



15 May 2018

THE **INNOVATIVE** POWER FLAGSHIP OF PTT GROUP

CORPORATE PRESENTATION

CGS-CIMB Asia Pacific Conference in New York

GLOBAL POWER SYNERGY PUBLIC COMPANY LIMITED

The background of the slide is decorated with various geometric shapes, primarily hexagons, in shades of grey, brown, and gold. A prominent curved path, composed of a solid gold line and a dotted gold line, winds through the center of the slide, connecting the four main sections. Each section is marked by a red circular icon on this path: a factory for Industry Overview, a person with a dollar sign for Company Overview, a speedometer for Investment in Affiliates, and a bar chart for Financial Performance.

Industry Overview

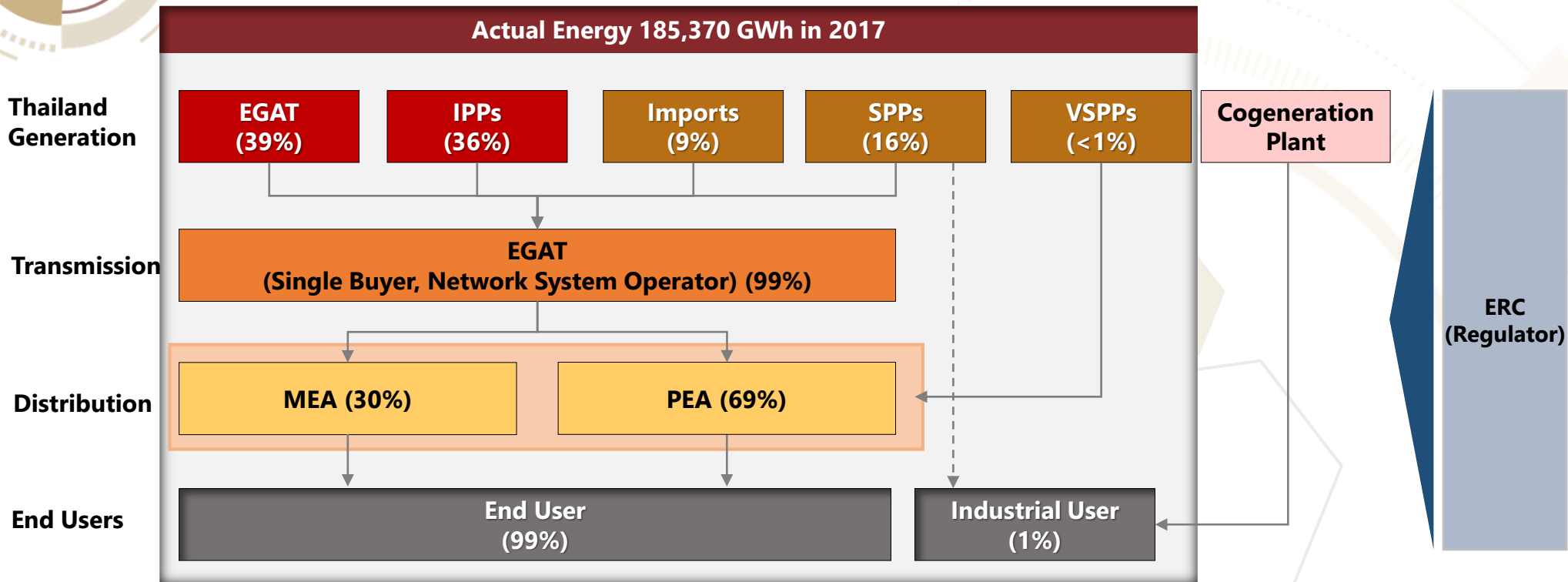
Company Overview

Investment in Affiliates

Financial Performance

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
 MEA
 PEA
 ERC

Very Small Power Producers
 Metropolitan Electricity Authority (State-owned entity)
 Provincial Electricity Authority (State-owned entity)
 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

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

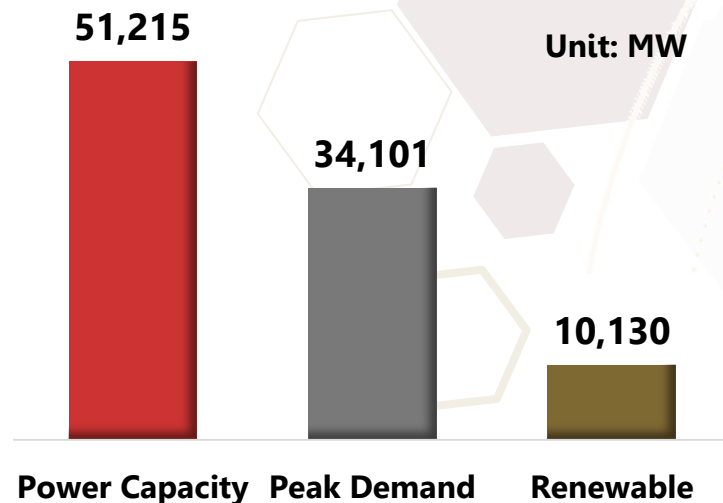
+

adder

Feed in Tariff

Thailand Market Outlook 2018

Thailand Power Statistic 2017



Lower Demand Growth

Decline of power consumption with high reserve margin so, potentially no new round of IPP/SPP bidding.



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.

Government Policy and Big Projects

Thailand Energy 4.0

Electricity



Now

Directions in 2017 - 2018

Targets in 2036

Energy Sector Improvement



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%



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

- Power demand down by 89,000 million units
- Reduce the construction of power plant by 10,000 MW



Centralized production & distribution

- Distributed Generation (DG)
- Micro grid pilot project

- Decentralize to each region
- Reduce investment in transmission line
- Smart power system
- Smart grid

Innovation..



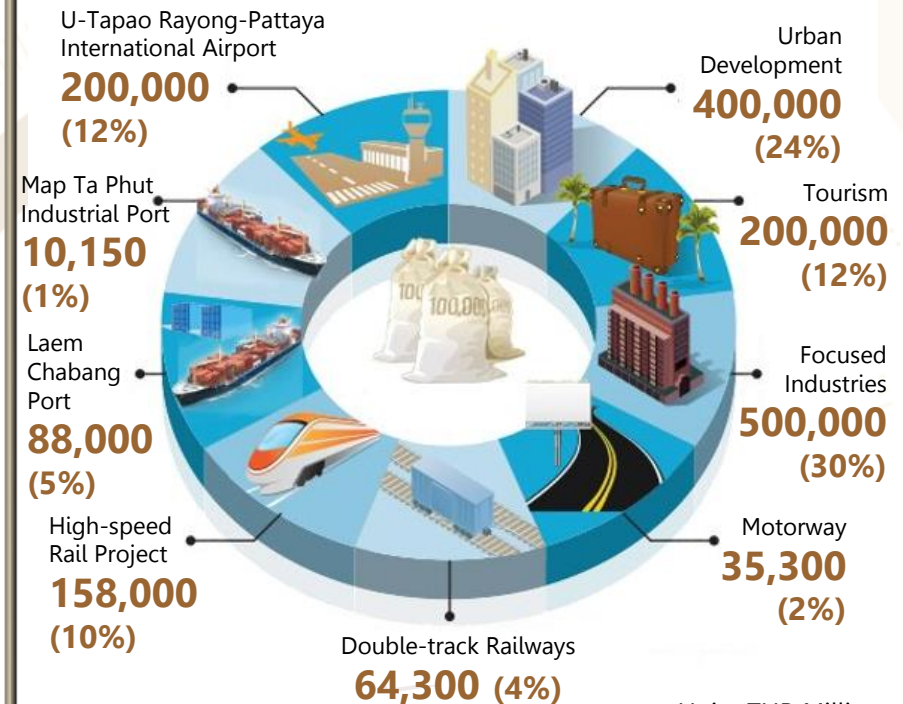
- Micro grid
- Smart energy
- Smart grid



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

EEC Development Area

EEC infrastructure investment in 5 years



Unit : THB Million



Industry Overview

Company Overview

Investment in Affiliates

Financial Performance

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

PTT-Operated Business



Gas Business Unit

- The entire chain of natural gas from exploration and production, procurement, transportation to gas separation and marketing of natural gas



Oil Business Unit

- Engaging in marketing and distribution of refined fuels, LPG and lubricating products also, retail services stations and commercial marketing



International Trading Business Unit

- A fully international trading business covering procurement, international trading of crude oil, condensate, petroleum, petrochemical products as well as other specialty substances



Infrastructure Business Unit

- Engaging in maximizing efficiency of infrastructural asset management and promote proficiency in professional project management such as land development businesses, standards and operating systems for sustainability, engineering and maintenance services etc.

Business invested through PTT Group companies



Petroleum exploration and production (E&P)

- PTT conducts the exploration and production business (domestic and international) through PTT Exploration and Production PLC (PTTEP)



Coal Business

- PTT invests in the coal business and coal mining business in Indonesia for sale to China, Korea, Japan, and Taiwan through PTT Global Management



Power Business

- PTT engages in the power business through Global Power Synergy PLC (GPSC)
- As PTT's Power flagship, GPSC produces utilities (electricity, steam, demineralized water, chilled water) for industrial users and Electricity Generating Authority of Thailand (EGAT)



Petrochemical & Refining Business

- PTT invests through 10 subsidiaries in doing Petrochemical & Refining Business
- The scope is from fuel processing, production and sales of upstream, intermediate, and downstream petrochemicals, together with various polymers, worldwide marketing business, and integrated logistical services





Included in SET50
(4 Jul 2016)



Best CFO Award
(15 Jul 2016)



สมาคมผู้ลงทุนไทย
THAI INVESTORS ASSOCIATION

Investors' Choice Award
(27 Jul 2016)



Asia Pacific ex
Japan Small Cap
(19 Sep 2016)



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

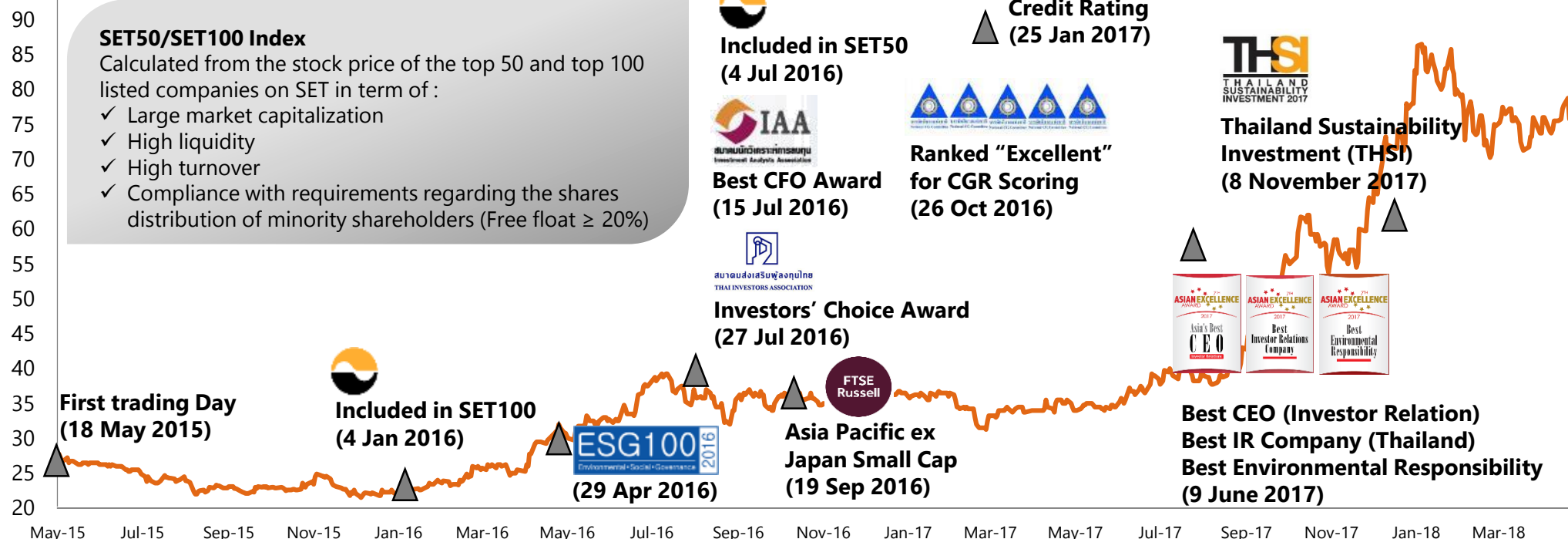


Thailand Sustainability
Investment (THSI)
(8 November 2017)



Best CEO (Investor Relation)
Best IR Company (Thailand)
Best Environmental Responsibility
(9 June 2017)

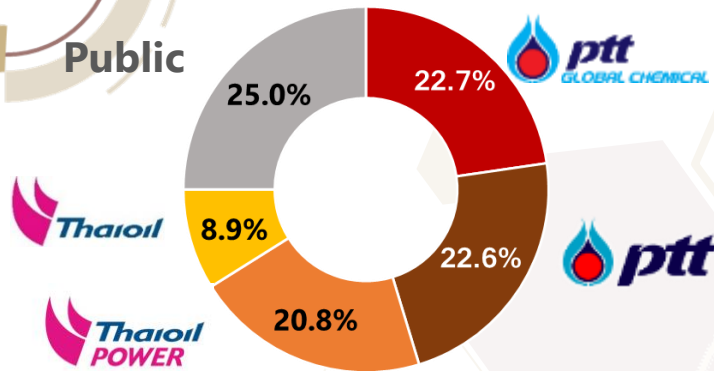
THB / Share



- **IPO in May 2015**, GPSC has been growing business with continuously increased market capitalization.
- Starting from January 2016, where GPSC has been included in **SET100** and progressed to **SET50** in July 2016. Moreover, GPSC has been included in Global standard namely **FTSE Index** later in September 2016.
- GPSC has been shortlisted in **ESG100** 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 received **Most Progress in IR Award** from IR Magazine.
- 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**.
- In June 2017, GPSC was granted **Best CEO (Investor Relations), Best IR Company (Thailand) and Best Environmental Responsibility** from Corporate Governance Asia. Recently in November 2017, GPSC has been included in **Thailand Sustainable Investment (THSI)** from the Stock Exchange of Thailand.
- **These are the results of confidence on GPSC performance from all stakeholders.**

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 27 February 2017

Company Information

Head Office	555/2 Energy Complex Building B, 5th Floor, Vibhadi-Rangsit Road, Chatuchak, Bangkok
Business Type	Energy & Utilities
Registered Capital (Fully Paid)	THB 14,983 million
Market Cap (As of 9 May 2018)	THB 114,245 million

**GPSC's committed capacity is 1,922 Equity MW
Electricity and 1,582 T/H Steam in year 2019**



**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.

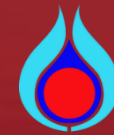
Power Flagship of PTT Group with Solid Customers' Profiles

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.



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



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'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

- 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



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

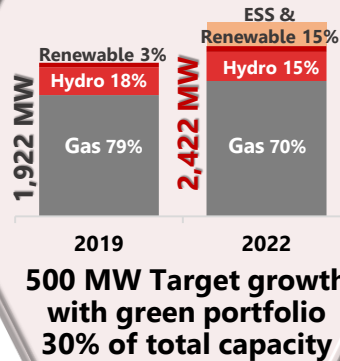
2018 Business Plan

MAXIMIZE



Productivity improvement through OEMS implementation

MOVE



Rayong CUP 1-3 Power Plant

- **Productivity improvement initiatives** to increase contribution margin of THB 100 million within Y2018
- Maximize Reliability 99.99%, Efficiency 65.1%, and Safety

Sriracha IPP Power Plant

- Prefer to operate with “**Reserved shutdown scenarios**” for best profitability

MANAGE



Asset management strategic framework 2018

- Set target for CHPP to **install solar rooftop 10 MW** for PTT Group
- **Implement dashboard platforms** (JVs & Subsidiary)
- **Ensure** that JVs & Subsidiary's performance on target
- **Control 3 projects under construction** to meet schedule; **Nam Lik, XPCL and CUP-4**

- Operate business to fulfill PTT Group's demand both domestic and international base on **PTT Group's investment plan**
- Be PTT Group Power Flagship to develop utility project to support **EEC and EECi** to be a hub of innovation and technology of Thailand
- Develop **low cost battery manufacturing plant with standardized quality and environmentally friendly** that is capable to compete with market.
- Develop ESS pilot project by collecting data from **solar rooftop and ESS** that will be used for further development
- Develop **solar rooftop** business in **industrial estate, village, college** etc.
- Develop power plant project in **Laos** and potential industrial estate in **Myanmar**

3M Strategy through Digitization

Strategic Growth : 3 Growth Engines between 2018-2022

Thailand as Priority



- Focus in **MAPTAPHUT** and **EEC**
- Be **PTT Group's** power supplier of choice
- Contribute to **strategic priorities across the PTT group**
- Increase **new customers in Thailand**

International Business



"Focus Countries"
Go into country where we can play multiple fuel to avoid risk.

