VS Q1/17 (YoY)

- **Volume** increased by 155 thousand tons or 12% due to major customers shutdown in Q1/17.
- **Price** decreased by 36 Baht per ton or 3% since there is a fixed income when sales volume increase, price decrease.

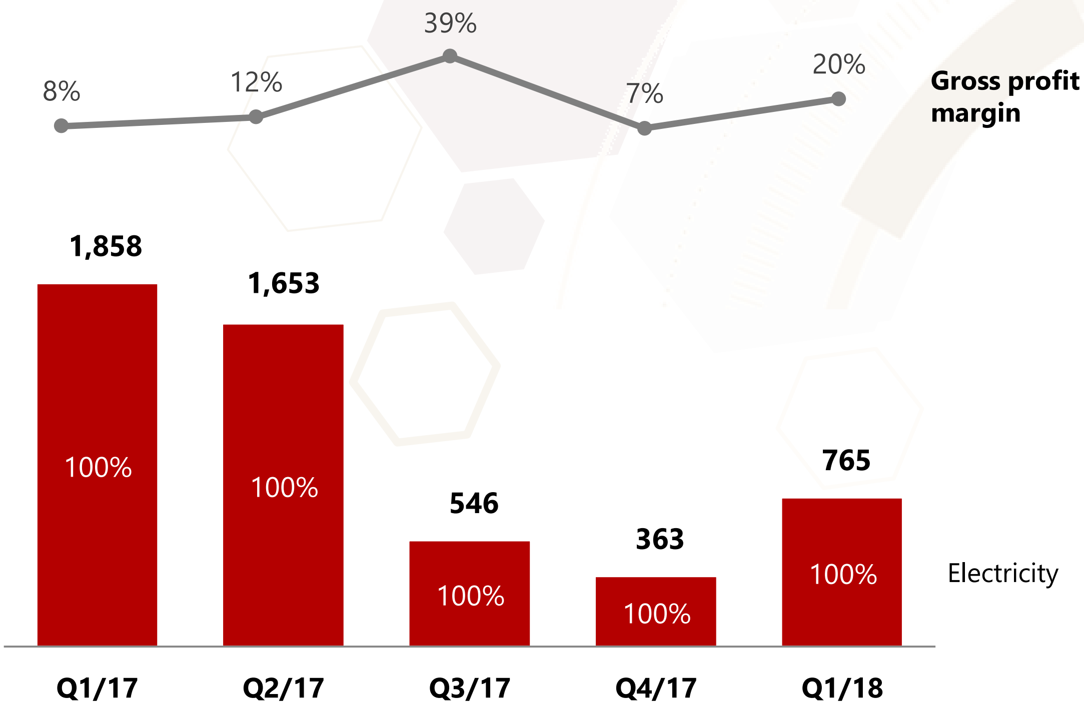
Sriracha Power Plant: Revenue & GPM

Quarterly revenue & gross profit margin

(THB Million, %)

Year-on-year
- Rev. -1,093 / 59%
- GPM +12%

Quarter-on-quarter
- Rev. +402 / 111%
- GPM +13%



Q1/18 VS Q4/17 (QoQ)

- **Total revenue** in Q1/18 was THB 765 million increased by THB 402 million or 111% from Q4/17 due to **higher Availability Payment** (AP) resulted from planned maintenance in Q4/17 also, **higher Energy Payment** (EP) followed higher electricity dispatched volume per EGAT's instruction in Q1/18.