- **Myanmar and Laos**
- Enhance **country knowledge** and **relationship**
- **Strategic partners**
- **Conventional and renewable energies**

Future Energy



- **Forefront of innovation** in energy sector
- **Leverage IP technology** license partnership
- **Leverage existing investments**, and PTT's asset base to deploy new technologies
- **EEC** as priority area
- **Smart grids** for smart cities

Action Plan 2018-2019

PTT Group Power Flagship

- ✓ *Target new customers from industrial customers under PTT Group*
- ✓ *Expand through PTT Group expansion*
 - *PTTGC: LLDPE2, PO/POL, MCC*

Develop Power Plant Project

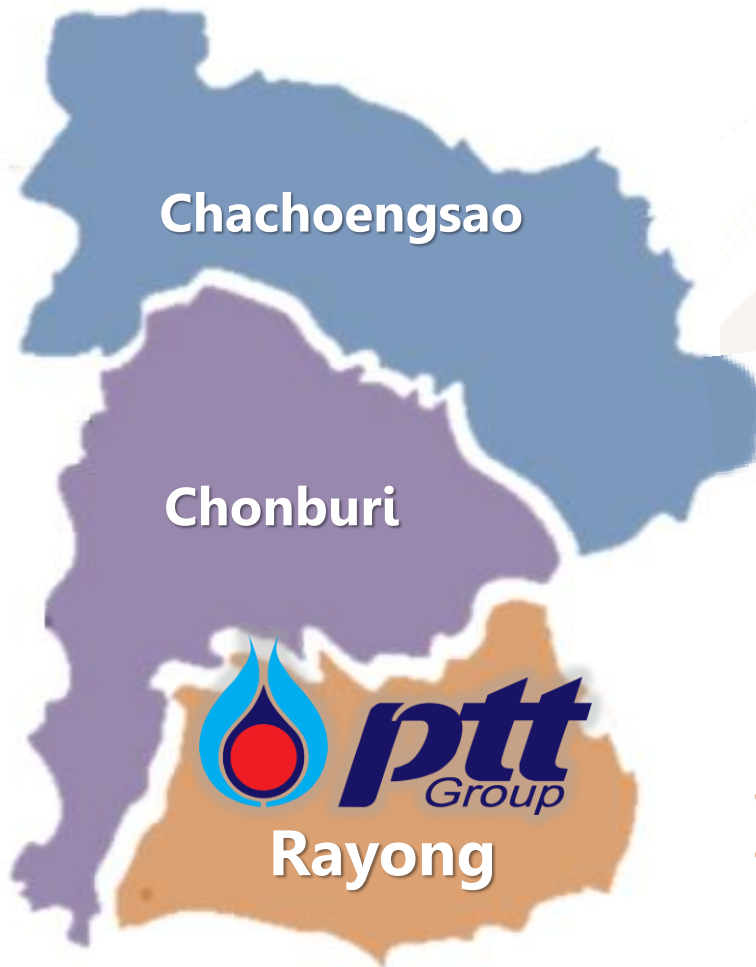
- ✓ *Myanmar*
 - *Industrial users*
 - *Gas to power*
- ✓ *Laos*
 - *Hydro power plant*

Energy Storage System Integrator

- ✓ *First 100MWh battery pilot project targeted to COD within 2019*
- ✓ *Development of system integrator position*

Rising Demand in EEC & Rayong Area

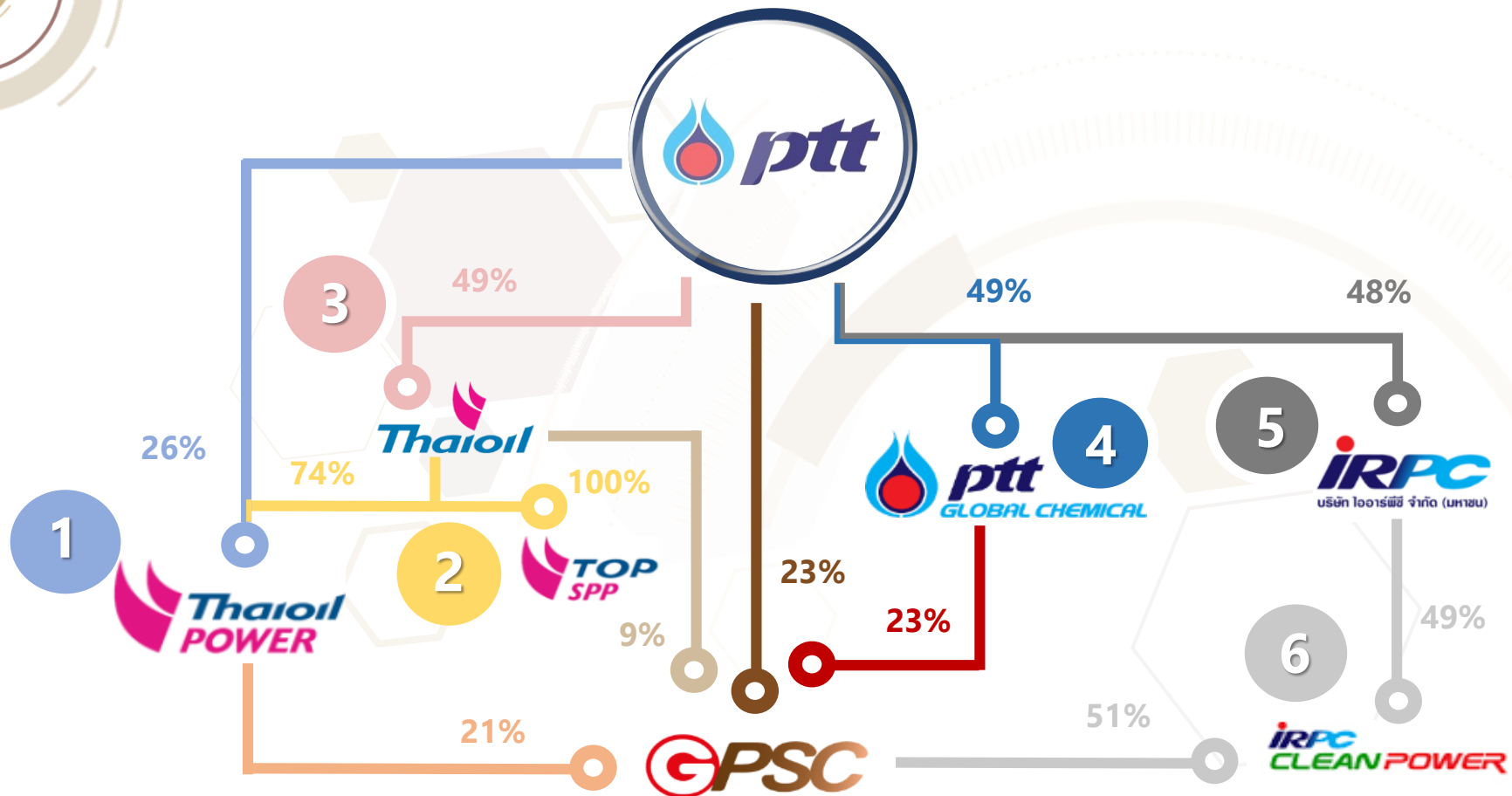
31 Industrial estates in EEC area



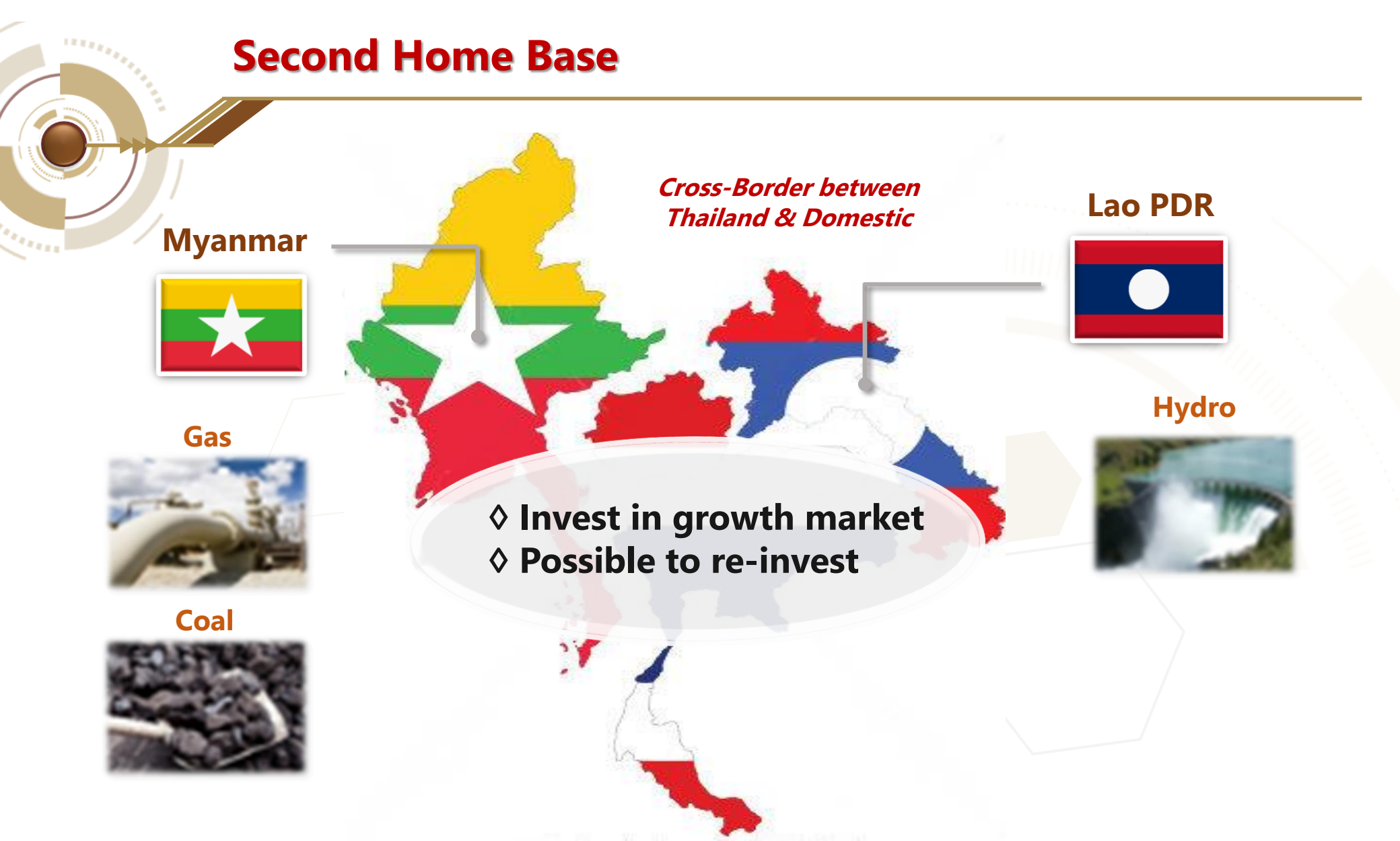
Location	EEC Area
Strategy	<ul style="list-style-type: none">• EPC contractor• O&M service provider• Asset Management service provider• ESS business

- Asia Industrial Estate
- Map Ta Phut Area

Growth Along With PTT Group



Second Home Base



Renewable & Energy Storage System

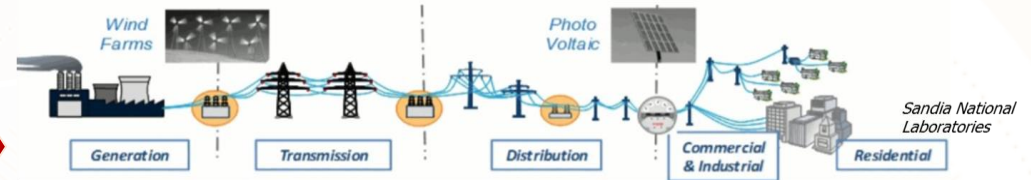
Renewable
energy



Energy storage



Energy storage system



Generation

1 Spinning Reserve
(for Peaker Plants)

Transmission

2 Trans./Dist.
Upgrade Deferral

Distribution

3 Ramp-Rate Control
(for renewable energy)

Behind-The-Meter

4 Micro-Grid
(for remote area)

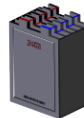
1 Expand Renewable Portfolio

2 Battery Cell and Battery Management System (BMS)

- Constructing battery plant
- Technology from 24M

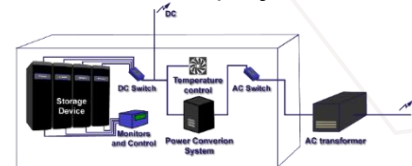
Battery Cell

Battery Module



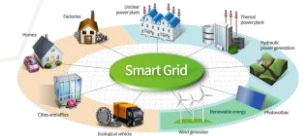
3 Energy Storage System (ESS)

- Develop ESS pilot project
- Commercial projects



4 Energy Management System

- Develop smart grid/micro grid by using digital technology



Significant events in 2017



Investment

24m

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** and to become **system integrator** by 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 **3 awards** from the 7th Asian Excellence Award 2017 for **Asia's Best CEO Award, Best Investor Relations Company** and **Best Environmental Responsibility**.

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

Selected to include in **ESG100** from Thaipat Institute as a company who transparently and fairly discloses information to the public.



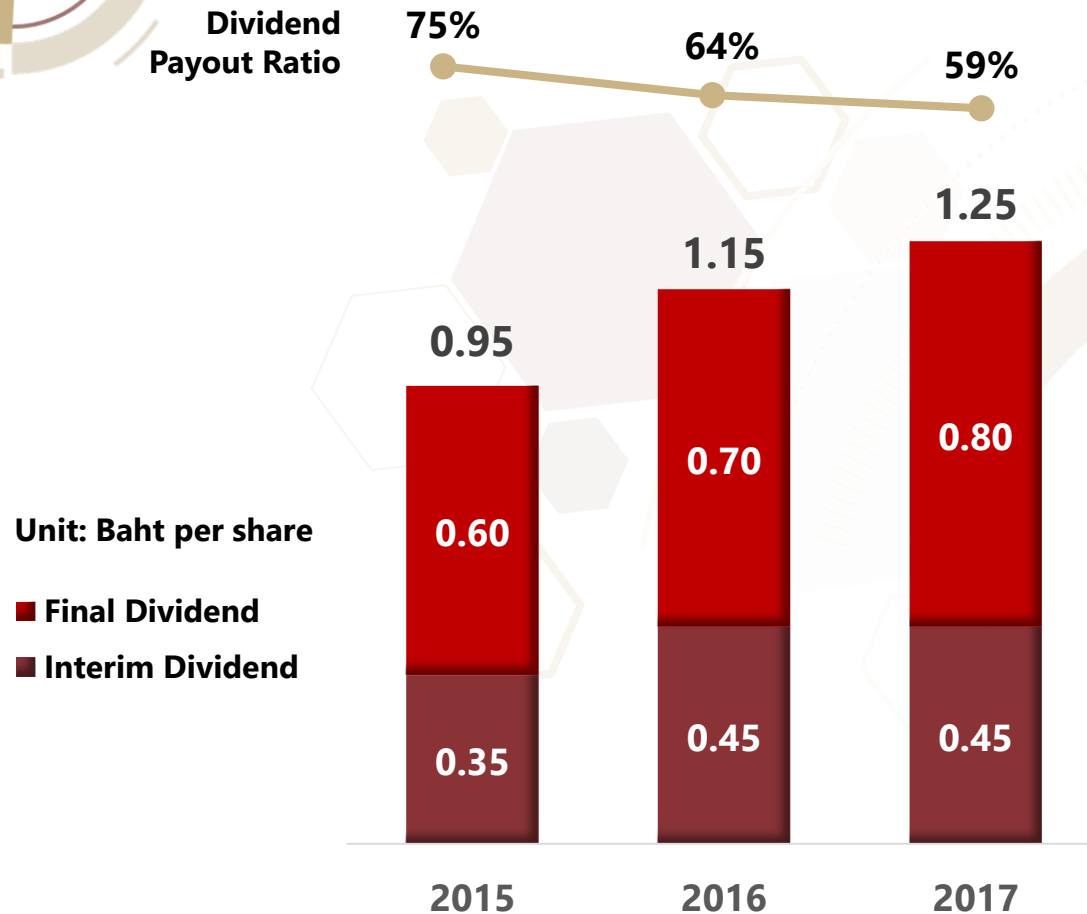
Financing

Final dividend payment from the second half of 2017 operating result for **0.80 Baht** per share.

Annual dividend payment from 2017 operating results for **1.25 Baht** per share.

First debentures issuance for **Baht 5,000 million** to institutional and major investors that resulted in the decrease in cost of fund of the company by 1%.

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)

1Q 2018 Highlights

GROWTH

Becoming an Innovative Global Power Company

- ◇ GPSC signed MOU with Chiang Mai University to develop **smart city** inside the campus. 17 kWh of energy storage system was installed as a prototype for further study together to response to Thailand Energy 4.0.
- ◇ Machine design 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

28% Increase in Net profit QoQ

- ◇ 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.
- ◇ Q1/18 net profit increased by THB 172 million or 23% YoY resulted from the rise in sales to EGAT from IRPC-CP and better performance of Rayong plant with higher Ft.

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.



Industry Overview



Company Overview



Investment in Affiliates



Financial Performance



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%

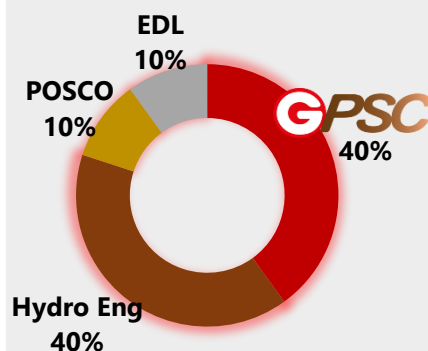
Equity Investment :

37 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

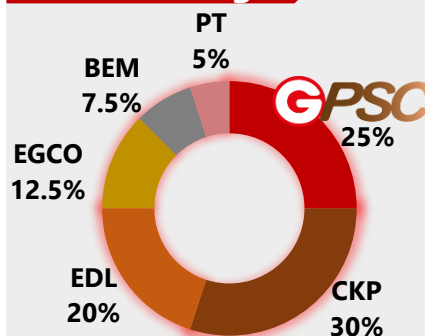
Progress YE2017:
88%

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

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



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



Industry Overview

Company Overview

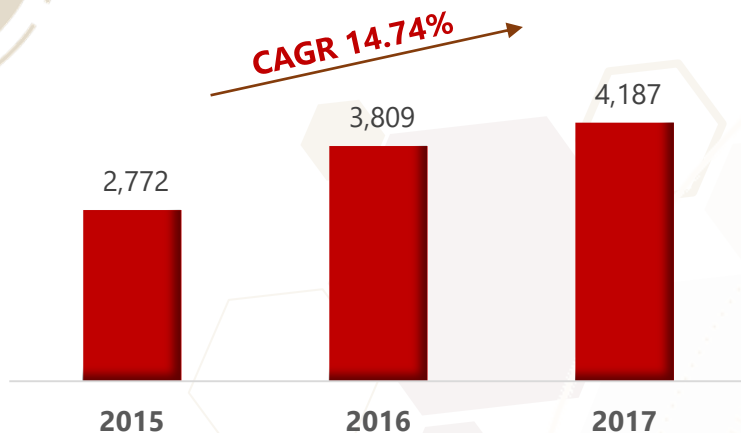
Investment in Affiliates

Financial Performance

Constantly Improving Financial Performance

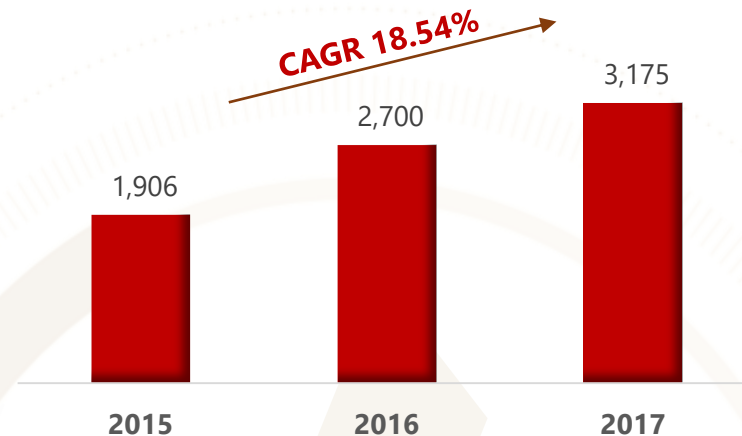
EBITDA

(THB Million)

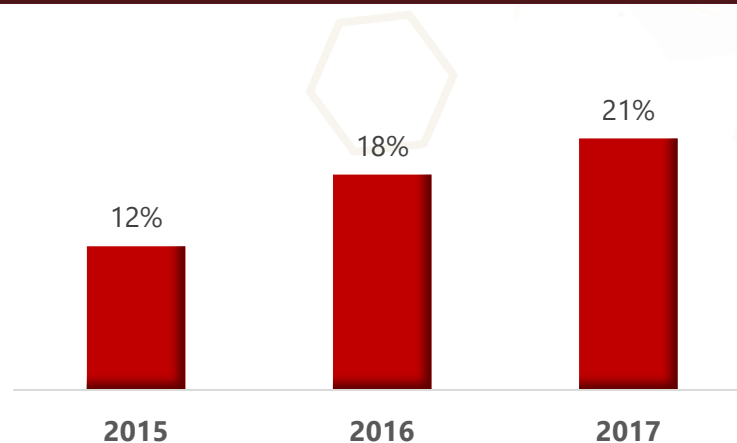


Net Profit

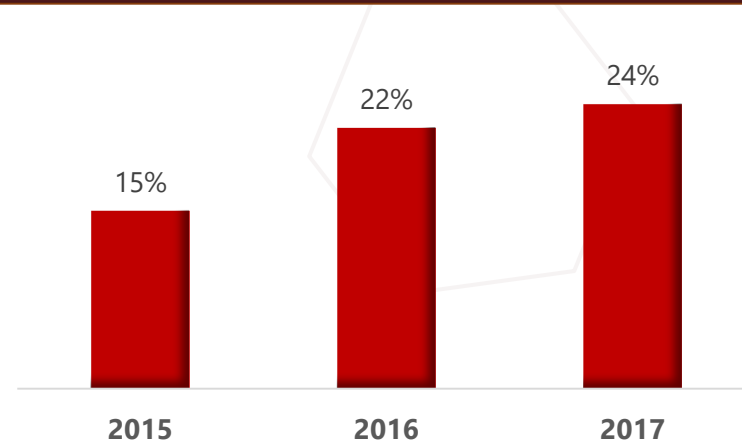
(THB Million)



EBITDA Margin (%)



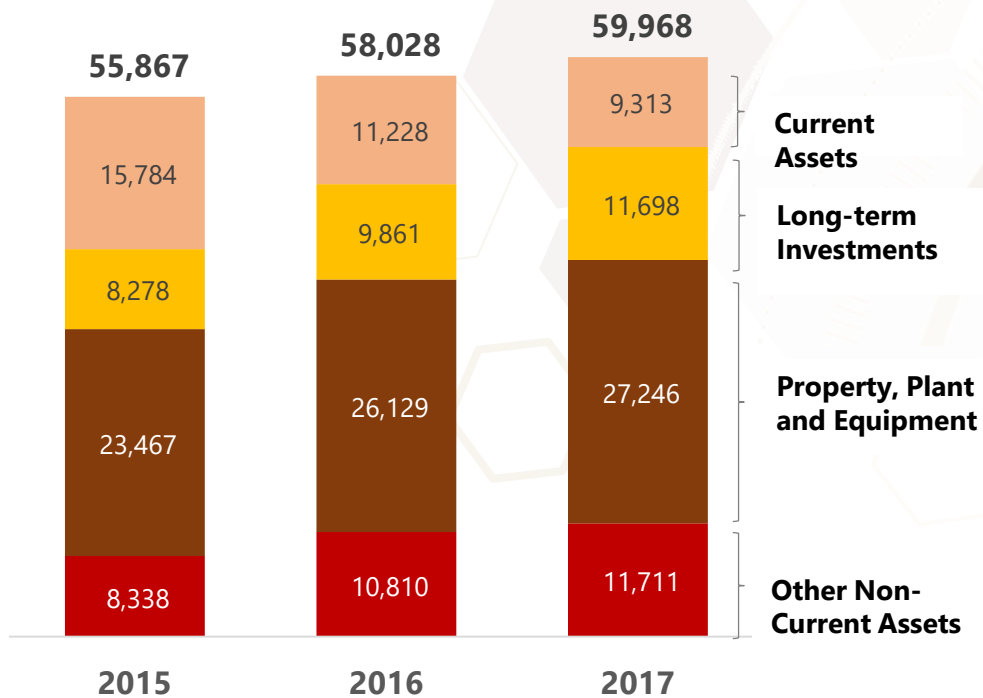
Gross Profit Margin (%)



Solid Financial Position

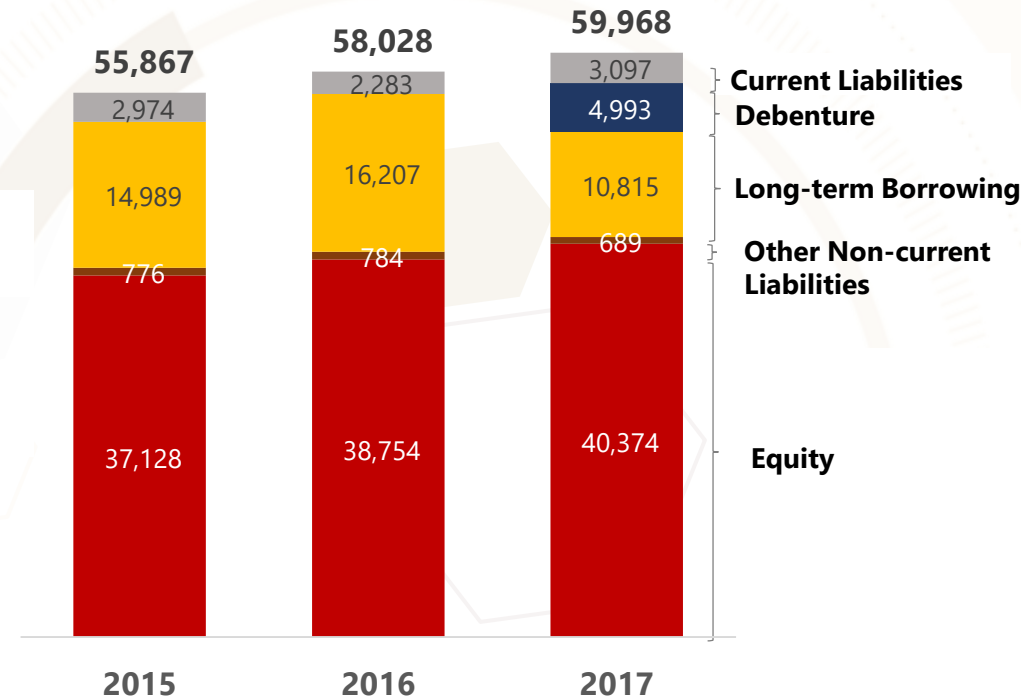
Total Assets

(THB Million)



Total Liabilities & Shareholders Equity

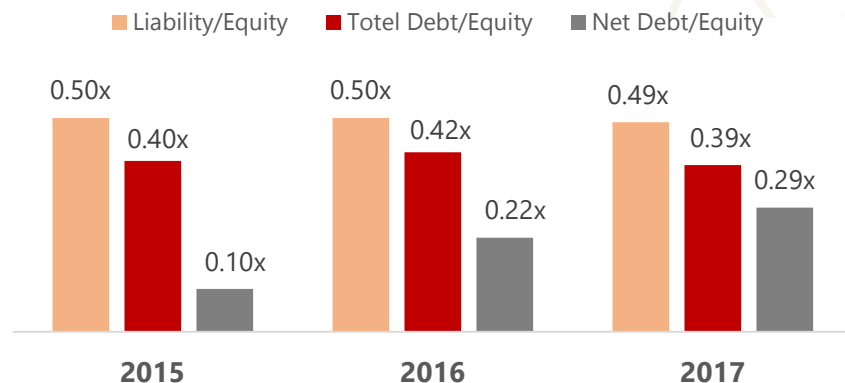
(THB Million)



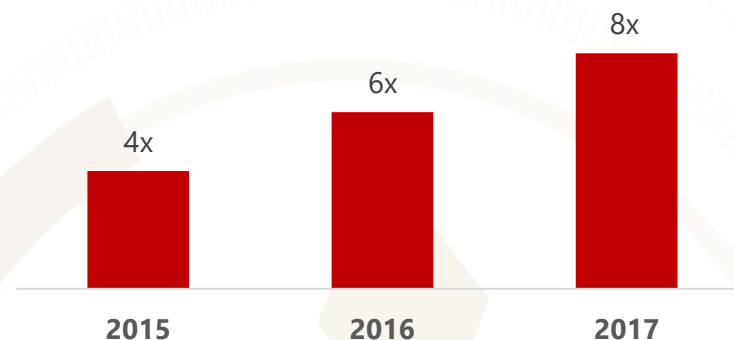
Well-managed Debt Profile

Interest bearing debt to equity ratio is less than 0.5x from 2015 to 2017.