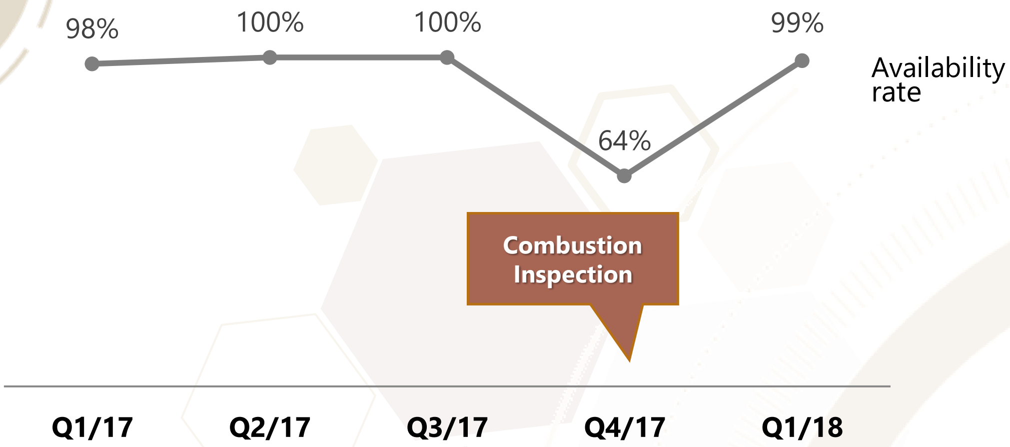
Q1/18 VS Q1/17 (YoY)

- **Total revenue** in Q1/18 decreased by THB 1,093 million or 59% from Q1/17 due to **the drop in Energy Payment** (EP) followed lower electricity dispatched volume according to EGAT's instruction.

*Remark: *Revenue from Electricity (IPP) includes income from electricity sales and finance lease.*

Sriracha Power Plant (IPP): Power

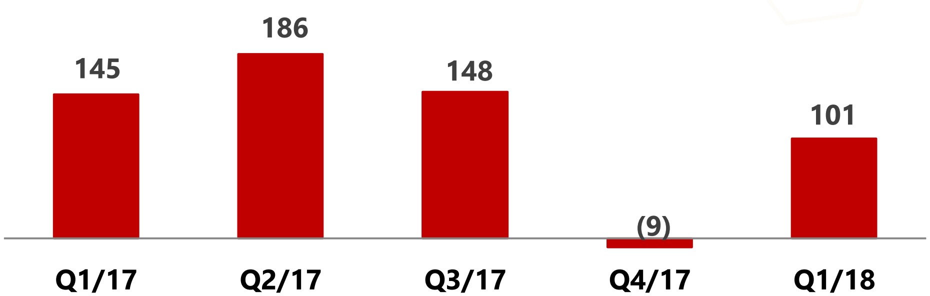
Quarterly Availability Rate (%)



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

Year-on-year: -44 / 30%

Quarter-on-quarter: +110 / 1,222%



Q1/18 VS Q4/17 (QoQ)

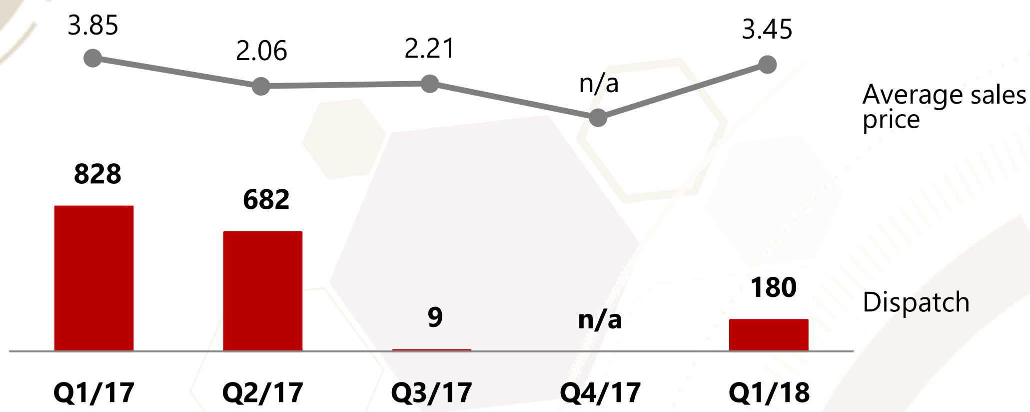
- Availability rate in Q1/18 was 99% increased by 35% from Q4/17 due to the resume from planned maintenance in Q4/17.
- Revenue from Availability Payment (AP) in Q1/18 increased by THB 110 million in line with higher availability rate.

Q1/18 VS Q1/17 (YoY)

- Availability rate in Q1/18 increased slightly by 1% from Q1/17.
- Revenue from Availability Payment (AP) in Q1/18 decreased by THB 44 million or 30% mainly due to the depreciation of USD against THB.

Sriracha Power Plant (IPP): Power

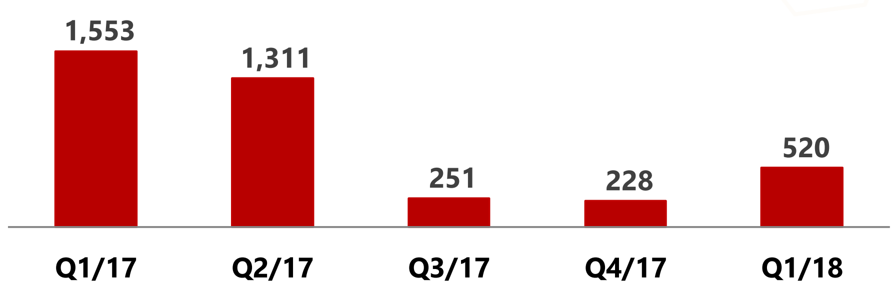
Quarterly average sales price & dispatch (Baht/kWh, GWh)



Quarterly revenue from Energy payment (EP) (THB million)

Year-on-year
-1,033 / 67%

Quarter-on-quarter
+292 / 128%



Q1/18 VS Q4/17 (QoQ)

- Dispatch volume increased to 180 GWh in Q1/18 according to higher demand from EGAT's dispatch instruction.
- Revenue from Energy Payment (EP) in Q1/18 increased by THB 292 million or 128% from Q4/17 due to the increase in dispatch volume per EGAT's dispatch instruction.

Q1/18 VS Q1/17 (YoY)

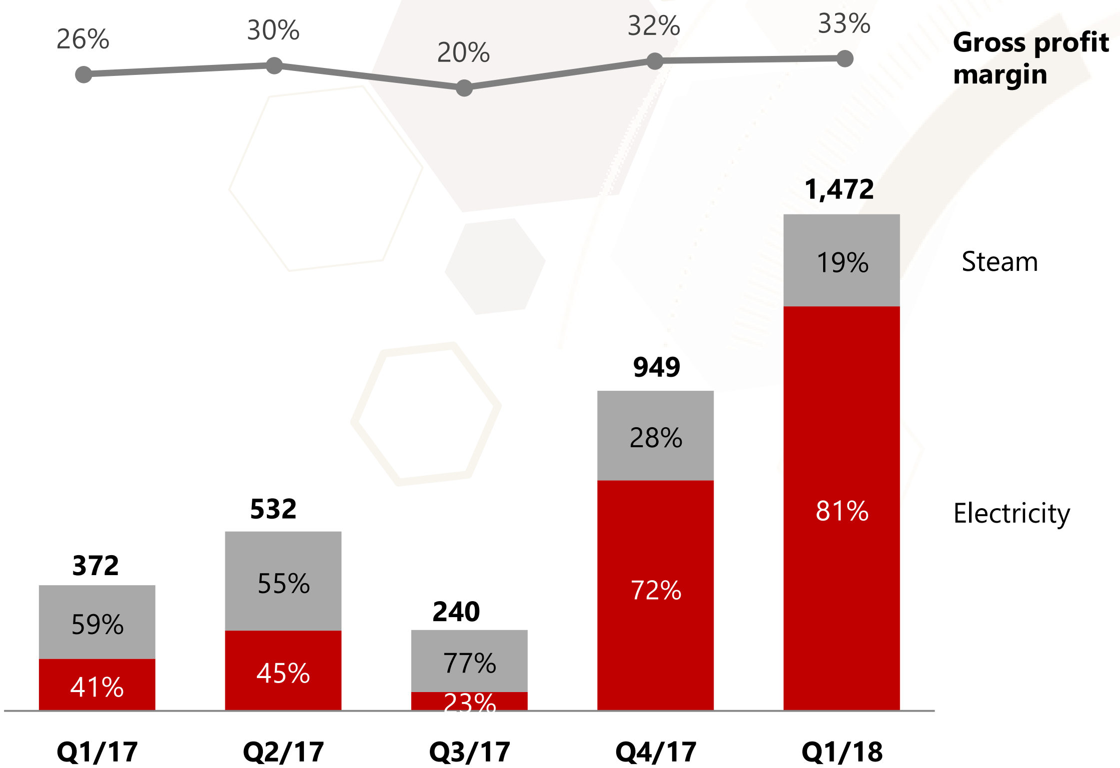
- Dispatch volume decreased by 648 GWh or 78% according to EGAT's dispatch instruction.
- As a result, revenue from Energy Payment (EP) decreased by THB 1,033 million or 67%.