Leverage (x)

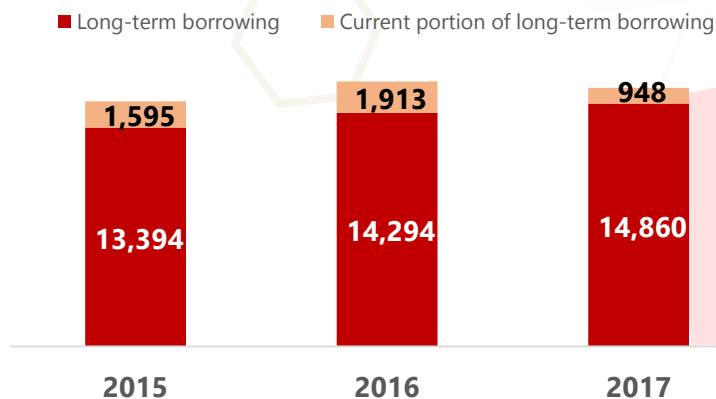


Interest Coverage Ratio (x)

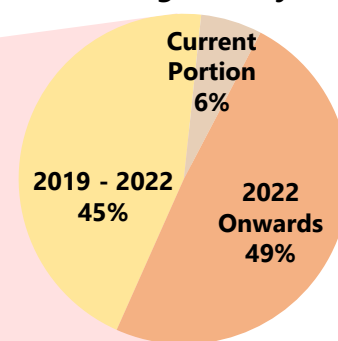


Interest Bearing Debt Profile

(THB Million)



Interest Bearing Debt by Maturity



Note:

1) Liability / Equity = Total liabilities / Total equity 2) Interest bearing debt / Equity = Interest bearing debt / Total equity 3) Net interest bearing debt / Equity = Total interest bearing debt minus cash and cash equivalents, restricted accounts and temporary investments / Equity 4) EBITDA / Interest coverage = EBITDA / Interest expenses

GPSC's Prudent Financial Policy



Net Interest Bearing Debt
to Equity $\leq 1.0x$

2015

0.10

2016

0.22

2017

0.29



Net Interest Bearing Debt
to EBITDA $\leq 4.0x$

1.29

2.20

2.76



Dividend Payout at the minimum
of 30% of net profit

Nevertheless, this will be subject to
company's current investment plan and cash flow

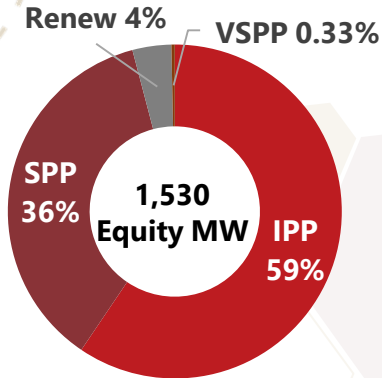
75%

64%

59%

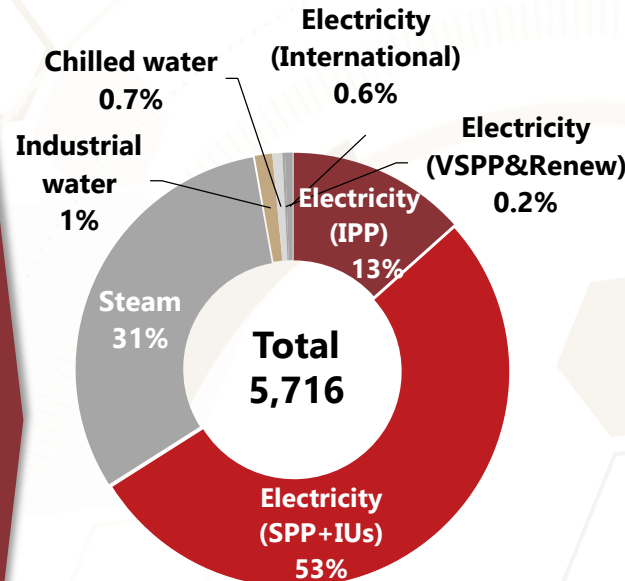
Majority of GPSC's revenue is from electricity, PTT Group is GPSC's major customer

ELECTRICITY CAPACITY BREAKDOWN (Unit: Equity Megawatt)



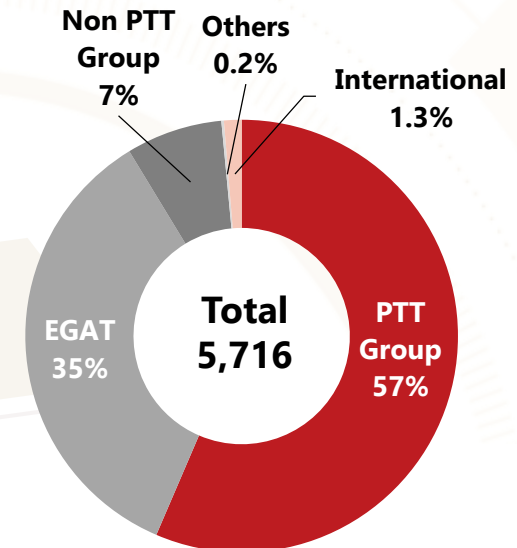
Name	Type	GPSC's share %	Total capacity (MW)	Equity capacity (MW)	Steam (T/H)
IN OPERATION					
Sriracha	IPP	100%	700	700	
CUP-1	SPP	100%	226	226	890
CUP-2	SPP	100%	113	113	170
CUP-3	SPP	100%	-	-	280
CHPP	VSPP	100%	5	5	
IRPC-CP Phase 1	SPP	51%	45	23	86.7
IRPC-CP Phase 2	SPP	51%	195	99.4	66.3
CHPP (Solar)	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
BIC-2	SPP	25%	117	29.25	5
RPCL	IPP	15%	1,400	210	
Share of Profit / Dividend Income				338	19
Total operating				1,530	1,512

Q1/18 Revenue by product (THB Million)



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

Q1/18 Revenue by customer (THB Million)



- Accounted for more than 50% of total revenue, PTT Group is consistently the largest customer of GPSC in Q1/2018.

Q1/18 Revenue of THB 5,716 million, increased 20% QoQ

Quarterly revenue & gross profit margin

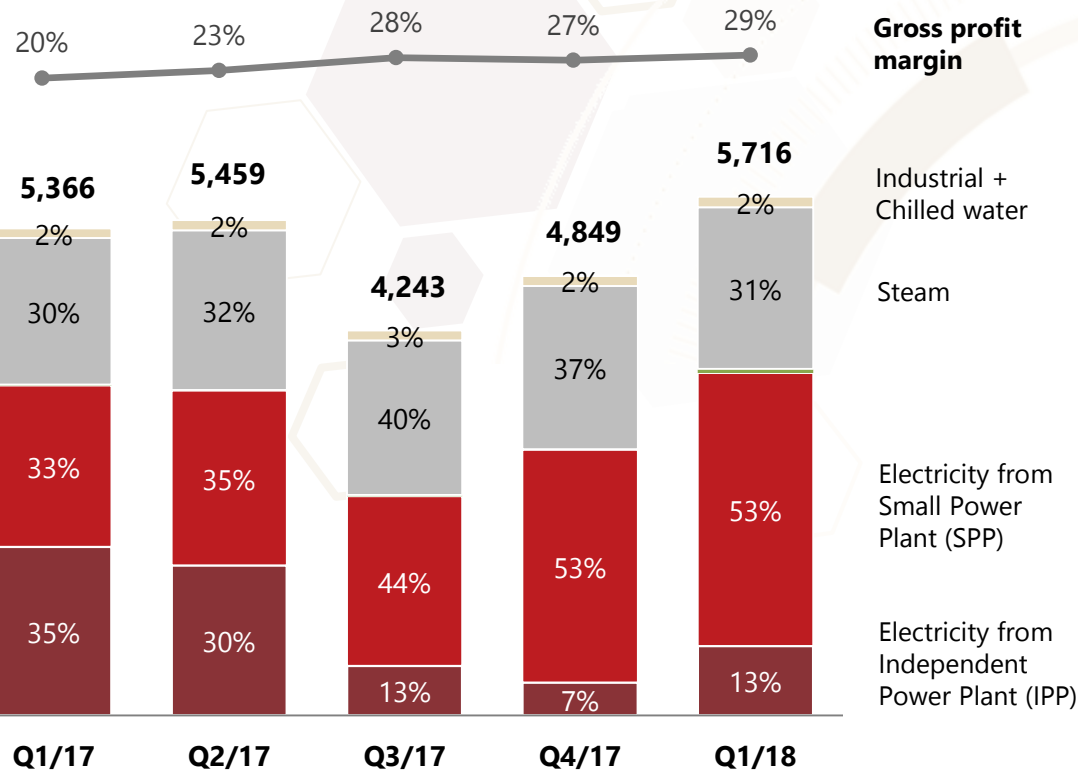
(THB Million, %)

Year-on-year

- ▲ Rev. +350 / 7%
- ▲ GPM +9%

Quarter-on-quarter

- ▲ Rev. +867 / 18%
- ▲ 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.

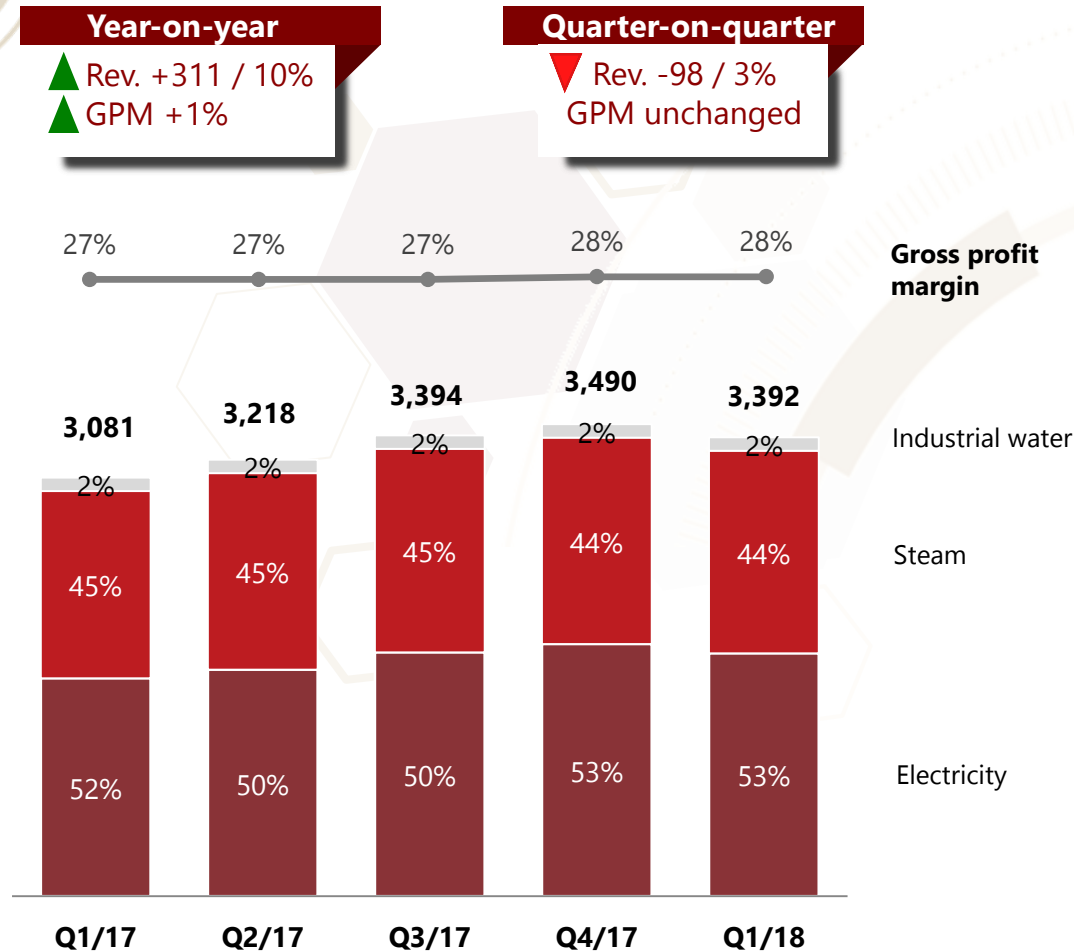
Q1/18 VS Q1/17 (YoY)

■ **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.**

Rayong Power Plant (SPP) : Revenue & GPM

Quarterly revenue & gross profit margin

(THB Million, %)



Q1/18 VS Q4/17 (QoQ)

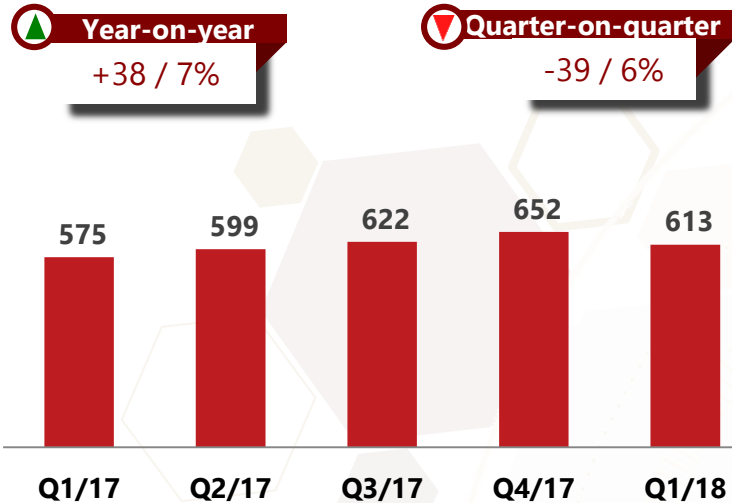
Total revenue in Q1/18 was THB 3,392 million decreased by THB 98 million or 3% from Q4/17 mainly from **lower electricity sales volume exported to EGAT** due to maintenance shutdown in Q1/18.

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.

Rayong Power Plant (SPP): Power

Quarterly power sales volume (GWh)



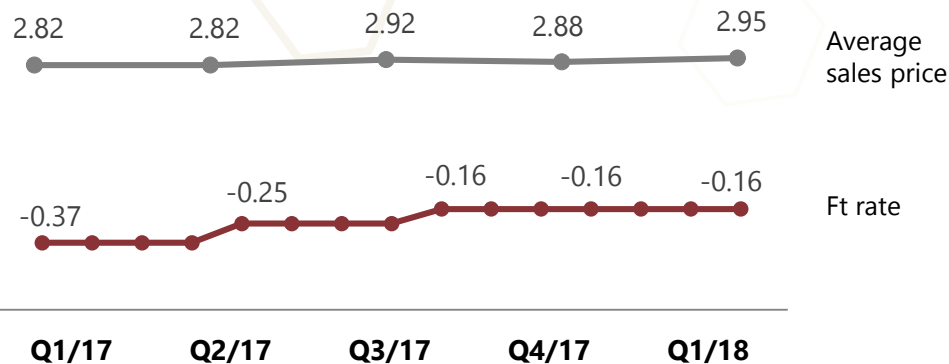
Q1/18 VS Q4/17 (QoQ)

- 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.

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



Rayong Power Plant (SPP): Steam

Quarterly steam sales volume

('000 tons)



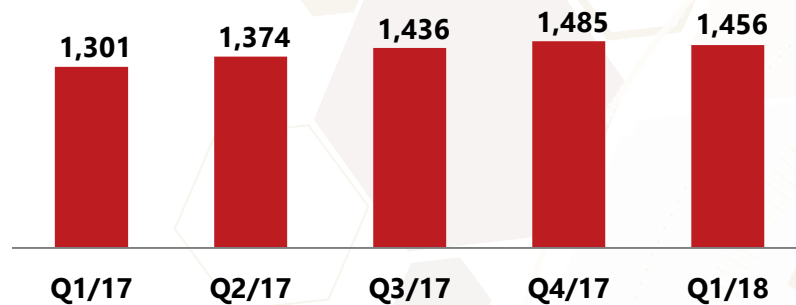
Year-on-year

+155 / 12%



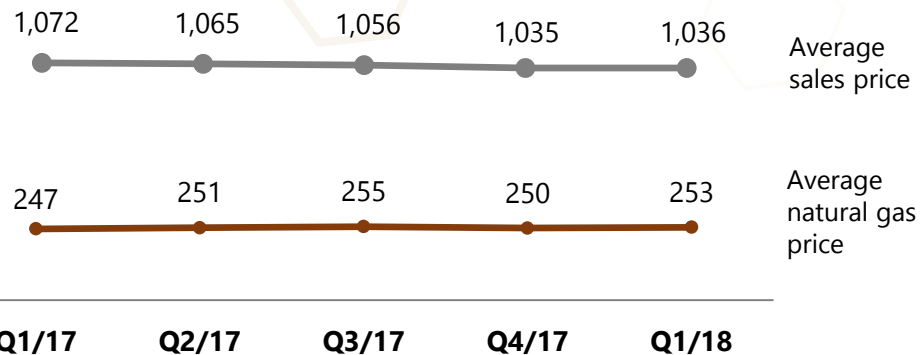
Quarter-on-quarter

-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

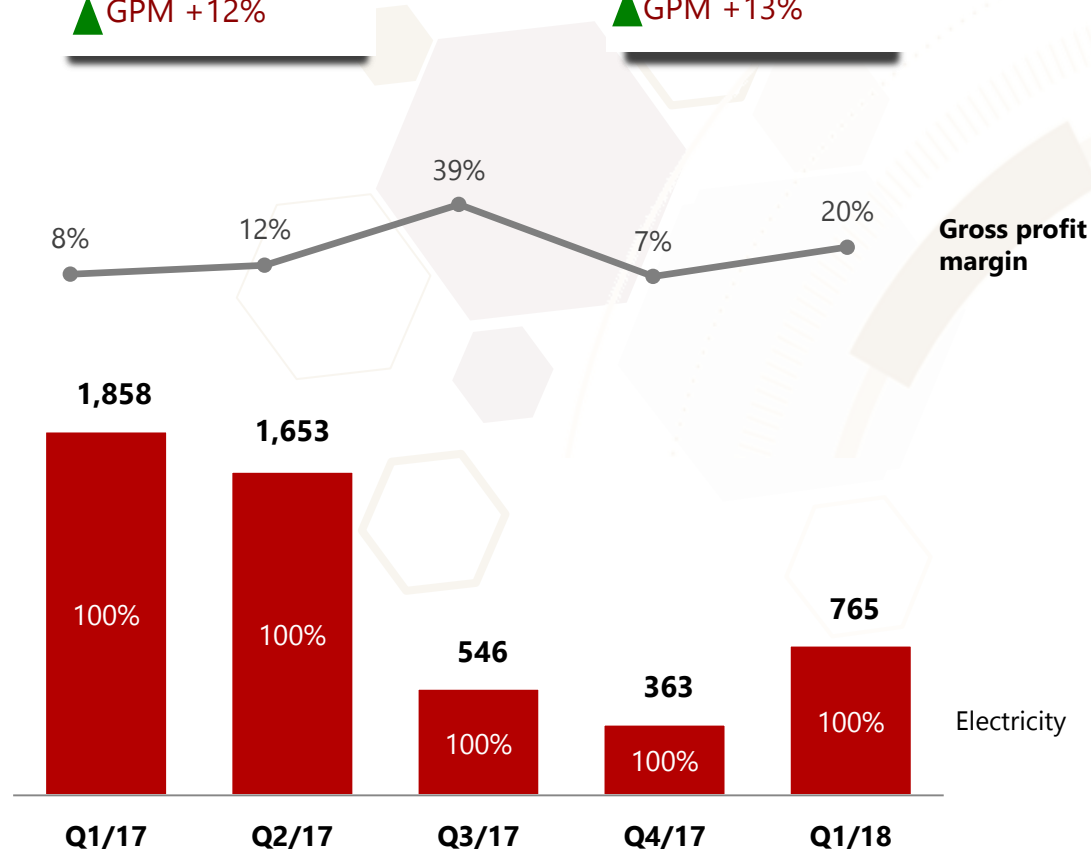
(THB Million, %)

Year-on-year

▼ Rev. -1,093 / 59%
▲ GPM +12%

Quarter-on-quarter

▲ Rev. +402 / 111%
▲ GPM +13%



Q1/18 VS Q4/17 (QoQ)

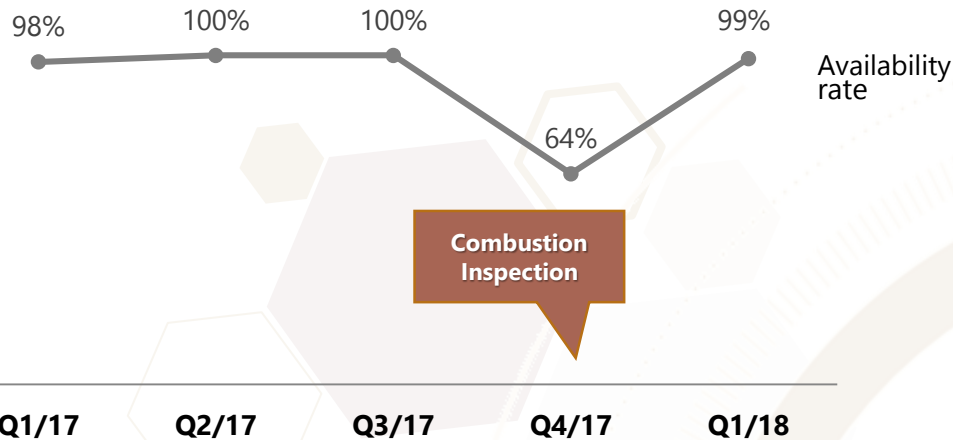
■ **Total revenue** in Q1/18 was THB 765 million increased by THB 402 million or 111% from Q4/17 due to **higher Availability Payment** (AP) resulted from planned maintenance in Q4/17 also, **higher Energy Payment** (EP) followed higher electricity dispatched volume per EGAT's instruction in Q1/18.

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.

Sriracha Power Plant (IPP): Power

Quarterly Availability Rate (%)



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.

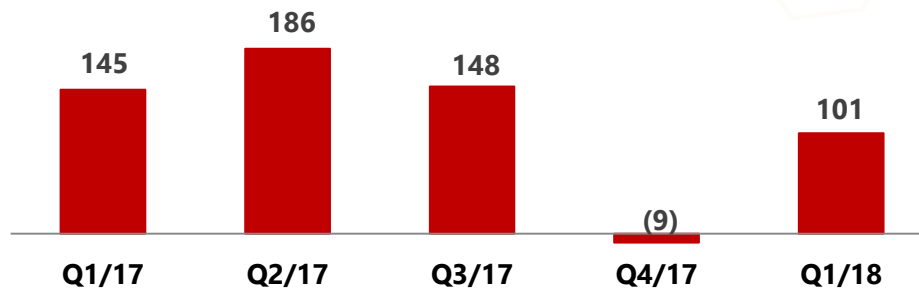
Quarterly revenue from Availability Payment (AP) (THB million)

Year-on-year

-44 / 30%

Quarter-on-quarter

+110 / 1,222%

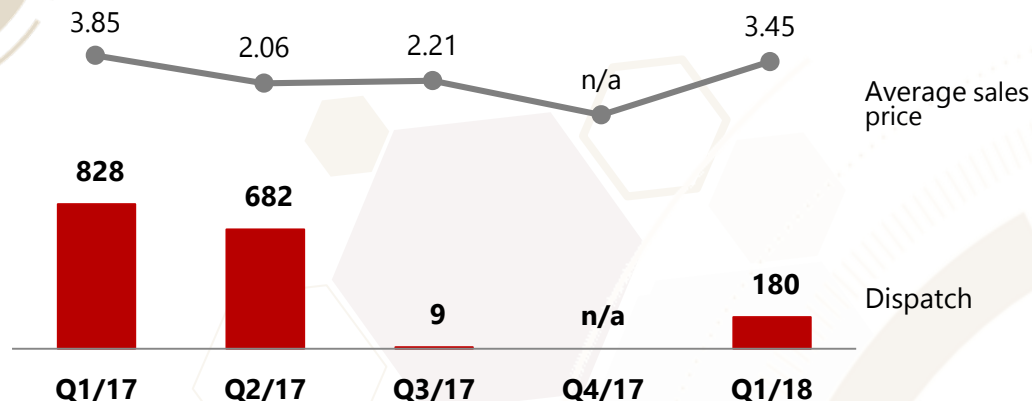


Q1/18 VS Q1/17 (YoY)

- 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)



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.

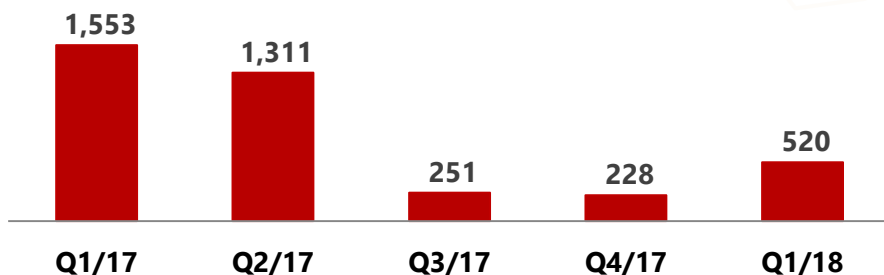
Quarterly revenue from Energy payment (EP) (THB million)

Year-on-year

-1,033 / 67%

Quarter-on-quarter

+292 / 128%



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%

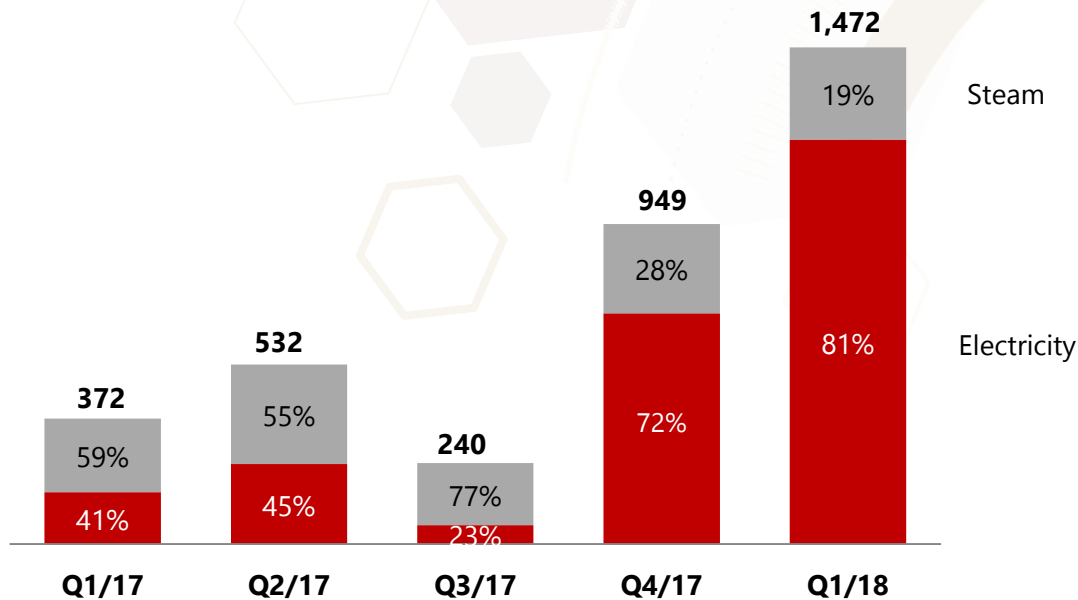


Q1/18 VS Q4/17 (QoQ)

- **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)



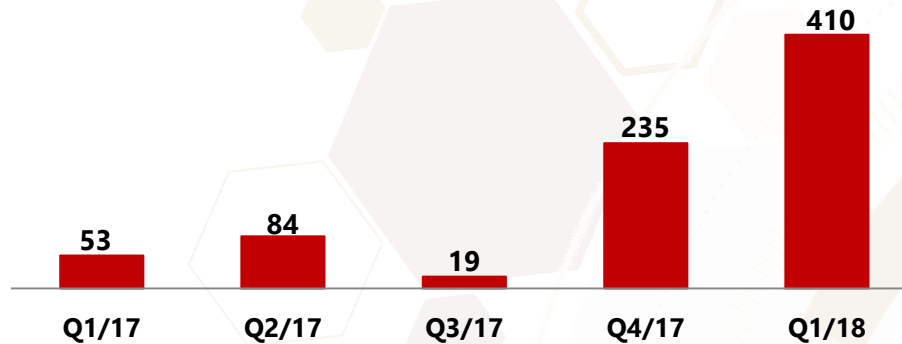
Year-on-year

+357 / 674%



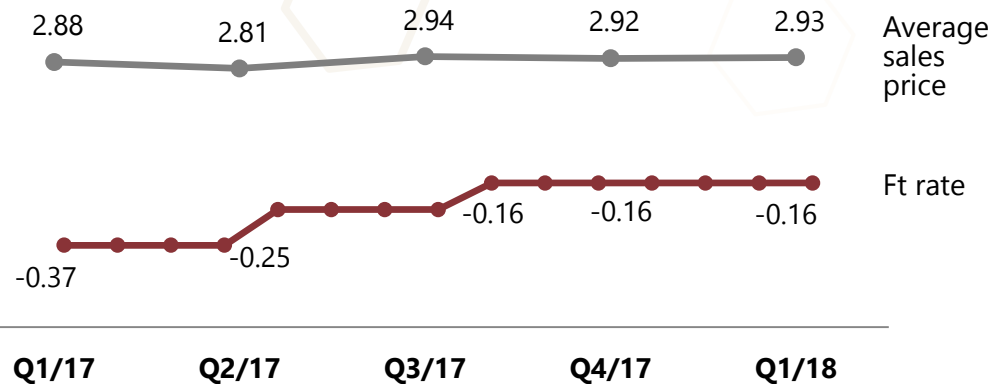
Quarter-on-quarter

+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.

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

Quarterly steam sales volume

('000 tons)



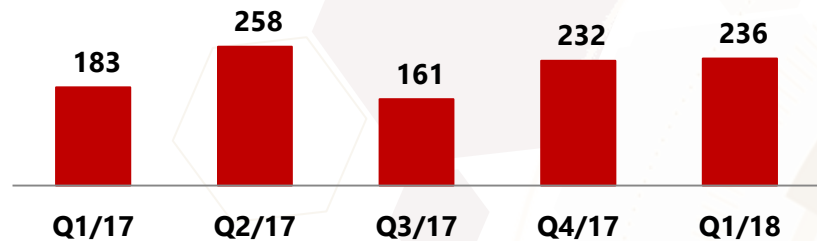
Year-on-year

+53 / 29%



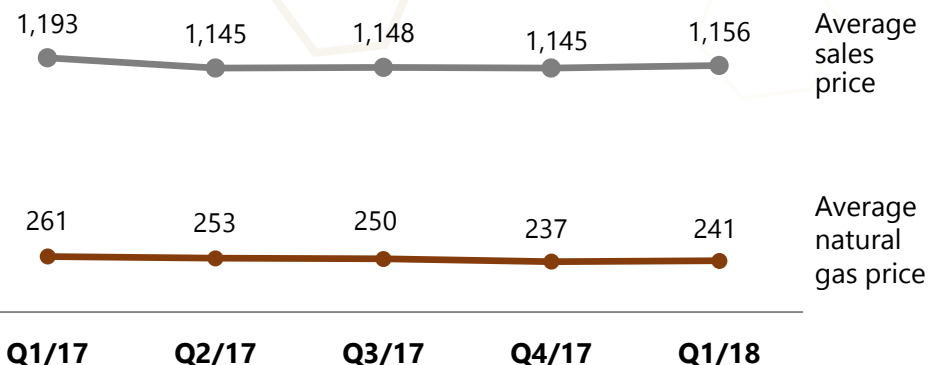
Quarter-on-quarter

+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.

Increase in cost of sales and services in Q1/18 mainly from full capacity operation of IRPC-CP

Quarterly cost of sales and services*

(THB Million)



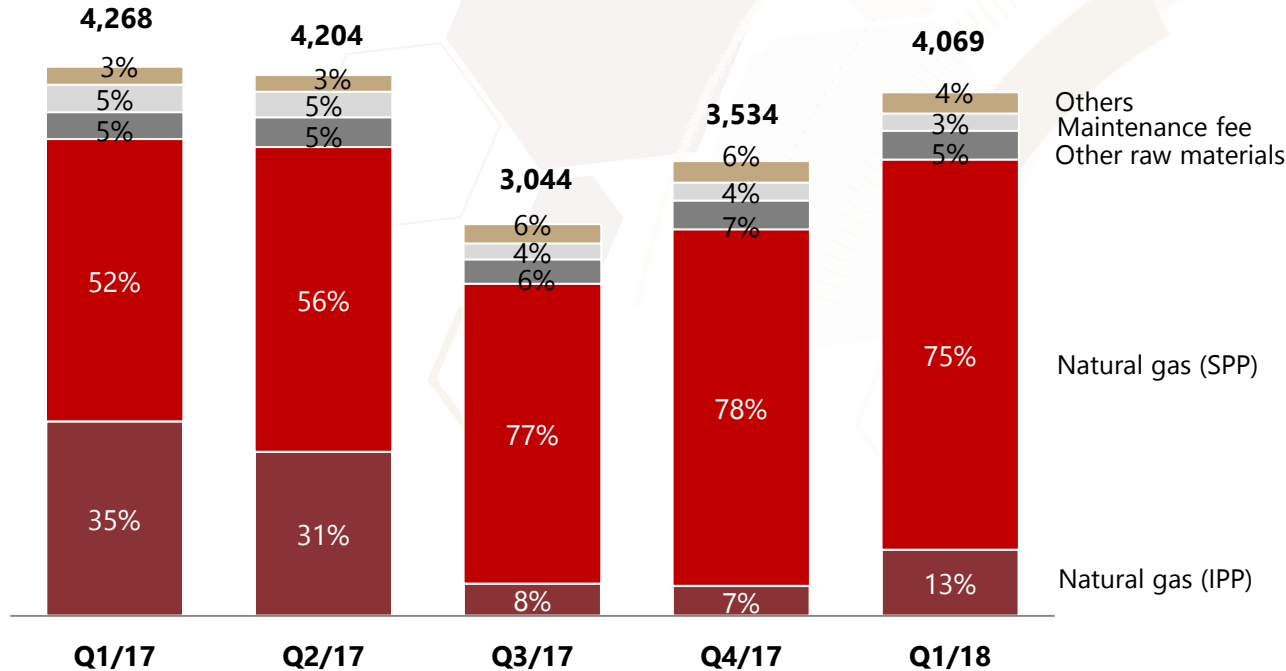
Year-on-year

-199 / 5%



Quarter-on-quarter

+535 / 15%



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 capacity operation for the first full quarter in Q1/18.