IRPC-CP Power Plant (SPP): Revenue & GPM (1/3)

Quarterly revenue & gross profit margin (THB Million, %)

Year-on-year
▲ Rev. +1,100 / 296%
▲ GPM +7%

Quarter-on-quarter
▲ Rev. +523 / 55%
▲ GPM +1%



Q1/18 VS Q4/17 (QoQ)

- **Total revenue** in Q1/18 was THB 1,472 million increased by THB 523 million or 55% from Q4/17 due to the first full quarter of IRPC-CP full capacity (Phase 1 & 2) operation in Q1/18.

Q1/18 VS Q1/17 (YoY)

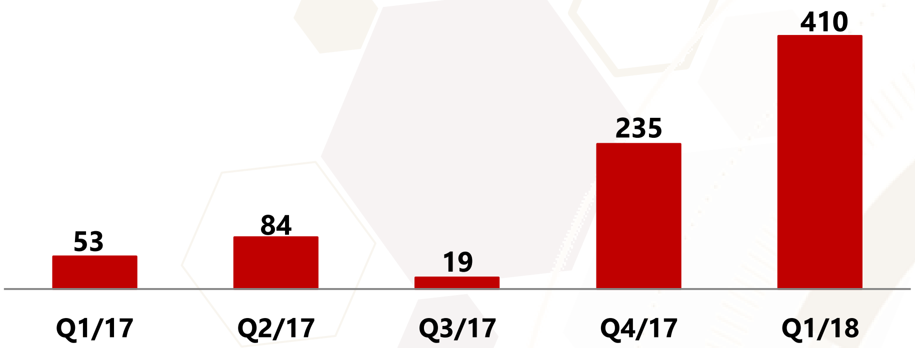
- **Total revenue** in Q1/18 increased by THB 1,100 million or 296% from Q1/17 due to the first full quarter that IRPC-CP started selling electricity to EGAT after the COD of Phase 2 in Nov'17 together with higher Ft rate.

IRPC-CP Power Plant (SPP): Power (2/3)

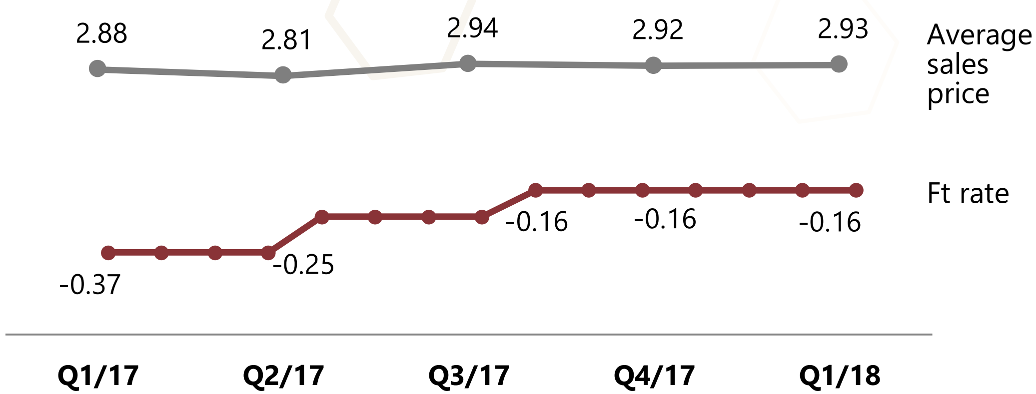
Quarterly power sales volume (GWh)