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.

Revenue and GPM by Major Plants

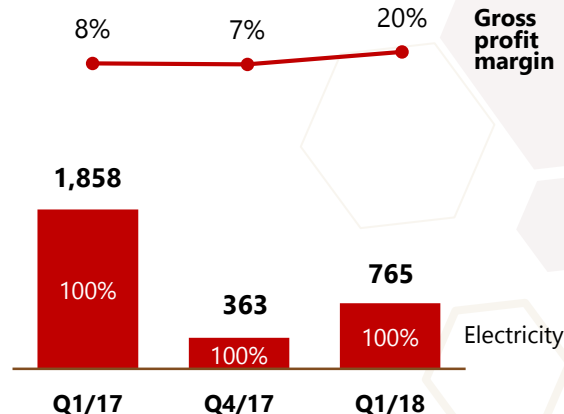
Sriracha Plant (THB Million, %)

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.

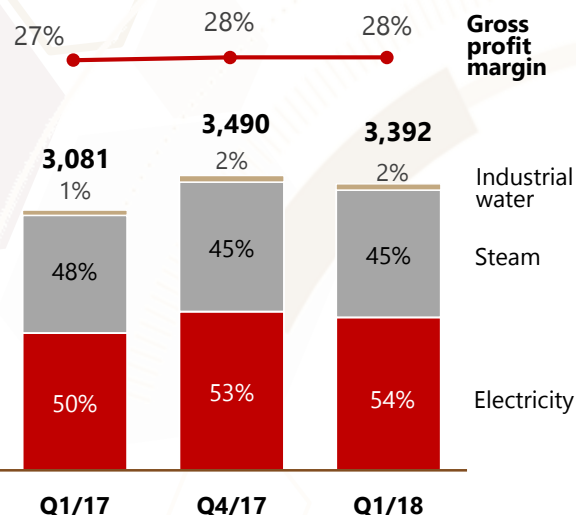
Rayong Central Utility Plants (THB Million, %)

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.

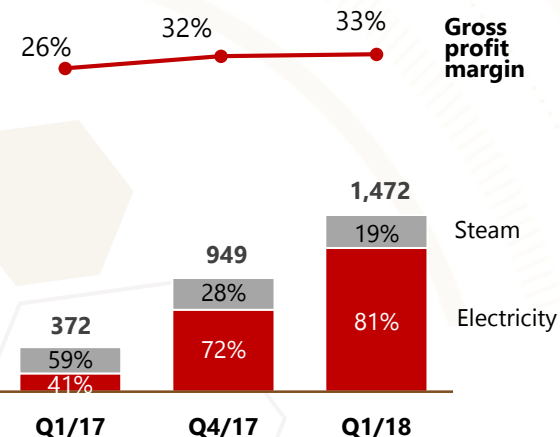
IRPC-CP Plant (THB Million, %)

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.

SPP is GPSC's main and prospering profit generator

Quarterly gross profit and gross profit margin*

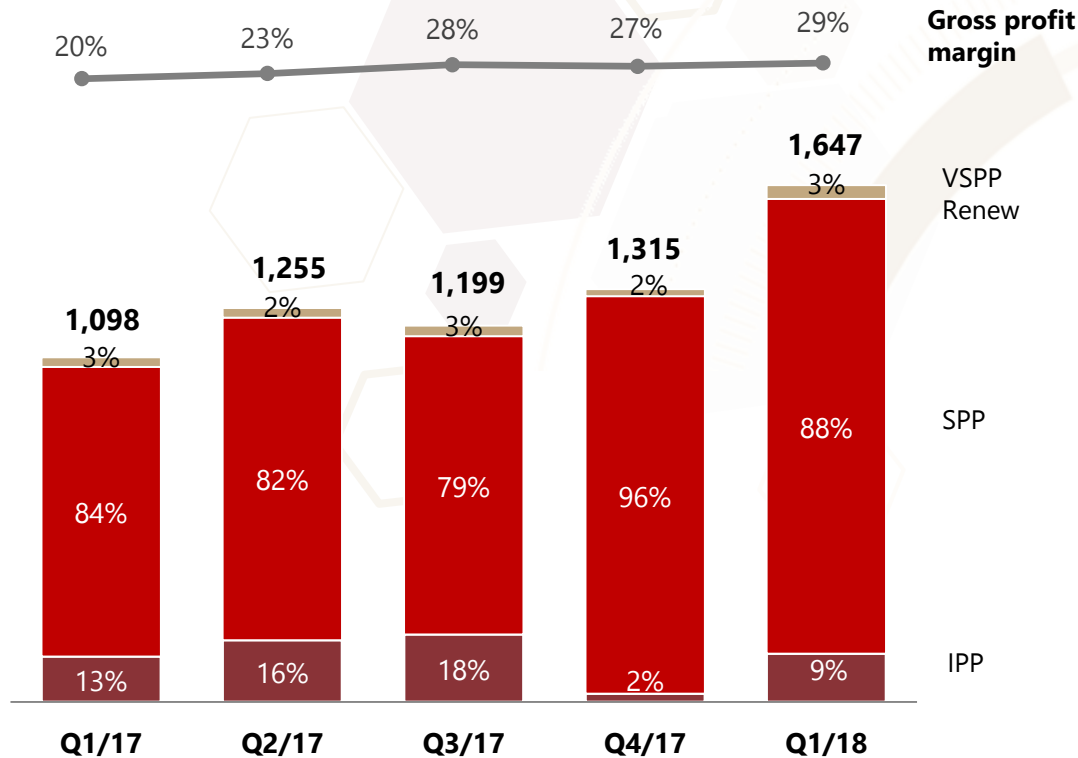
(THB Million, %)

Year-on-year

- ▲ GP +549 / 50%
- ▲ GPM +9%

Quarter-on-quarter

- ▲ GP +332 / 25%
- ▲ 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.

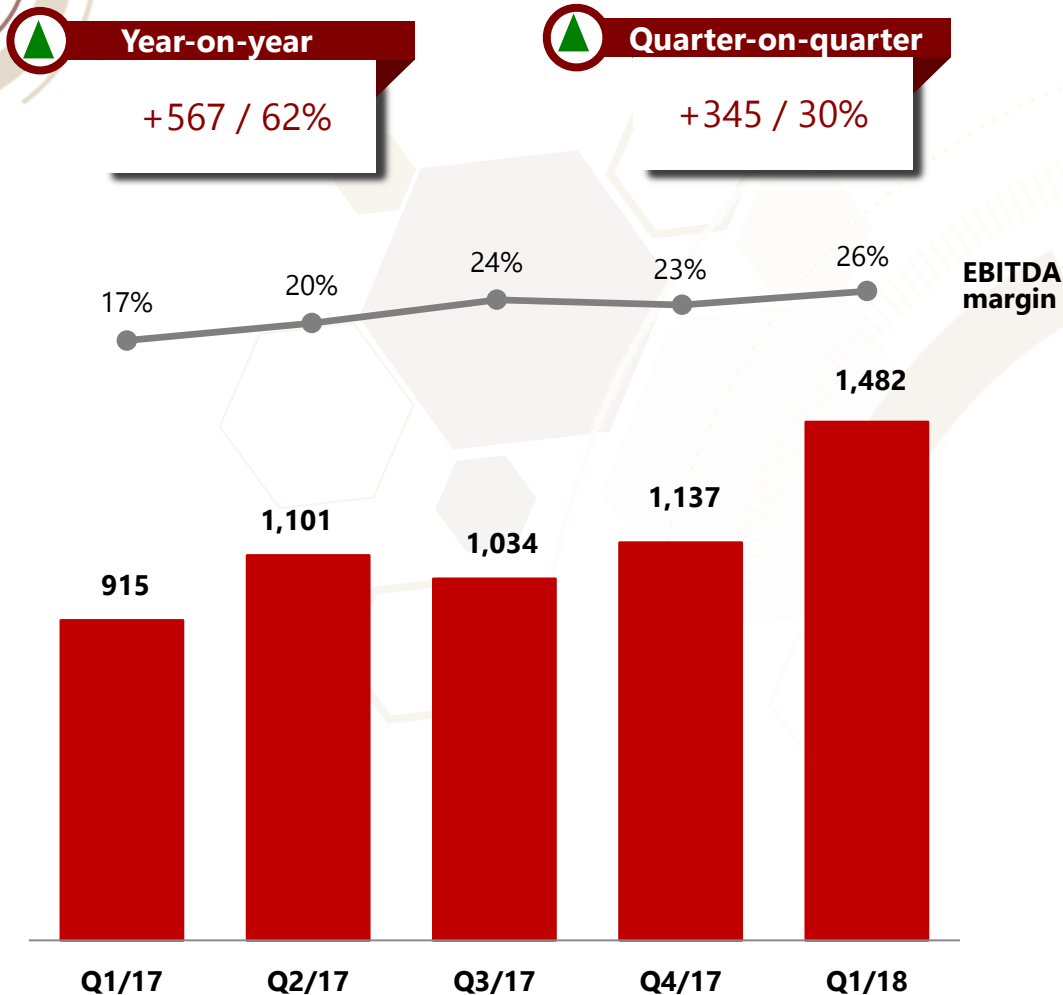
Q1/18 VS Q1/17 (YoY)

- Gross profit** in Q1/18 increased by THB 549 million or 50% from Q1/17 due to **the first full quarter that IRPC-CP started selling electricity to EGAT**, higher demand at Rayong plant together with higher Ft rate.
- Gross profit margin** increased by 9% in line with gross profit margin.

EBITDA increased by 30% QoQ

Quarterly EBITDA and EBITDA margin

(THB Million, %)



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.

Net profit grew 28% QoQ from strong operating earnings and supported by return from investments

Quarterly net profit and net profit margin

(THB Million, %)



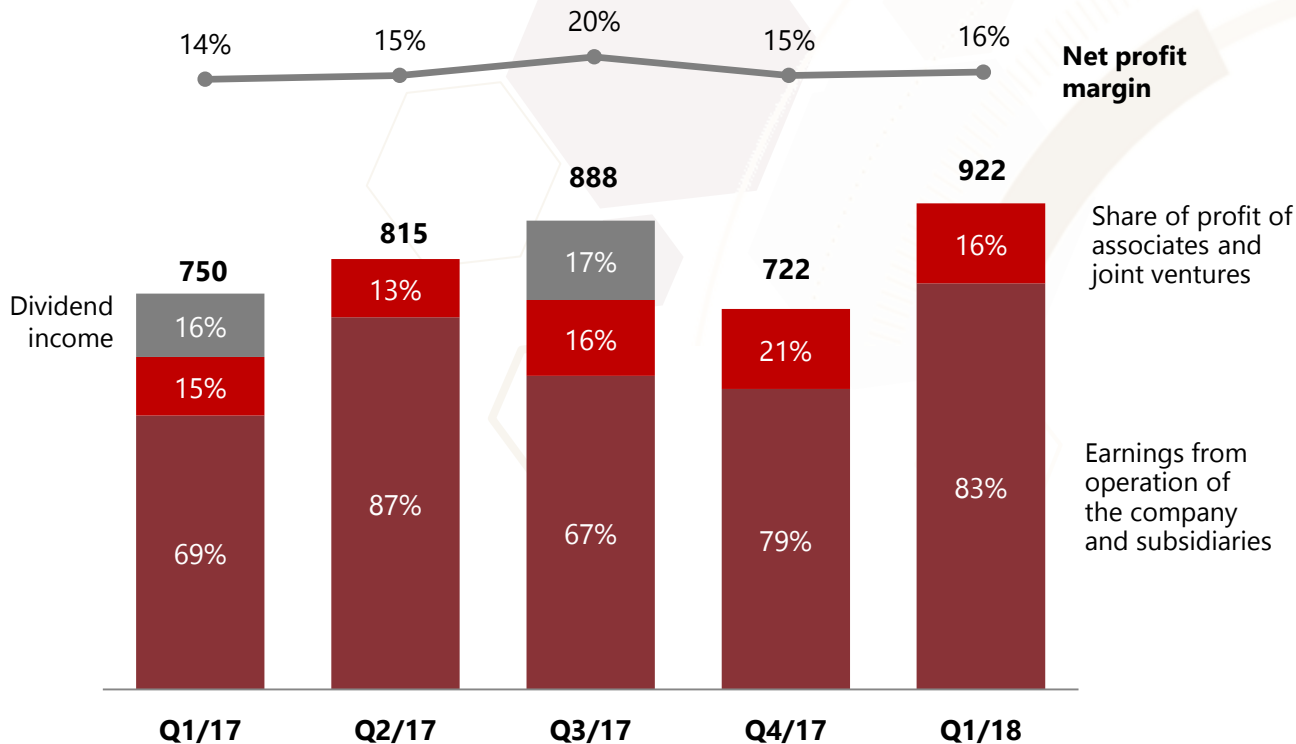
Year-on-year

+172 / 23%



Quarter-on-quarter

+200 / 28%



Q1/18 VS Q4/17 (QoQ)

Net profit in Q1/18 was THB 922 million increased by THB 200 million or 28% from Q4/17 resulted mainly from the full operation of IRPC-CP together with the rise in AP and EP of Sriracha Power Plant.

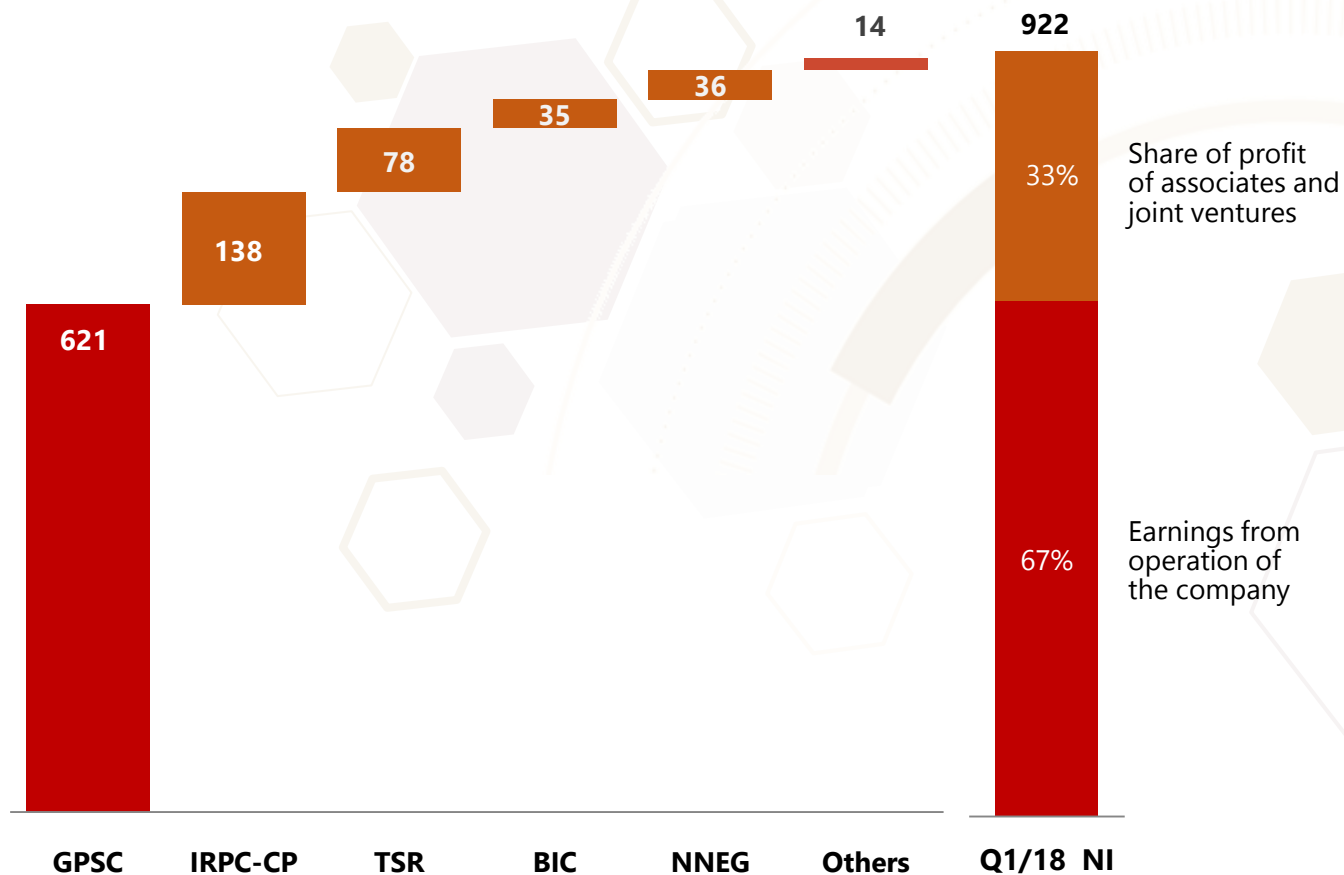
Q1/18 VS Q1/17 (YoY)

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.

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

Net profit breakdown by subsidiaries

(THB Million)



- 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.

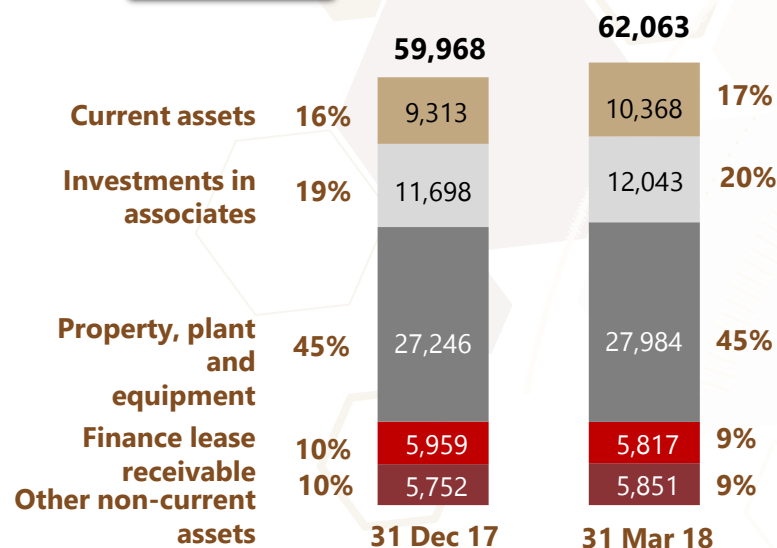
Summary of financial position of GPSC and its subsidiaries

Total Assets (THB Million)



Year-on-year

+2,095 / 4%



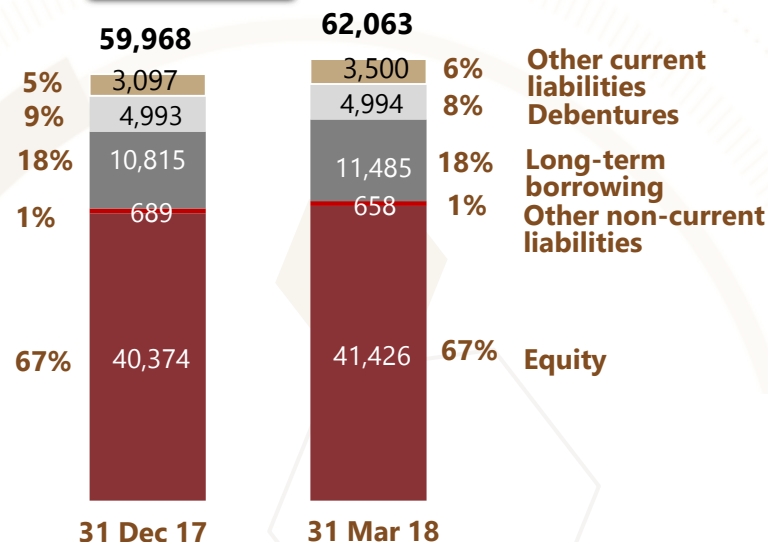
- Total assets were THB 62,063 million, increased by THB 2,095 million or 4% from 31 Dec 17.
- The increase was mainly from increases in cash & cash equivalent from operation and PPE from land & asset under construction of CUP-4 project.

Total Liabilities & Shareholders equity (THB Million)



Year-on-year

+2,095 / 4%

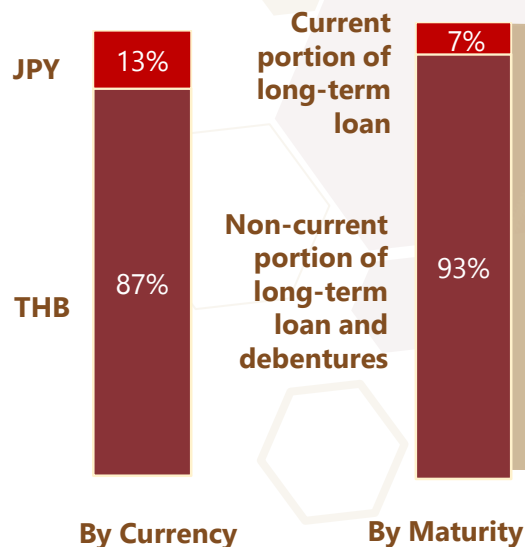


- Total liabilities were THB 20,637 million increased by THB 1,042 million or 5% mainly from long-term loan of IRPC-CP.
- Equity were THB 41,426 million increased by THB 1,052 million or 3% mainly from an increase in the appropriated retained earnings.

Well-managed debt profile and continuous deleveraging

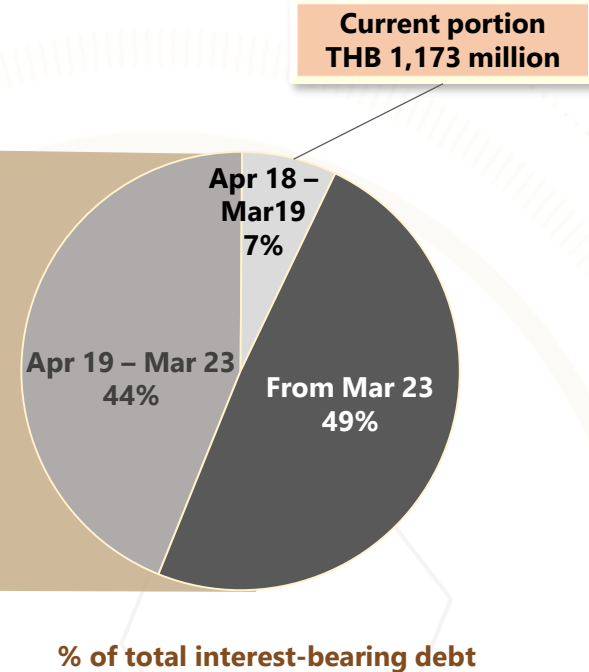
Debt profile

Total interest-bearing debt : THB 16,479 million



- All debt balance as at 31 March 2018 is in THB and JPY currency.
- The interest-bearing debt is comprised of long-term loan and debentures which includes 7% of current portion.

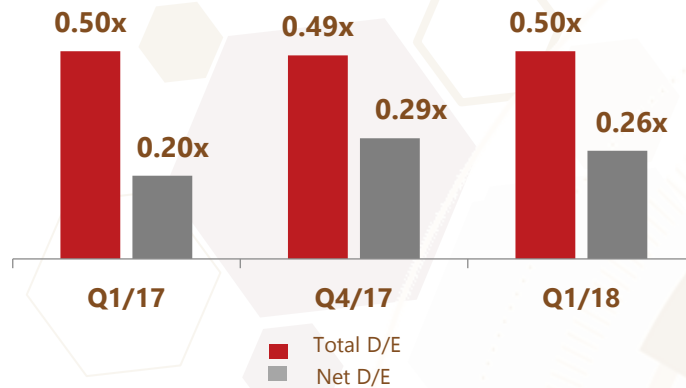
Debt repayment plan



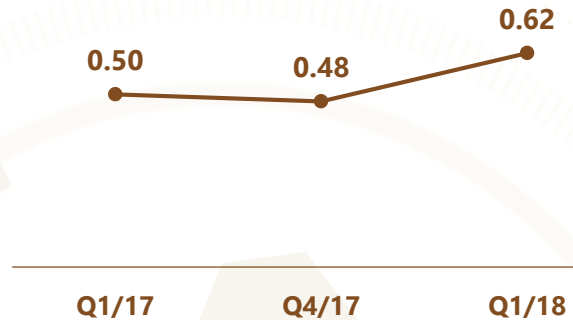
- Non-current portion of interest-bearing debt equals to THB 15,306 million while current portion equals to THB 1,173 million.
- 44% of total interest-bearing debt will be repaid between April 2019 – March 2023.

Key financial ratios support GPSC's strong financial position

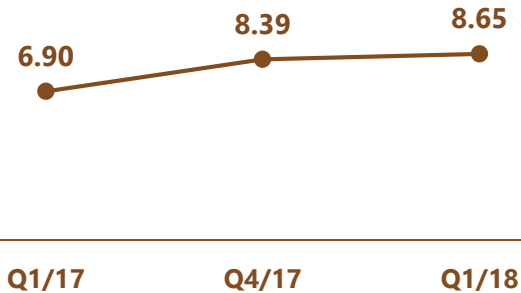
Total D/E and Net Debt/ Equity ratio (Times)



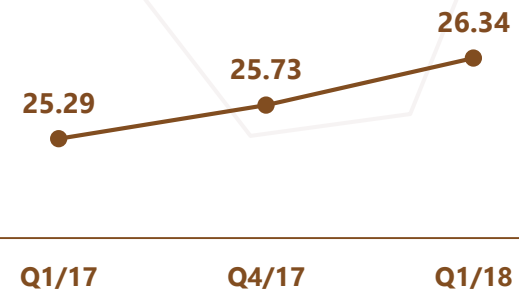
Earning per share (EPS) (Baht/share)



ROE (%)



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





THANK YOU

Global Power Synergy Public Company Limited

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

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IR Contact

Punnchalee Laothumthut
Pimploy Wichienprakarn
Janthakarn Chanhorm
Chayanant Seneenant

ir@gpscgroup.com

Tel. +662 140 4630

+662 140 4691

+662 140 5318

+662 140 4715

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)	$\frac{\text{Shareholder's equity for the company}}{\text{Average shareholder's equity for the company}}$

2018 Maintenance schedule: Sriracha and Rayong plants

Plant	Tag no.	Description	2018											
			Q1			Q2			Q3			Q4		
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CUP-1	H-13701	Aux. Boiler.11		16 1Y 26										
	N-13901	GTG11												
	H-13702	HRSG11			5 1Y 16									
	N-13902	GTG12												
	H-13703	HRSG12				7 1Y 17								
	N-13903	GTG13												
	H-13704	HRSG13							7 HG 20					
	N-13904	GTG14												
	H-13705	HRSG14		3 1Y 13										
	N-13961	GTG15												
	H-13761	HRSG15										16 1Y 26		
	N-13962	GTG16												
	H-13762	HRSG16	21 1Y 31											
CUP-2	H-23701	Aux. Boiler.21							1 1Y 11					
	N-23901	GTG21												
	H-23701	HRSG21			1 HG 14									
	N-23902	GTG22												
	H-23702	HRSG22						10 1Y 20						
	N-23911	Steam Turbine21												
CUP-3	H-33701	Aux. Boiler 31								4 1Y 14				
	H-33711	Aux. Boiler 32									26/9 1Y 6/10			
	H-33712	Aux. Boiler 33										4 1Y 24		
SRC	11MB	GT11												
	1-211-SG-101	HRSG#1										14/10	MO	01/12
	12MB	GT12										14/10	MO	01/12
	1-211-SG-201	HRSG#2												
	STG	Steam Turbine 10										14/10	MO	01/12

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

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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

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

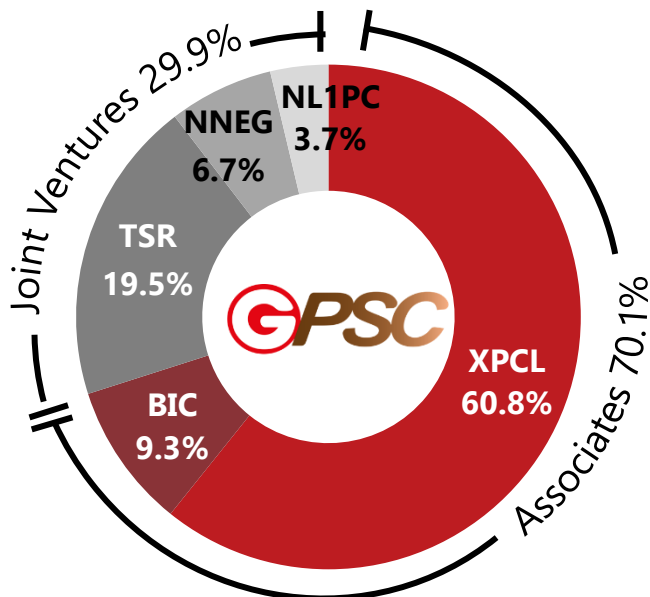
Plant	Unit	2018			
		Q1	Q2	Q3	Q4
IRPC-CP	Block 1				
	CTG 21	E	A		
	HRSR 21	E	YI		
	CTG 22	E	A		
	HRSR 22	E	YI		
	STG 23				
	Block 2				
	CTG 31				
	HRSR 31		E		A
	CTG 32		E		YI
	HRSR 32	B			
	STG 33	B			
	Aux. Boiler			YI	

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 Warrantee	3 days

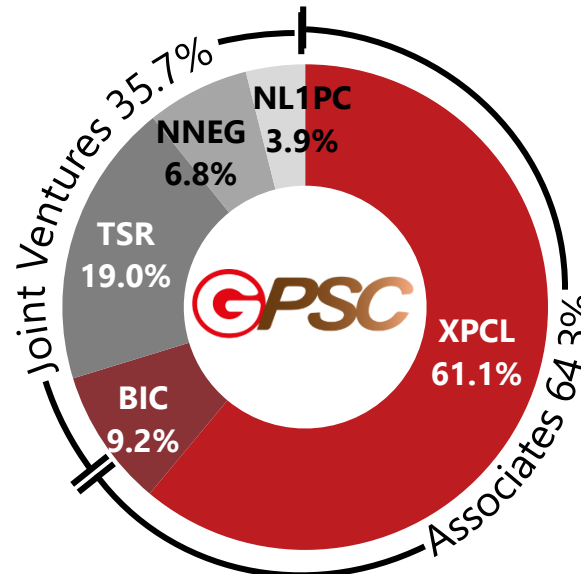
Proportion of GPSC's investment in associates and joint ventures at YE17 and Q1/18 (THB Million, %)

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 3.8% 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.