Year-on-year
+357 / 674%

Quarter-on-quarter
+175 / 74%



Quarterly average sales price & Ft rate (THB/kWh, THB)



Q1/18 VS Q4/17 (QoQ)

- **Volume** increased by 175 GWh or 74% due to the first full quarter of IRPC-CP full capacity (Phase 1 & 2) operation.
- **Price** slightly increased by 0.01 Baht per kWh or 0.3%.

Q1/18 VS Q1/17 (YoY)

- **Volume** increased by 357 GWh or 674% due to higher electricity volume exported to EGAT from the COD of Phase 2 in Nov'17.
- **Price** increased by 0.05 Baht per kWh or 2% in line with higher Ft rate in Q1/18.

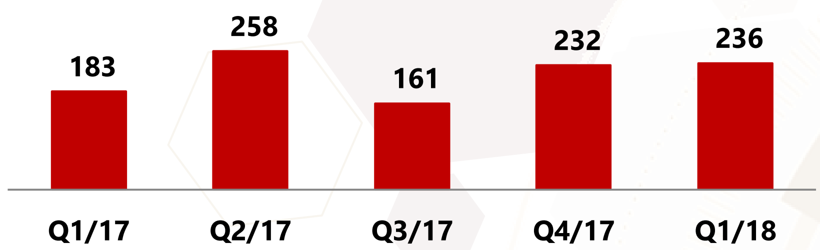
GPSC

IRPC-CP Power Plant (SPP): Steam (3/3)

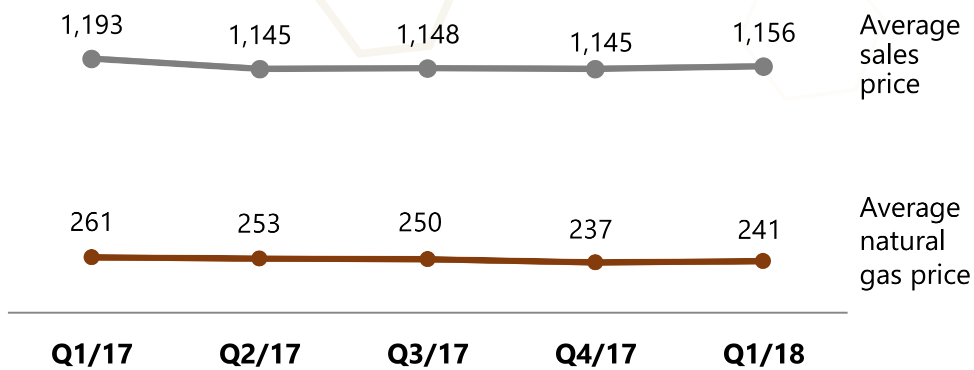
Quarterly steam sales volume ('000 tons)

Year-on-year
+53 / 29%

Quarter-on-quarter
+4 / 2%



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



Q1/18 VS Q4/17 (QoQ)

- **Volume** increased by 4 thousand tons or 2% from Q4/17 after resume back from the commissioning shutdown between IRPC-CP Phase 1 & 2 in Q4/17.
- **Price** increased by 11 Baht per ton or 5% which in line with higher natural gas price in Q1/18 when compare to Q4/17.

Q1/18 VS Q1/17 (YoY)

- **Volume** increased by 53 thousand tons or 29% from Q1/17 since there was IRPC turnaround in Q1/17.
- **Price** decreased by 37 Baht per ton or 3% which in line with lower natural gas price in Q1/18 when compare to Q1/17.