Quarterly share of profits from investment

(THB Million, %)



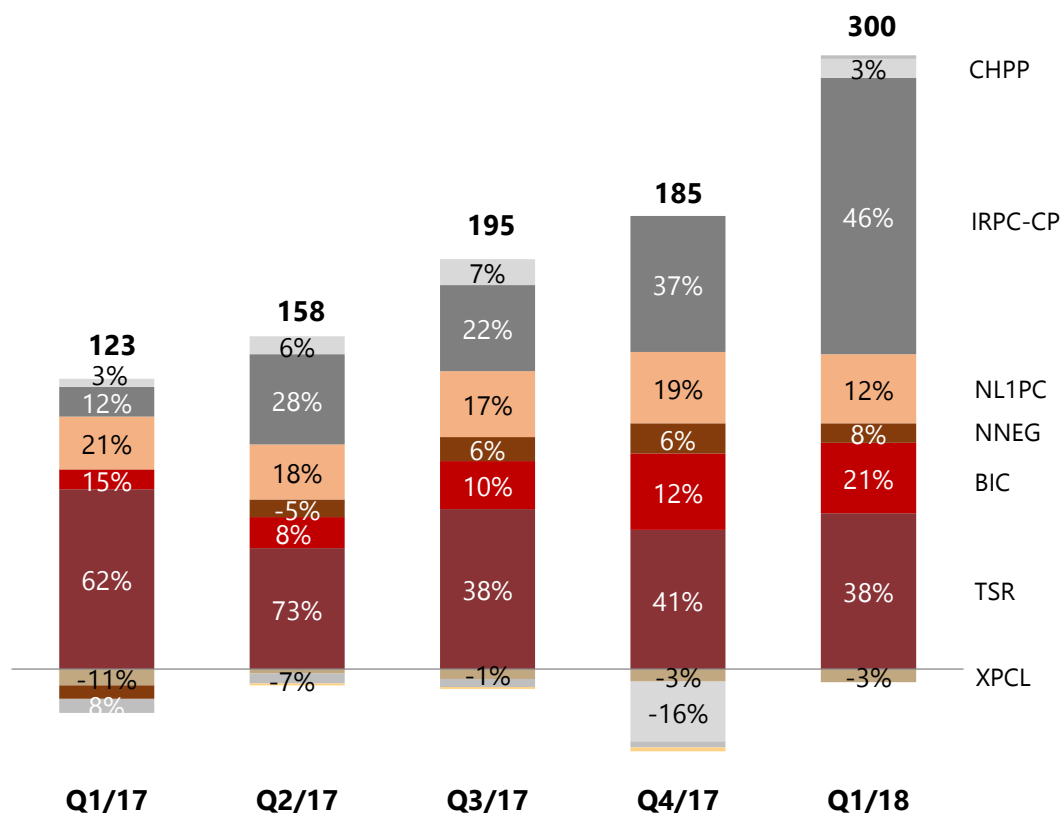
YoY

+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

(THB Million)



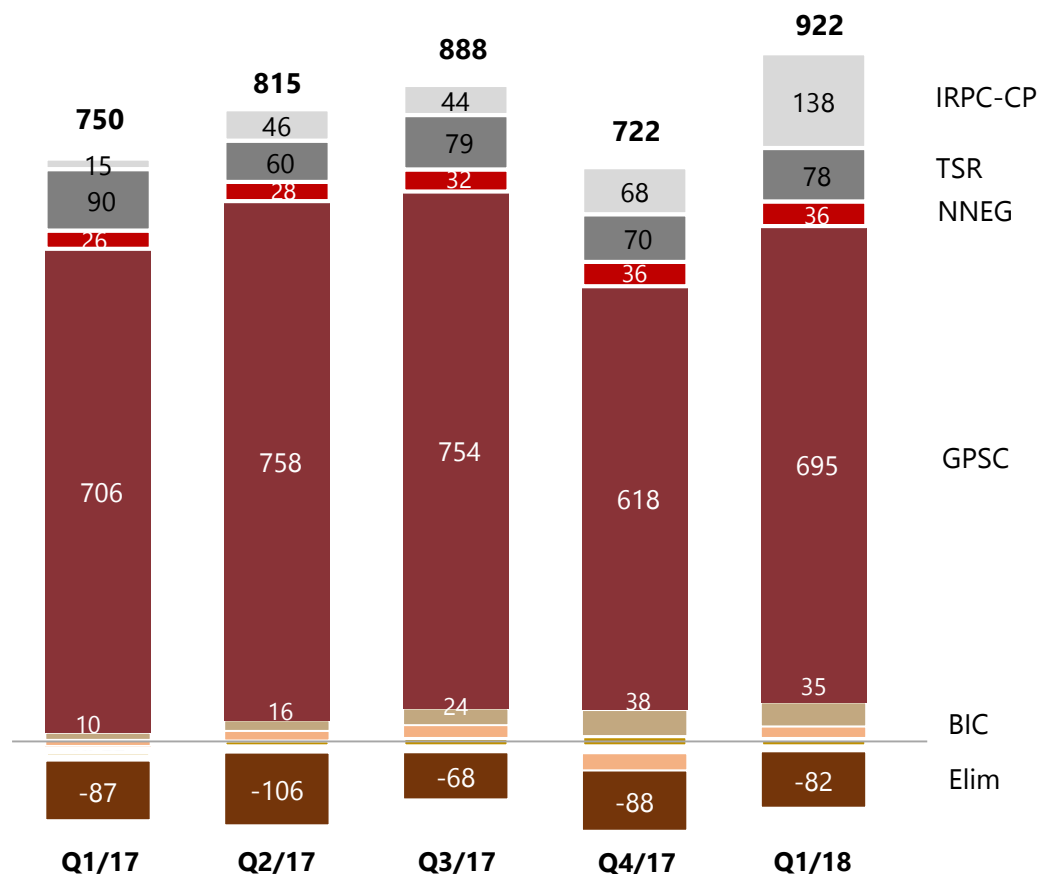
Year-on-year

+172 / 23%



Quarter-on-quarter

+200 / 28%



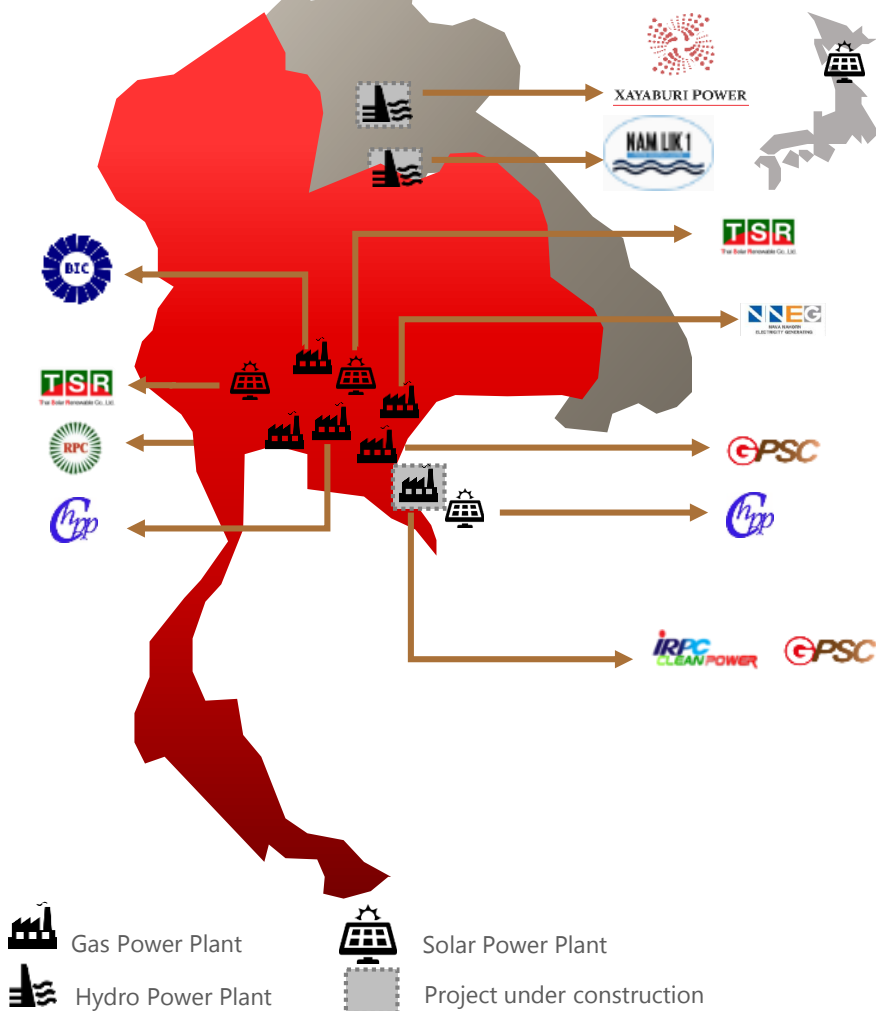
Q1/18 VS Q4/17 (QoQ)

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.

3 Countries



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



As of 9 May 2018, GPSC committed equity capacities below:

POWER		1,922 megawatts*
STEAM		1,582 tons/hour**
CHILLED WATER		12,000 refrigeration tons
INDUSTRIAL WATER		2,080 cu.m./hour

*Of 1,922 megawatts: operates 1,509 MW and under construction 413 MW

** of 1,582 tons/hour: operates 1,512 T/H

CAPACITY BREAKDOWN

1,922 equity MW

IPP

48%

SPP

31%

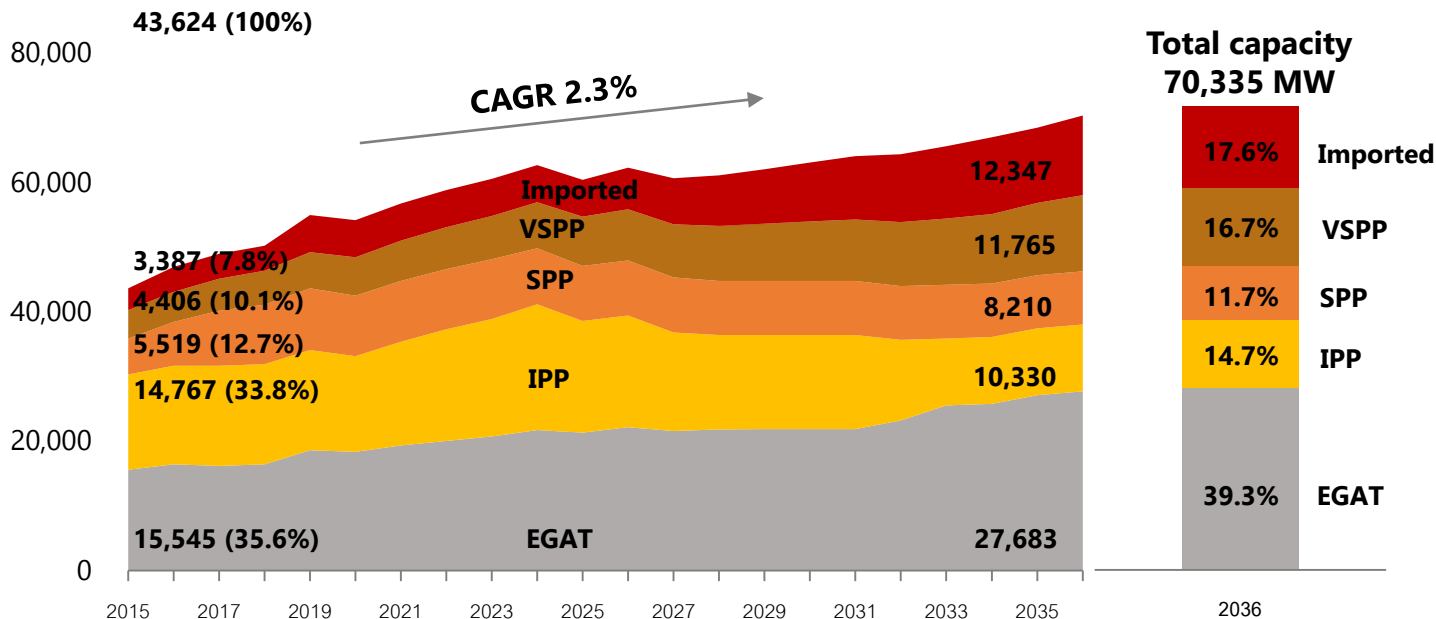
Renew & Hydro

21%

VSPP

0.003%

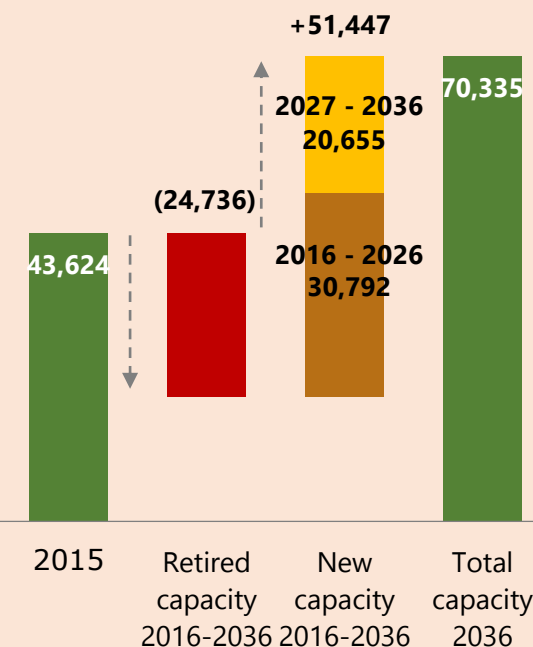
Projected Power Plant Capacity by producer type (MW)



- **2.3% CAGR** of the power generating capacity by producer type is expected in PDP 2015
- **By 2036, Imported & VSPP will increase its portion to 34.3%** of the total generating capacity which is nearly to EGAT's at 39.3%
- During 2027 – 2036 there is a large amount of **new contract capacity at 20,655 MW for GPSC to tap in**
- **Peak demand in 2016 occurred at night** because more than 1,200 MW of electricity produced from solar power plants in day time that distributed to MEA and PEA replaces production from EGAT IPP which this portion of electricity is not recorded by EGAT to accumulate the peak demand causing peak demand to shift from day to night time.

Thailand's power contract capacity during 2016-2036 (new and retired)

Unit: MW





Operating Assets

**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**

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

**Type:****VSP**

Combined heat and power
with district cooling

COD:

- 2008
- Electric chiller
Q1 2009

Shareholding:**Capacity:**

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

Customer:

Government complex

Contract:

- 30 Years
- End: 2038

**Type:**

VSP Solar

Capacity:

• **Electricity: 5 MW**

COD:

Q4 2016

Customer:

PEA

Contract:

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

Shareholding:



Type:

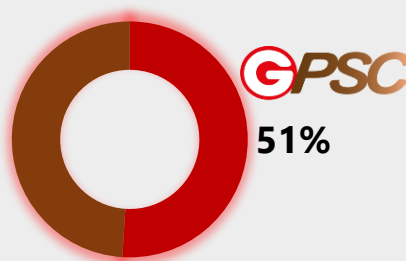
**SPP Firm
Cogeneration**

COD:

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

Shareholding:

**IRPC
49%**



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**





Type:

VSPP Solar

Capacity:

• **Electricity: 80 MW**

COD:

2013

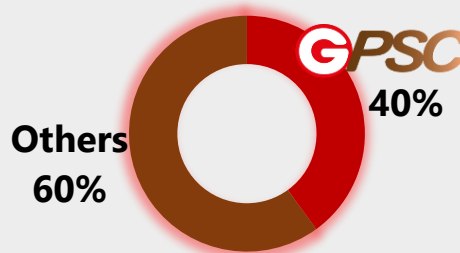
Customer:

PEA

Contract:

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

Shareholding:





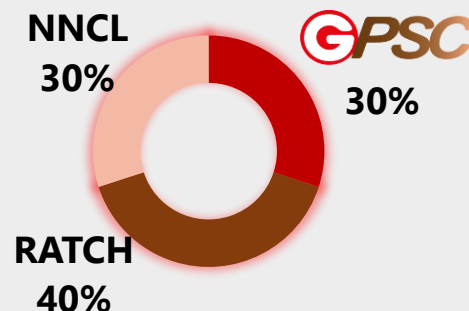
Type:

**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**



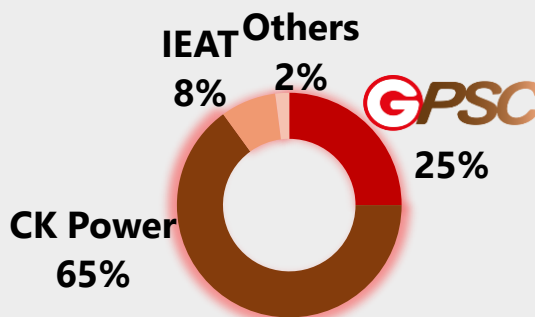
Type:

**SPP Firm
Cogeneration**

COD:

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

Shareholding:



Electricity:

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

Customer:

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

Capacity:

- EGAT 25 years

**Type:**

**IPP
Combined cycle**

Electricity:

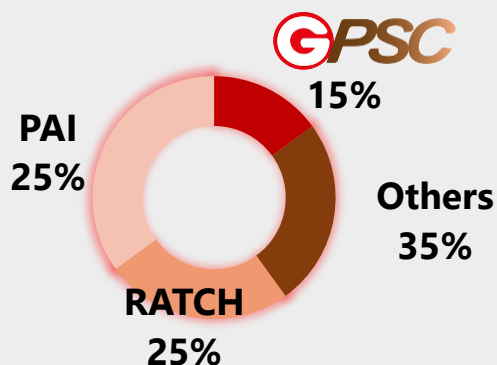
- **Electricity 1,400 MW**

COD:

Q1 2008

Customer:

EGAT

Shareholding:**Contract:**

- **25 years**
- **End 2033**



Business:

**Lithium-Ion Battery
(LFP) technology**

Application:

**Energy Storage System
(ESS)**

Shareholding:

