GLOBAL POWER SYNERGY PUBLIC COMPANY LIMITED

FY2019 Performance
OPPORTUNITY DAY

February 26th, 2020

THE INNOVATIVE POWER FLAGSHIP OF PTT GROUP

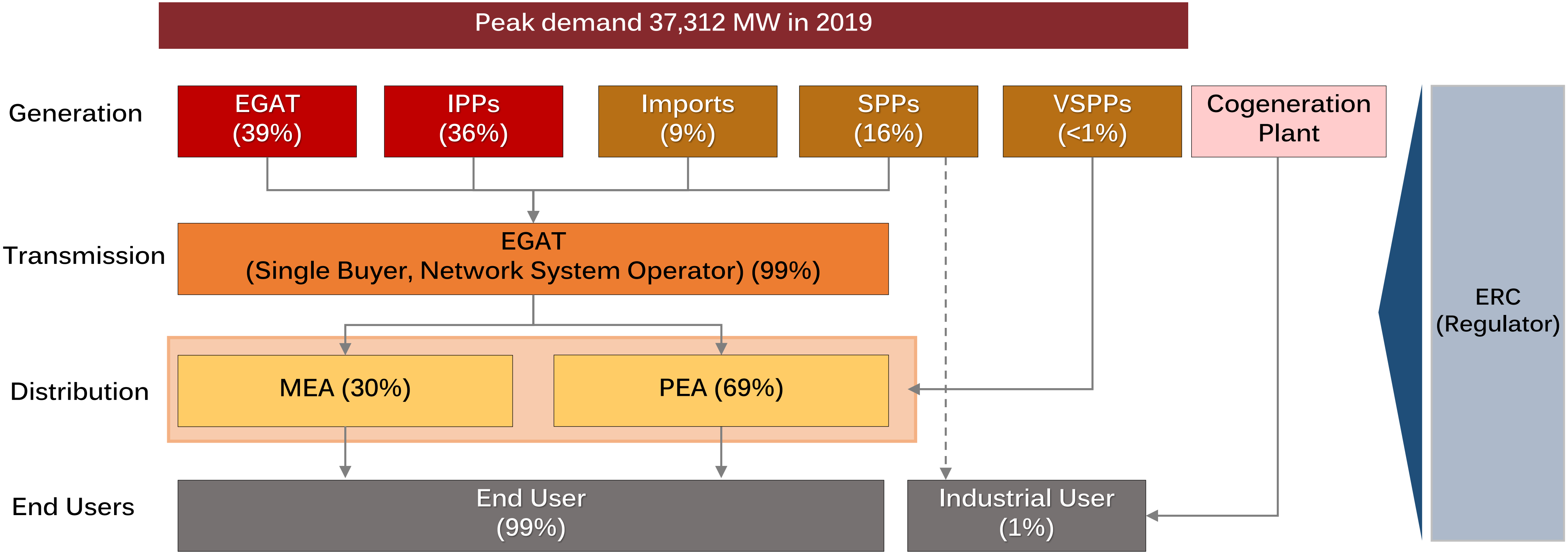
Petroleum Authority of Thailand PLC (PTT), GPSC's parent company : the largest energy conglomerate in Thailand

	Business Area	Company	PTT's Holding (%)	Activities
Upstream	E&P	PTTEP	65.29%	Exploration and production
	Coal	PTT Global Management	100%	Coal business
	LNG	PTT Global LNG PTT LNG	50% 100%	LNG value chain LNG receiving terminal
Intermediate	Gas	Gas Pipeline*	100%	Sole owner/operation of the transmission pipeline
		S&M*	100%	Supply & marketing of natural gas
		GSP*	100%	Extracting hydrocarbon contents in natural gas for petrochemical's feedstock
Downstream	Trading	Trading*	100%	Import/Export/Out-out trading of petroleum and petrochemical products
	Oil Marketing	PTTOR**	100%	Retail service stations and commercial marketing
	Petrochemical & Refining	PTTGC TOP IRPC	48.18% 48.03% 48.05%	Petrochemical flagship Refinery flagship Integrated refinery & petrochemical
Technology & Engineering	Power	GPSC	22.81%	Power flagship New S-Curve business of PTT group

Note: *Businesses directly operated by PTT PLC **Transferred asset to PTTOR on July 1, 2018
Source: PTT's Investor Update May 2019

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

Source: EGAT and GPSC

Power Plant Definition and Revenue Structure

IPP

Independent Power Producer (IPP):

- A large power producer who has entered into the Power Purchase Agreement (PPA) with contracted capacity more than 90 MW
- IPPs are obliged to sell their entire output to EGAT

SPP

Small Power Producer (SPP) / Cogeneration (Cogen):

- A small power producer who sell their electricity to EGAT* and sell their electricity and utilities (e.g. steam, industrial water, chilled water) to Industrial customers (IUs)

Contract Type:

EGAT:
- Firm: Contract term > 5 years ; CP + EP (+ FS)**
- Non-Firm: Contract term <= 5 Years; Only EP_{NF}

IUs: Commercial contract as agreed.

VSPP

Very Small Power Producer (VSPP):

- A very small generator whose power generating process is generated from renewable energy, cogeneration, biogas, biomass, waste heat, etc. with contracted capacity no more than 10 MW of electricity capacity
- VSPPs are able to sell power to the Distribution Utility Authority only

Availability Payment	+	Fuel 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)		

* Under various type of contracts. ** Fuel Saving (FS)
*** Reference rate with conditions; https://www.pea.co.th/Documents/Rate2015.pdf

Base Tariff	+	Ft	+	adder
Feed in Tariff				

GPSC

GPSC's History & Key Milestones

GPSC was founded in 2013 to be "the Power Flagship of PTT Group". Since its inception, GPSC has proved its strong expertise in operating existing power plants, and prudently investing in the new projects.

1997

Independent Power (Thailand) was established (700 MW, IPP)
(Renamed to " Sriracha Power Plant")

2004

PTT Utility was established (339 MW, SPP)
(Renamed to "Rayong Power Plant ")

2013

All PTT's power assets were consolidated under GPSC

2014

8 of PTT's power assets were transferred to GPSC

2015

GPSC was Listed on the Stock Exchange of Thailand (SET)

2016

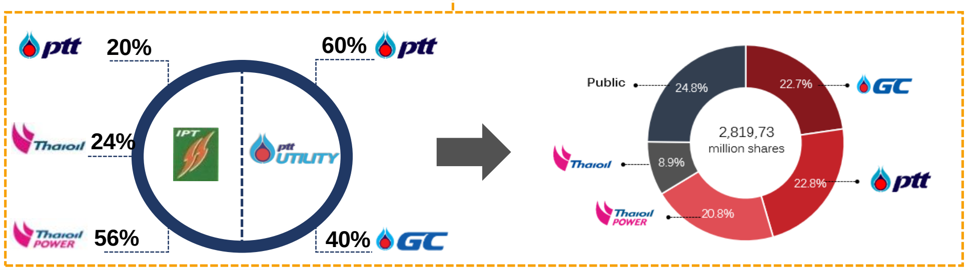
Included in the Asia Pacific ex Japan FTSE, ESG 100, and SET50 Index

2018

GPSC entered into a share purchase transaction and tender offering of all the remaining securities of Glow Energy Public Company Limited (GLOW)

2019

- GPSC completed the tender offer on 28-Nov-2019 and has obtained accumulatively 99.83% of GLOW's shares and plan for delisting of GLOW securities in Dec-2019
- GPSC has completed the Equity Offering of THB 74,000 million and Debenture of THB 35,000 million
- GPSC announced the capital increase from the existing capital of THB 14,983 million to THB 28,197 million
- As of 2019, GPSC's current electricity generating according to Equity MW is 5,026 MW of electricity



GPSC's VISION and MISSION

VISION

The Global Leading
Innovative and Sustainable
Power Company

MISSION

- Create long-term shareholders' value with **profitable growth**
- **Deliver reliable energy** through operational excellence to customers
- Conduct business with **social and environmental responsibility**
- Seek **innovation in power and utility** efficiency management through energy storage technology

GPSC Customers' Profile on Q4/2019

55% Industrial Users

44% EGAT

1% Others

Q4/2019 Revenue by Customers

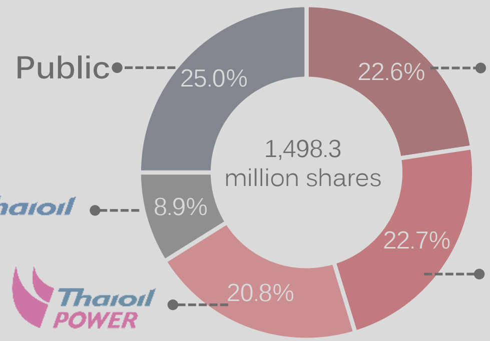
LONG TERM OFF TAKE CONTRACTS

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

GPSC Innovative Power Company at a Glance

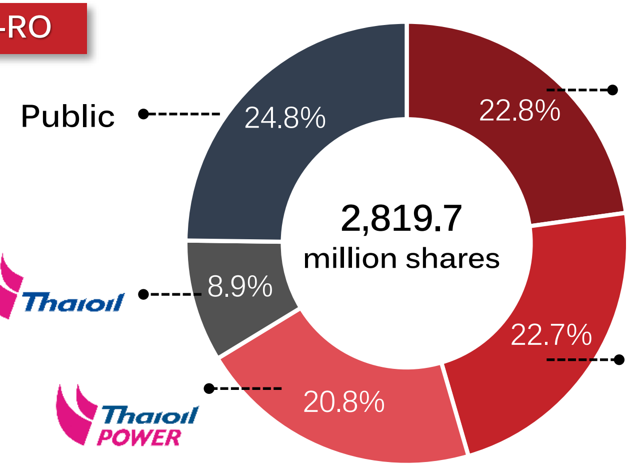
Shareholding Structure

Pre-RO



Thai Oil Power is 74% held by Thai Oil and 26% by PTT

Post-RO



Company Information

Head Office	555/2 Energy Complex Building B, 5th Floor, Vibhvadi-Rangsit Road, Chatuchak, Bangkok, Thailand
Business Type	Energy & Utilities
Registered Capital (Paid-up)	THB 28,197 million
Market Cap (As of 20 Feb 2020)	THB 205,840.24 million

TRIS RATING	AA-
FitchRatings	A+(tha)
STANDARD &POOR'S	BBB-

In 2019, Total Equity Capacity[1]

Electricity 5,026 MWe

Steam 2,876 T/H

COMBINED CYCLE / COGENERATION / THERMAL[2]

- 4,463 MW
- 2,876 T/H
- 15,400 RT
- 7,372 Cu.m./H

RENEWABLE ENERGY

- 114 MW

HYDROELECTRIC

- 449 MW

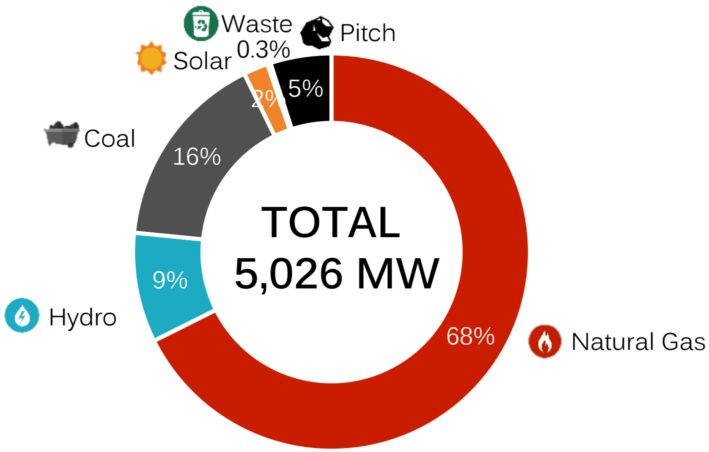
OTHER BUSINESSES

- 24M
- BSA

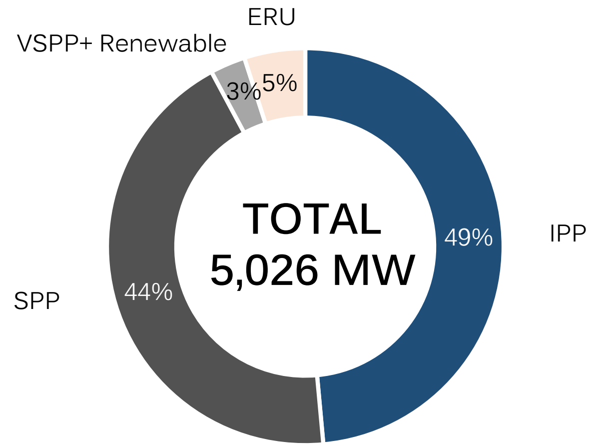
Note: 1) Equity capacity includes 100% stake in GLOW, GRP and ERU
2) Equity capacity includes ERU

GPSC's Business
Portfolio by Fuel and Plant Type

Equity Capacity by fuel types



Equity Capacity by Plant Type



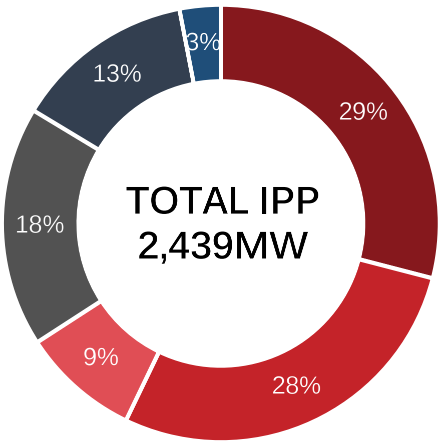
Energy Type	Installed MW			Equity MW		
	Total capacity	%	In operation	Total capacity	%	In operation
Natural gas	5,047	63.00%	4,987	3,399	67.64%	3,381
Hydro	1,502	18.75%	1,502	449	8.94%	449
Coal	1,045	13.04%	1,045	814	16.20%	814
Solar	149	1.86%	109	101	2.00%	61
Waste	18	0.23%	9	13	0.25%	3
Pitch	250	3.12%	-	250	4.97%	-
Total	**8,011**	**100%**	**7,652**	**5,026**	**100%**	**4,708**

Energy Type	Installed MW			Equity MW		
	Total capacity	%	In operation	Total capacity	%	In operation
IPP	4,910	61.29%	4,910	2,440	48.54%	2,440
SPP	2,614	32.63%	2,554	2,192	43.61%	2,174
VSPP + Renewable	237	2.96%	188	144	2.87%	94
ERU	250	3.12%	-	250	4.97%	-
Total	**8,011**	**100%**	**7,652**	**5,026**	**100%**	**4,708**

Note: Equity capacity includes 100% stake in GLOW, GRP and ERU
GPSC Portfolio as of end-2019

GPSC's Business Portfolio by Plant Type

IPP (49%)

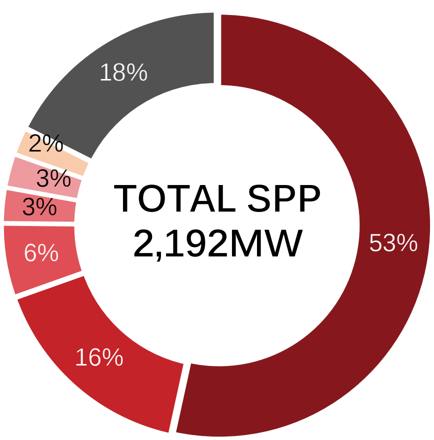


Natural gas	
Sriracha Power Plant	700MW
GLOW IPP	677MW
Ratchaburi Power (RPCL)	210MW

Coal	
GHECO-ONE	429MW

Hydro	
Xayaburi Power (XPCL)	321MW
Houay Ho	102MW

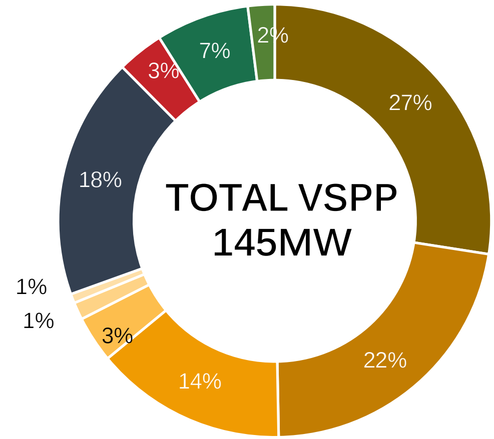
SPP (43%)



Natural gas	
Glow Co-Generation	1,171MW
Rayong CUP 1-3	354MW
IRPC-CP (Phase 1-2)	122MW
Bangpa-in Cogeneration BIC (Phase 1-2)	59MW
NNEG	56MW
Rayong CUP 4	45MW

Coal	
Glow Co-Generation	385MW

VSPP and Renewable (3%)



Solar	
Global Renewable Power (GRP)	39.5MW
Thai Solar Renewable TSR (SSE1)	32MW
Ichinoseki Solar Power (ISP1)	21MW
Combined Heat and Power Producing (CHPP Solar)	5MW
Glow Energy Solar PV Rooftop	2MW
Glow Energy Solar Plant	1MW

Hydro	
Nam Lik 1 Power (NL1PC)	26MW

Natural gas	
CHPP	5MW

Waste	
Rayong WTE	10W
Chonburi Clean Energy (CCE)	3MW

ERU (5%)

Thaioil

Pitch	
Thaioil	250MW

GPSC Associates and Joint Ventures

Note: Equity capacity includes 100% stake in GLOW, GRP and ERU
GPSC Portfolio as of end-2019

GPSC

2019 KEY HIGHLIGHTS

'GROWING PROFIT WITH SUSTAINABILITY AND CONTROL'

SIGNIFICANT GROWTH

- The acquisition of GLOW's shares was achieved on 14 Mar 2019. GPSC finished **the Rights Offering process of Baht 74,000 million** on 9 Oct 2019 and **the debentures of THB 35,000 million** on 8 Nov 2019
- GPSC completed the **Delisting Tender Offer of GLOW** on 2 Dec 2019 and GLOW has been **delisted from being listed on the SET** on 13 Dec 2019. On 31 Dec 2019, GPSC holds 99.83% of the total issued shares of GLOW.
- **TRIS Rating assigns "AA-" with "stable" outlook to GPSC** reflects company's strong credit profile

PROFIT

208% increase in EBITDA EBITDA from 2018 due to contribution from GLOW and higher AP from Sriracha Power Plant

54% of Adjusted Net Income increased from 2018 due to recognition of GLOW and the commencement of commercial operation of our investment projects in 2019

Value added from synergy

THB 1.6 bn ramp up with full EBITDA contribution by 2024

On 31 Dec 2019, GPSC was able to recognize the synergy value approx. **Baht 76 million**

SUSTAINABILITY

- **Dividend THB 1.30 per share** for the year 2019 and GPSC will pay the remaining dividend for 2H-19 at THB 0.80 per share on April 17, 2020
- **Awards**
  - **CFO of the year award 2019 in Treasury, Trade, Supply chain and Risk management from 'The Asset' magazine**
  - **The Asset corporate 2019** in ESG: Platinum Award, Best IR Award and Best Initiative award- Innovation: ESS solution
  - **Sustainability Excellence Award in Rising star** and **Thailand Sustainability Investment** (THSI) award from SET Award 2019
  - **Best Cross-Border M&A Deal Award from** 'The Asset' Triple A Country Award 2019
  - **Asian Excellence Award 2019**: Asia's **Best CEO** and **Best Investor Relations Company** from Corporate Governance Asia Magazine

CONTROL

✓ **COD projects in 2019**

- **Namlik 1** was COD on 1 Jul 2019
- **CUP-4** was COD on 12 Sep 2019
- **Xayaburi** was COD on 29 Oct 2019
- **CCE** was COD on 7 Nov 2019

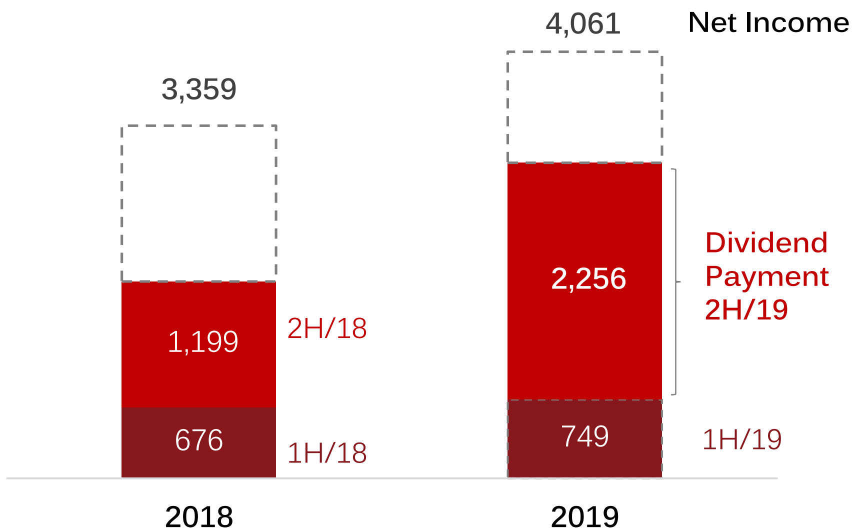
Project under construction

- **NNEG** expansion phase expected to COD in 2020
- **WTE** is expected to COD in 2021
- **ERU** jointly operate with Thaioil is expected to COD in 2023

GPSC Announce Dividend Payment 2019

Dividend Policy: Minimum dividend at the rate of not less than 30 percent of the net profits according to the financial statements of the Company after the deduction of tax, reserved funds as required by law (with additional conditions)

Dividend Payment (THB Million)



Payout (% of NI)	
56%	74%

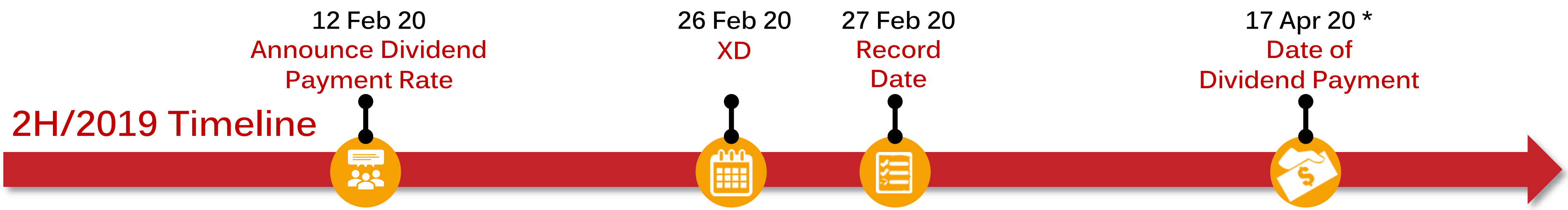
GPSC announces 2019 dividend payment, at the rate of Baht 1.30 per share

1H-2019:	Baht 0.50 per share	Paid on 12-Sep-2019
2H-2019:	Baht 0.80 per share	Will be paid on 17-Apr-2020
	*Subject to approval from the 2020 AGM	

The dividend payment is the result of:

- ✓ Successful acquisiton of GLOW
- ✓ The better operating performance in 2019 from continuous growth of 4 projects that is COD in 2019 and the higher Availability Payment (AP) and the increase in Contracted Availability Hours (CAH) as well as management of the maintenance contract of Sriracha Power Plant

2H/2019 Timeline



GPSC Growth and Strategic Direction

Update of projects

Financial Activities and Plans

Financial Performance

GPSC Electricity Growth Pipeline

2019

4,708 MW
Equity Capacity

Inorganic Growth
GLOW +2,771MW
Note: Base on 100% in GLOW

COD of projects
XPCL +321MW
NL1PC +26MW
CUP 4 +45MW
CUP 3 Expansion +15MW
CCE +2.8MW

2020

4,766 MW
Equity Capacity

Inorganic Growth
GRP +39.5MW

COD of projects
NNEG Expansion+18MW

NTP projects
GLOW SPP Replacement* Stage 1

2021

4,776 MW
Equity Capacity

COD of projects
GPSC Rayong WTE +10MW

2022 - 2023

5,026 MW
Equity Capacity

COD of projects
Thaioil ERU +250MW

NTP projects
GLOW SPP Replacement* Stage 2

Target 2020 - 2025

SELECLTIVE GROWTH

Go along with PTT Group

Conventional Energy
(Thailand and International)

Renewable Energy
(Solar and Wind)

Note: * As of end-2019, we received the confirmation of 6 EGAT PPAs.
We approved the investment of SPP Replacement Stage 1 (New power plant for 2PPAs and IUs).
Now, we're in the process of developing the SPP Replacement Stage 2.

Strategic Direction and Growth Strategy

3S Strategy

SYNERGY & INTEGRATION

- Synergy Capture
- Operation Excellence & Asset Optimization
- Corporate & Business Infrastructure

SELECTIVE GROWTH

- Go along with PTT Group
- Domestic and International
- Renewable

S-CURVE

- Battery Business
- Energy Storage System Integrator
- Energy Management Solution Provider

Strategic Direction and Growth Strategy

Synergy & Integration

SYNERGY & INTEGRATION

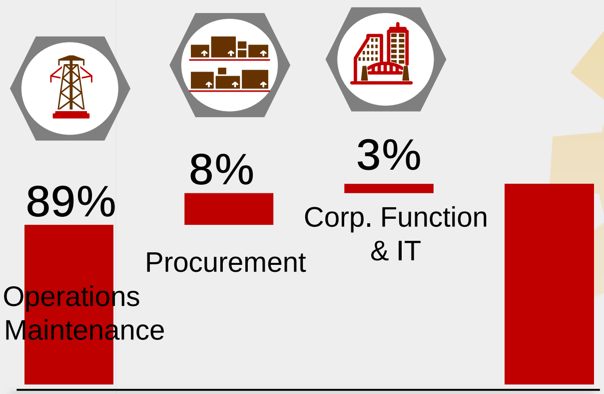
- Synergy Capture
- Operation Excellence & Asset Optimization
- Corporate & Business Infrastructure

Synergy and Integration Implementation

GC INFINITE POWER

Working as one team to **deliver synergy**

Recurring EBITDA synergy value based on current portfolio



THB+1.6 bn per year

Ramp up with full EBITDA/1 contribution by 2024

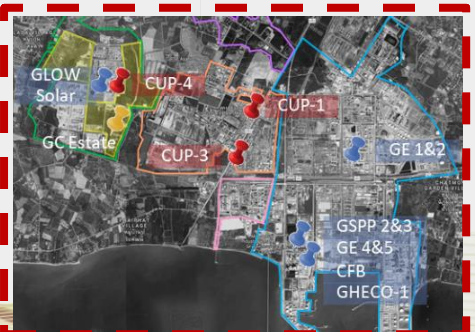
THB - 4.0 bn

One-time initial investment

2019 endorse selected initiatives to lock-in value

On 31 Dec 2019, GPSC was able to recognize the synergy value of approx. Baht 76 million from

- The cash management following the GPSC Group policy
- Increasing the efficiency of procurement
- Managing and reducing inventory costs by applying digital systems such as the E-Auction



In 2020, focus will move from identifying the potential to delivering the promise

- **Execution focus** : *Move to monitoring and controlling*
- **Speed of delivery** : *Prioritization and Planning*
- **Enablement & Ownership transfer**

GPSC

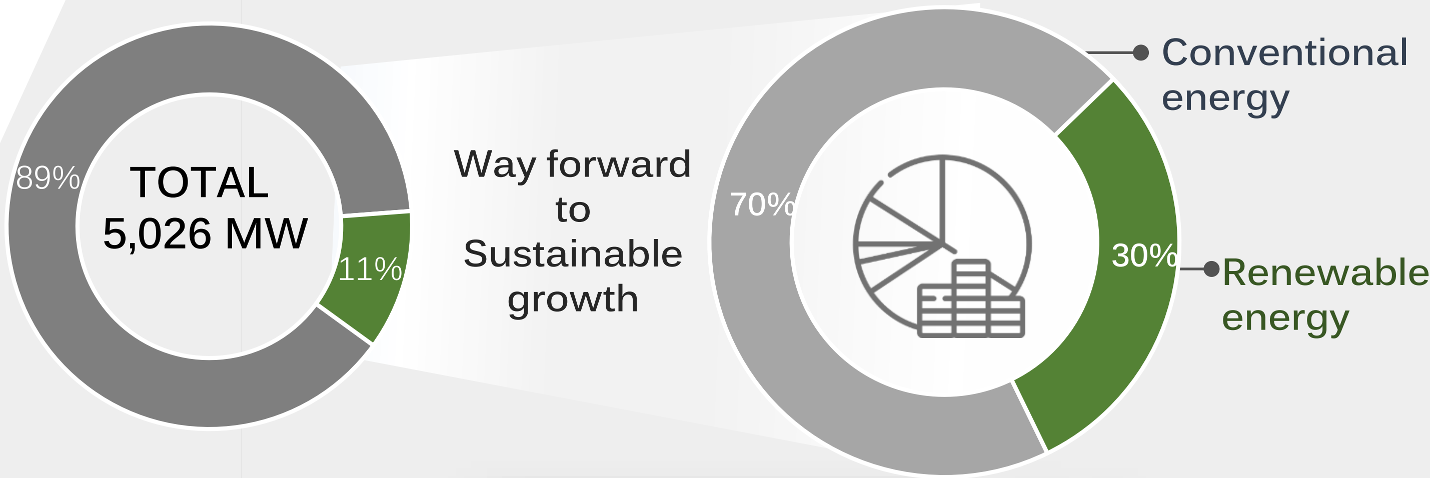
Strategic Direction and Growth Strategy

Selective Growth

- Go along with PTT Group
- Domestic and International
- Renewable

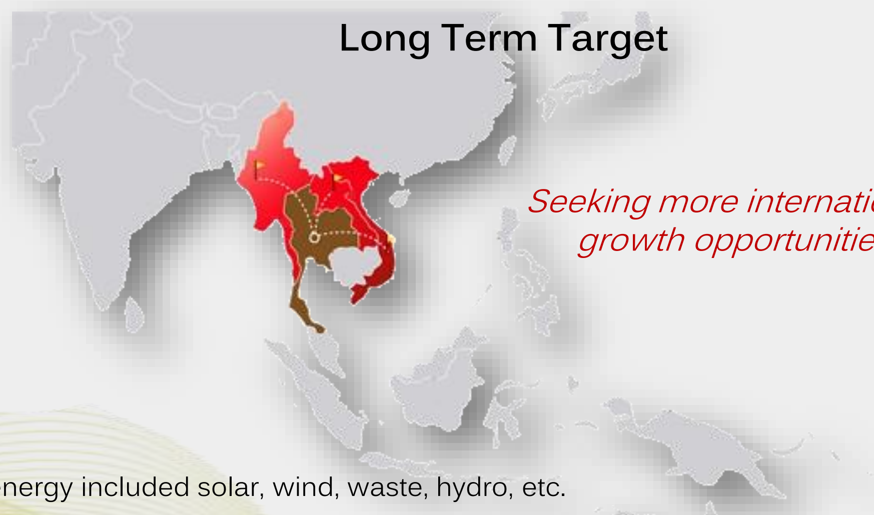
Sustainability Strategy & Commitment

- To be listed in **DJSI by 2022**
- Increasing renewable energy up to **30% of GPSC's installed capacity**



Committed Equity Capacity 2019-2023

Long Term Target



Seeking more international growth opportunities

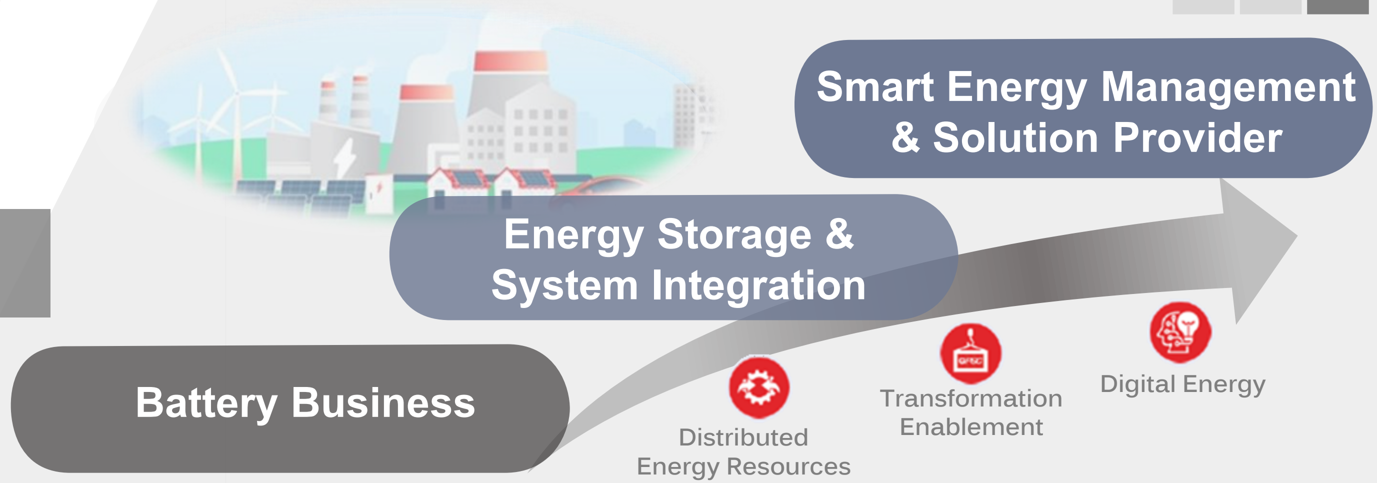
Note: Renewable energy included solar, wind, waste, hydro, etc.

Strategic Direction and Growth Strategy

S-curve

- Battery Business
- Energy Storage System Integrator
- Energy Management Solution Provider

The Journey of PTT and GPSC New S-Curve



VISTEC — Smart Energy Management (Phase II: Q2/2020)

- ✓ 1.2 MW Renewable Energy (Solar Roof + Floating)
- ✓ 1.2 MWh ESS for backup & renewable optimization, and zero-Import Building
- ✓ P2P Trading using Block-chain

GC — ESS for GC's Innovation Center (Completion : Dec-2019)

- ✓ Increase gas engine efficiency
- ✓ Peak shift with ESS
- ✓ 250kW/1.5MWh
- ✓ Emergency backup power

GPSC Energy Storage System Projects Information and Status:

Type	Customer	Capacity	Status
Residential	Chiang Mai U	10kW/17kWh	Complete
Industrial	GCL	625kW/625kWh with 2MWp solar	Complete
Industrial	GC	250kW/1.5MWh	Complete
Smart City	VISTEC	1MW/1MWh	Contructing

Complete Contructing

S-Curve Business : Shift Design to Decide

The New Energy Economy

R&D

Technology development in Lab

From Lab to Reality

Proven Technology

Pilot Scale

- Pre-Marketing
- Proven cost
- Partner for scale up
- Benchmarking

Commercial Scale

Build wider applications and scale-up to global

GPSC Growth and Strategic Direction

Update of projects

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Nam Lik 1 Power Company Limited (NL1PC)

PROJECT SUMMARY

TYPE	ELECTRICITY (MW)
Run-of-River Hydropower Plant	64.7

LOCATION	CUSTOMER
Northern of Vientiane, Lao PDR	• Electricite Du Laos (EDL) (63.8 MW for 30 years from signing date)

GPSC holds

40%

Of total share

Rayong Central Utility Plant 4 : CUP-4

COD: 12-Sep-2019

PROJECT SUMMARY

TYPE	ELECTRICITY (MW)	STEAM (T/h)
Gas-fired Cogeneration	45	70

LOCATION	CUSTOMER
Asia Industrial Estate, Rayong	Industrial users in Asia Industrial Estate and neighboring industrial estate

GPSC's Operating Asset

100%

Xayaburi Power Company Limited (XPCL)

PROJECT SUMMARY

TYPE	ELECTRICITY (MW)
Run-of-River Hydropower Plant	1,285

LOCATION	CUSTOMER
Lao PDR	• EGAT (1,220 MW) • Electricite Du Laos (EDL) (60 MW)

GPSC holds

25%

Of total share

COD Project

Chonburi Clean Energy (CCE)

PROJECT SUMMARY

TYPE	ELECTRICITY (MW)	Industrial Waste (T/day)
Industrial Waste	8.6	270

LOCATION	CUSTOMER
WHA CIE	• Provincial Electricity Authority (PEA)

GLOW holds

33%

Of total share

Project under construction

Nava Nakorn Electricity Generation (NNEG) Expansion Project

SCOD: Q3/2020

% Progress

4Q19

85.7%

PROJECT SUMMARY

TYPE	ELECTRICITY (MW)	STEAM (T/h)
Gas-fired Cogeneration	Expansion 60	10
	Total 185	40

LOCATION

Nava Nakorn Industrial Promotion Zone, Pathumthani

CUSTOMER

- Industrial User
- EGAT (SPP Firm 90 MW for 25 years)

GPSC holds

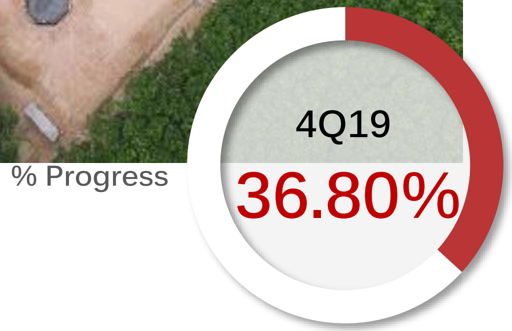
30%

Of total share

PROJECT UPDATE

- Main tasks such as the engineering design, construction and procurement of main machinery and equipment are on schedule.

Rayong Waste to Energy (WTE)



PROJECT SUMMARY

TYPE	ELECTRICITY (MW)	RDF (T/day)
Waste	9.8	300

LOCATION	CUSTOMER
Rayong	• Provincial Electricity Authority (PEA)

GPSC's Operating Asset	PROJECT UPDATE
100%	• The RDF Project construction has been completed since 2018 while the RDF Power Plant Project construction began on April 2019. • The project is expected to COD in Q2/2021.

Energy Recovery Unit Project (ERU)

4Q19
23.0%
% Progress

PROJECT SUMMARY

ERU Project is a thermal power plant project that produces electricity and steam by using Petroleum Pitch obtained from RHCU (CFP Project) to be sent back for use in the CFP project, located in Thai Oil Refinery

TYPE	ELECTRICITY (MW)	STEAM (T/h)
Pitch	250	175

And by products such as Sulfuric acid, Condensate Water

LOCATION

Thai Oil Refinery, Sri Racha, Chonburi

CUSTOMER

- Thai Oil Public Company Limited
  With 25-year contracts of 200 MW and 175 T/h of Steam from Closing Date

GPSC holds

100%
Of total share in ERU co.

PROJECT UPDATE

- Engineering design work: P&ID Review
- Construction work: ERU site preparation, Back filling, Density test, Substation site preparation
- Purchasing machinery and equipment: Bid Evaluation / PO / P & ID
- Project progress as planned

Project timeline

ERU Approval (1-Apr-19) — Project Construction Period — SCOD Q3'23

	2019	2020	2021	2022	2023
Milestone Payment	2%	8%	4%	6%	80%

Initial Payment **20%** of Initial Purchase Price USD 138 mm → Final Purchase Price < USD 757 mm

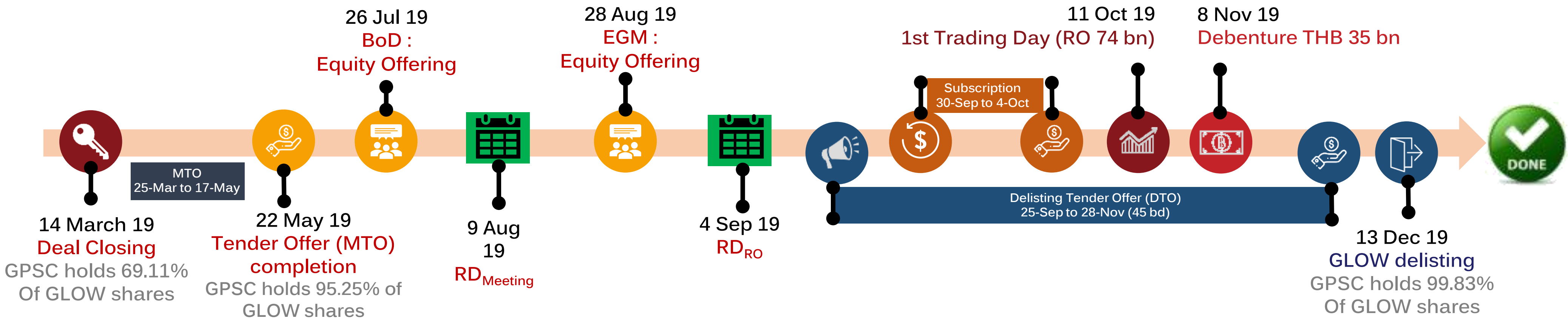
GPSC Growth and Strategic Direction

Update of projects

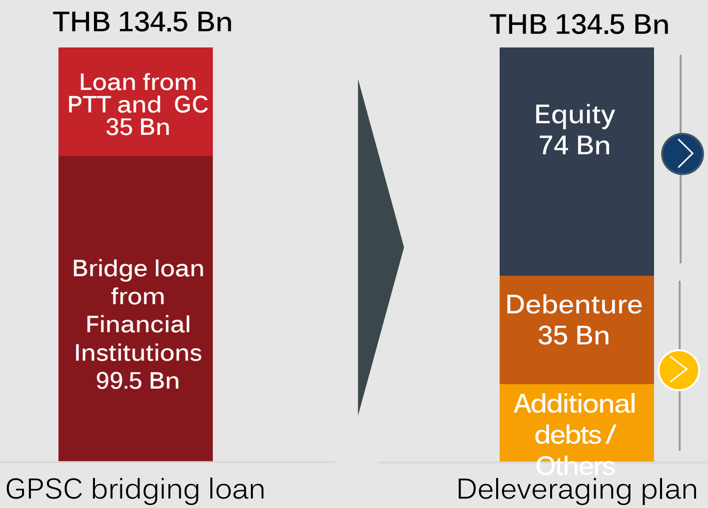
Financial Activities and Plans

Financial Performance

2019 Key activities highlight



SOURCE OF FUND AND DELEVERAGING PLAN FOR FUTURE GROWTH



Achieve as required

Completion in Oct-2019

Optimize Free-float

Completion in Nov-2019

Will be completed by Q1/2020

Net D/E: 0.78X

GPSC's Prudent Financial Policy

1. Net Debt to Equity ≤ 1.0x
2. Net Debt to EBITDA ≤ 4.0x
3. Dividend Policy: Minimum dividend at the rate of not less than 30 percent of the net profit according to the financial statements of the Company after the deduction of tax, reserved funds as required by law (with additional conditions)

GPSC Growth and Strategic Direction

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2019 Key Financial Highlights

Key financial highlights

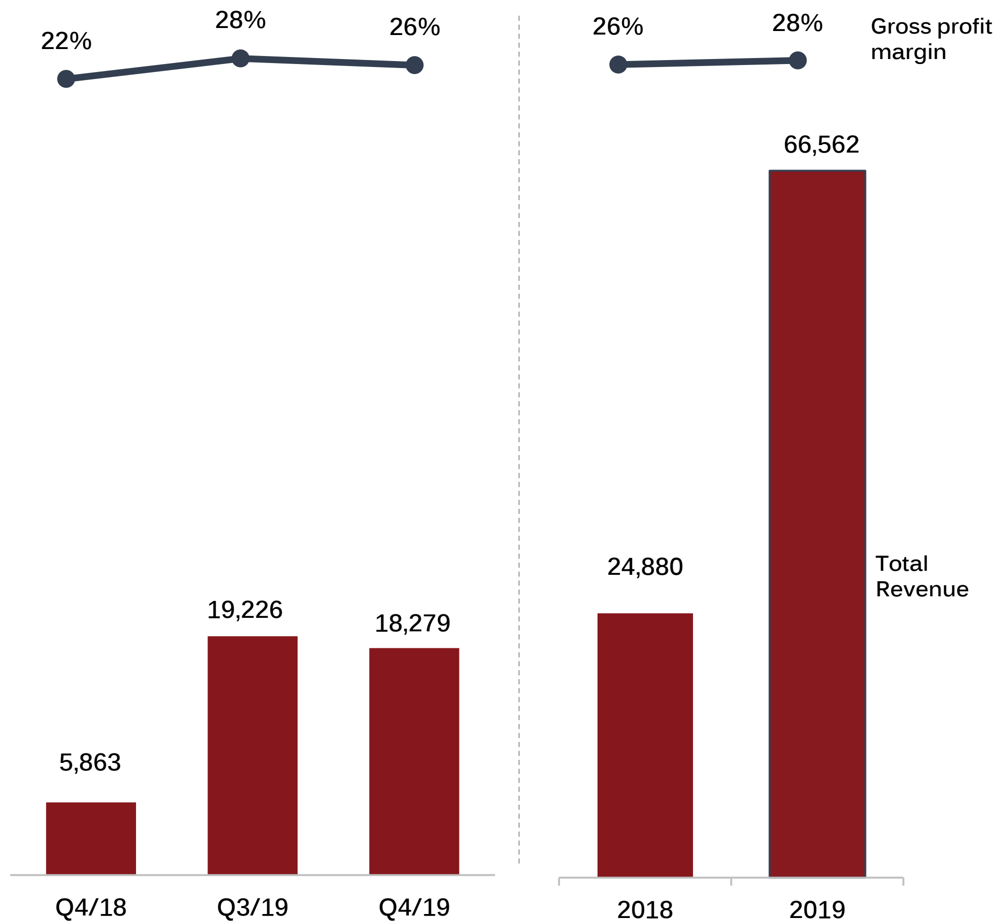
Revenue	Gross Profit	EBITDA	Adjusted Net Income	Net Income
THB mm 66,562	THB mm 18,662	THB mm 16,783	THB mm 5,177	THB mm 4,061

Growing performance is mainly due to:

- ✓ The recognition of GLOW's performance from 14th March 2019
- ✓ The COD of projects in 2019 which are NL1PC, CUP-4, XPCL and CCE
- ✓ The finance expense decreased resulting from the short-term loan repayment which received from the Rights Offering of Baht 74,000 million and debenture issuance of Baht 35,000 million in Q4/2019.
- ✓ GLOW's power plants have reached the Contracted Availability Hours set out in the PPA in Dec 2019
- ✓ The performance of Sriracha power plant has increased after major overhaul in Q4/2018 while there was planned maintenance shutdown from Glow Energy Power Plants in Q4/2019.

Q4/2019 Financial Performance Summary (1/2)

Revenue & Gross Profit Margin (THB Million,%)



Gross Profit Margin

QoQ ▼ 2%
YoY ▲ 4%
12M ▲ 2%

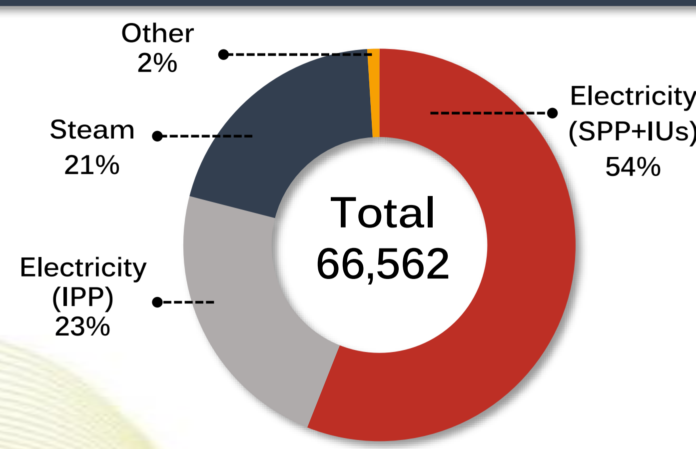
- **QoQ:** Decreased due to:
  1) IPP and SPP performance decreased due to the planned maintenance shutdown from Sriracha Power Plant and Glow Energy Power Plants respectively
  2) GHECO-One plant has reached the Contracted Availability Hours in December 2019.
- **YoY and 12M:** Increased due to the recognizing performance from GLOW.

Revenue

QoQ ▼ 5%
YoY ▲ 212%
12M ▲ 168%

- **QoQ:** Decreased due to:
  1) Lower AP of Sriracha power plant caused by the planned maintenance shutdown for 10 days and decrease in EP from the lower dispatch volume as EGAT instruction.
  2) GHECO-One has reached the Contracted Availability Hours in December 2019
  3) Glow Energy power plants has planned maintenance shutdown
- **YoY and 12M:** Increased due to the recognition of GLOW's performance

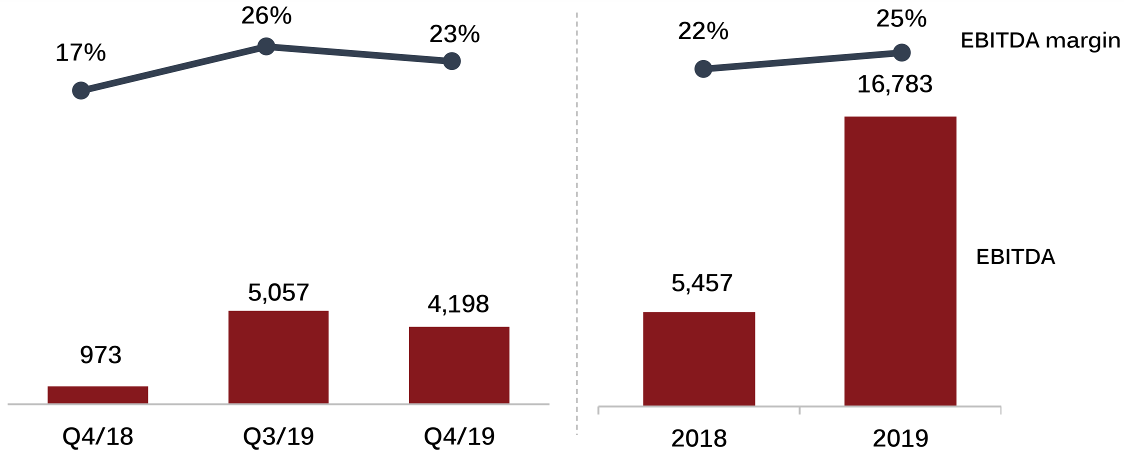
2019 Revenue by product (THB Million, %)



Q4/2019 Financial Performance Summary (2/2)

EBITDA and EBITDA Margin

(THB Million, %)

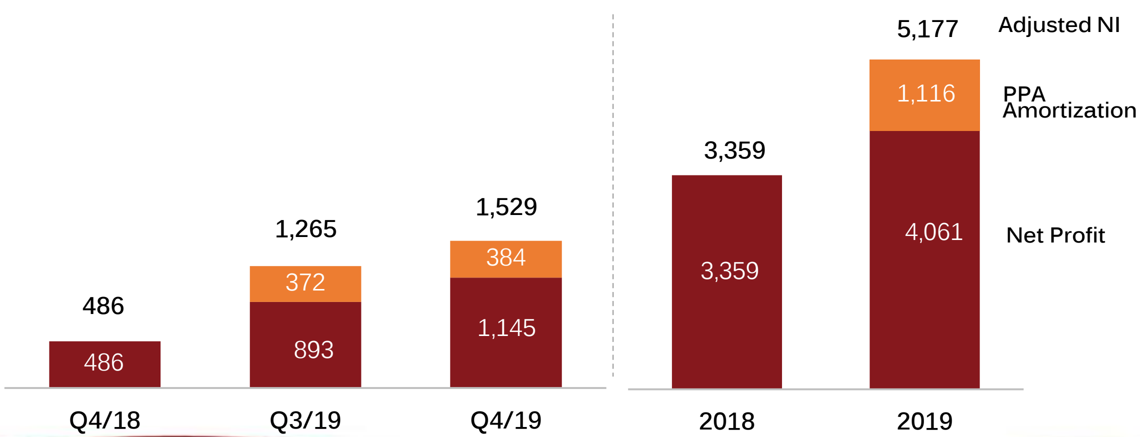


QoQ	YoY	12M
▼ 17%	▲ 331%	▲ 208%

- **QoQ:** Decreased due to
  1) GHECO-One and GLOW IPP Power plants have reached the Contracted Availability Hours set out in the PPA in December 2019.
  2) The planned maintenance shutdown from Glow Energy Power Plants.
- **YoY and 12M:** Increased due to the full contribution of GLOW's performance

Net Profit and Adjusted Net Income

(THB Million)



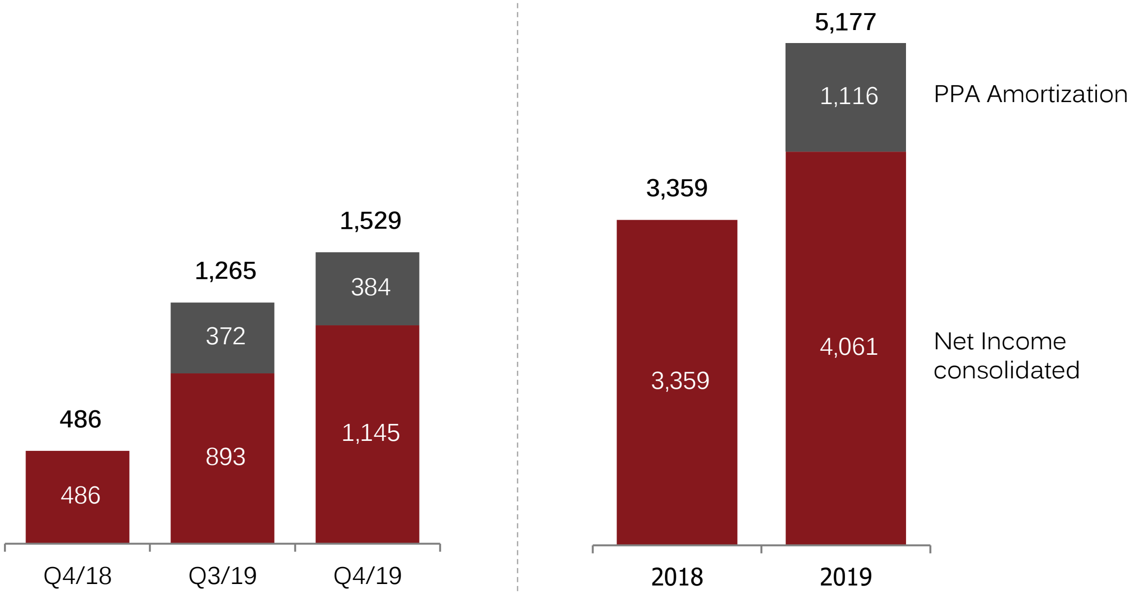
QoQ	YoY	12M
▲ 21%	▲ 215%	▲ 54%

- **QoQ:** Adjusted Net Income increased due to
  1) The decrease in finance costs from the company's financial deleveraging plan.
- **YoY and 12M:** Adjusted Net Income increased mainly from
  1) The recognition of GLOW's performance from 14th March 2019
  2) An increase of Sriracha Power Plant's performance after major overhaul maintenance shutdown in Q4/2018

Adjusted Net Income (To reflect company's true earnings)

Net Profit and Adjusted Net Income

(THB Million)



Adjusted Net Income, the net profit attribute to the company adjusted to *reflect the company's true earnings from its normal operations* which excludes:

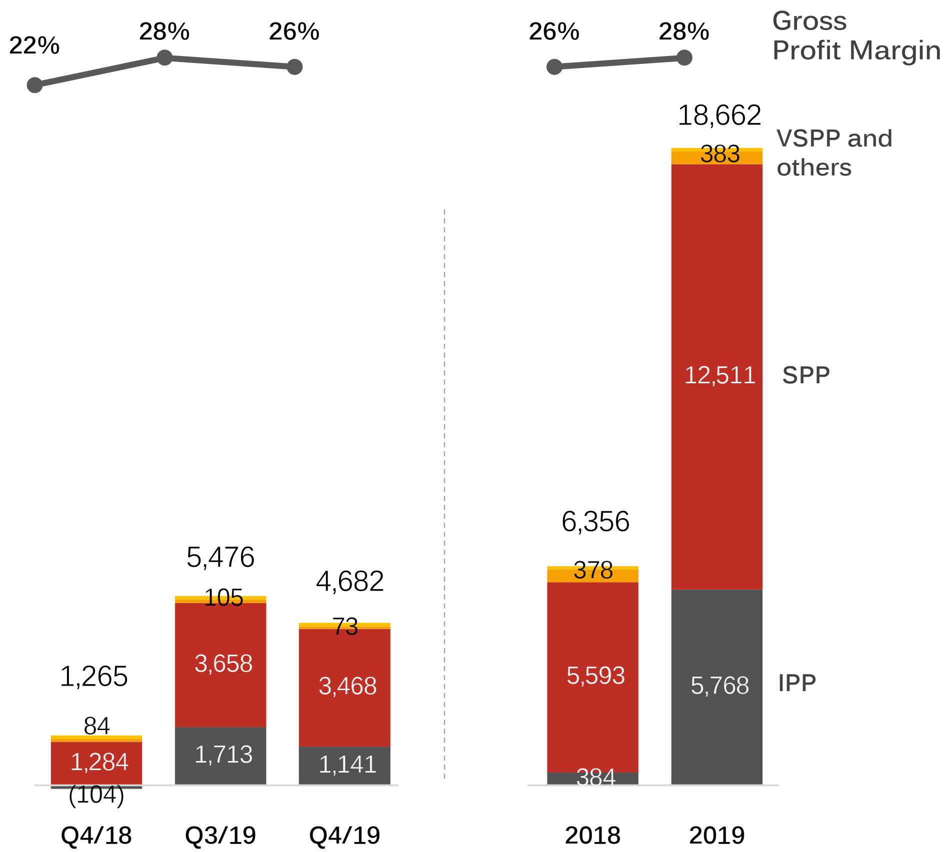
- The fair value of intangible asset from the acquisition of GLOW (PPA Amortization)

Adjusted Net Income	Q4/18	Q3/19	Q4/19	Change +/(-)		2018	2019	Change +/(-)
(Unit: Million Baht)				QoQ	YoY			
Net Profit for the Company	486	893	1,145	28%	136%	3,359	4,061	21%
Add back: Amortization of assets acquired from the acquisition of GLOW	0	372	384	3%	n/a	0	1,116	n/a
Adjusted Net Income	486	1,265	1,529	21%	215%	3,359	5,177	54%

GPSC

Gross Profit and Gross Profit Margin has slightly decreased due to the planned maintenance shutdown

Gross profit and Gross profit margin by type of plant (THB Million, %)



Total Gross Profit

QoQ	▼ 14%
YoY	▲ 270%
12M	▲ 194%

- **QoQ:** Decreased mainly from GHECO-One has reached the Contracted Availability Hours and Sriracha Power Plant has planned maintenance shutdown, together with the fall in selling electricity of ISP1.
- **YoY and 12M:** Increased mainly due to recognizing gross profit of both GPSC and GLOW Power plants and the increase in AP from Sriracha Power Plant after major overhaul maintenance shutdown in Q4/2018

IPP Gross profit

QoQ	▼ 33%
YoY	▲ 1,196%
12M	▲ 1,404%

- **QoQ:** Decreased due to the decrease in AP corresponding to planned maintenance shutdown from Sriracha Power plant for 10 days and GHECO-One has reached the Contracted Availability Hours in the mid of December 2019.
- **YoY and 12M:** Increased mainly due to the recognition of gross profit from all 3 of GLOW's IPP Power plants.

SPP Gross profit

QoQ	▼ 5%
YoY	▲ 170%
12M	▲ 124%

- **QoQ:** decreased due to the maintenance cost increased from Glow Energy Power plants following the planned maintenance shutdown despite the sales volume from Rayong Central Utility plants (CUP) increased due to the higher industrial users demand.
- **YoY and 12M:** Increased mainly due to the recognition of GLOW's SPP plants and increase in electricity and steam sales from Rayong Central Utility plants (CUP)

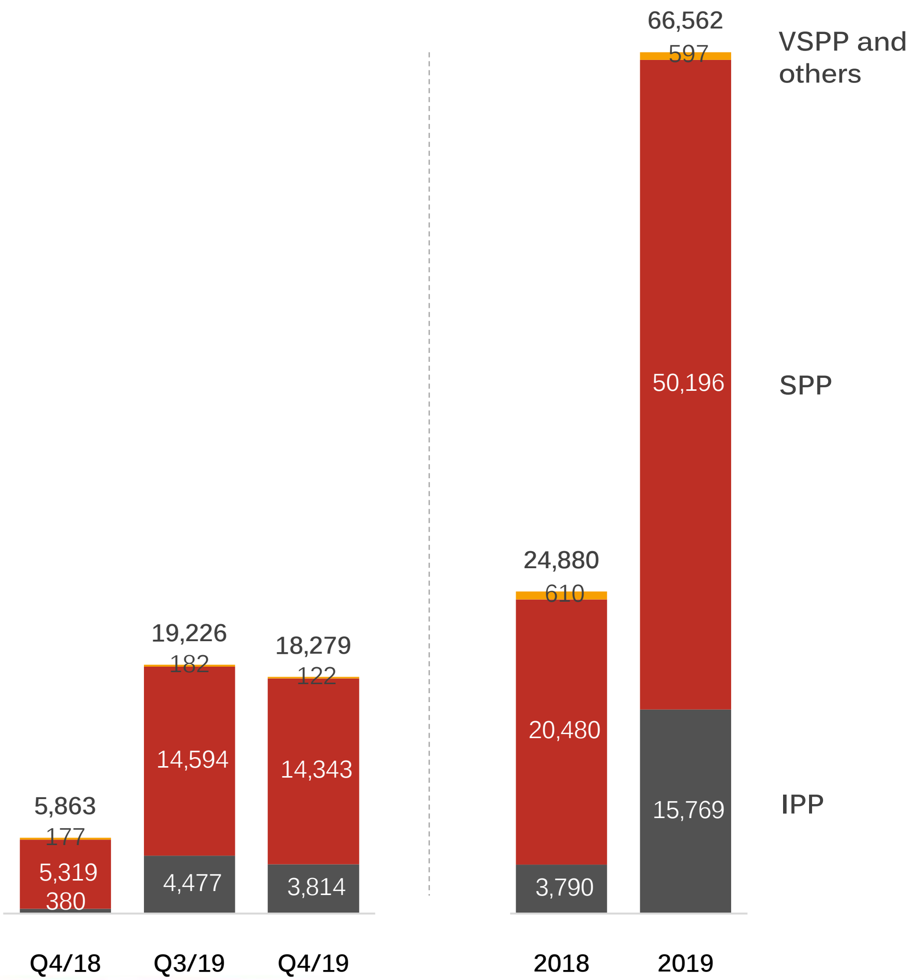
VSPP and Others Gross profit

QoQ	▼ 31%
YoY	▼ 14%
12M	▲ 1%

- **QoQ and YoY:** Decreased mainly due to lower light intensity following the seasonality effect from ISP1, together with the decrease in revenue from CHPP due to the demand of IUs was lower from weather condition.
- **12M:** Increased mainly due to the increase in revenue from selling electricity and chilled water from ISP1 and CHPP respectively

Total revenue has slightly decreased due to planned maintenance shutdown

Revenue by type of plant (THB Million)



Total Revenue

QoQ	▼ 5%
YoY	▲ 212%
12M	▲ 168%

- **QoQ:** Decreased mainly due to GLOW IPP Plant and GHECO-One plant have reached the Contracted Availability Hours in December, together with the decrease of GLOW's SPP revenue as a result of planned maintenance shutdown. In addition, selling electricity of VSPP Power plant decreased as seasonality effect in the fourth quarter.
- **YoY and 12M**: Increased due to the recognition of revenue from GLOW's Power plants.

IPP Revenue

QoQ	▼ 14%
YoY	▲ 908%
12M	▲ 316%

- **QoQ:** Decreased mainly from
  - GHECO-One and GLOW IPP Power plant have reached the Contracted Availability Hours in the mid of December.
  - Sriracha power plant has planned maintenance shutdown for 10 days and lower dispatch instruction by EGAT.
- **YoY and 12M:** Increased from the contribution of GLOW's performance and higher AP from Sriracha power plant after major overhaul maintenance shutdown in Q4/2018.

SPP Revenue

QoQ	▼ 2%
YoY	▲ 169%
12M	▲ 145%

- **QoQ:** Decreased mainly due to the decrease in electricity and steam sales volume since the maintenance shutdown from Glow Energy power plants.
- **YoY and 12M:** Revenue increased due to the recognition of electricity and steam sales of GLOW SPP's power plants as well as the increase in the electricity and steam sales of GPSC's SPP.

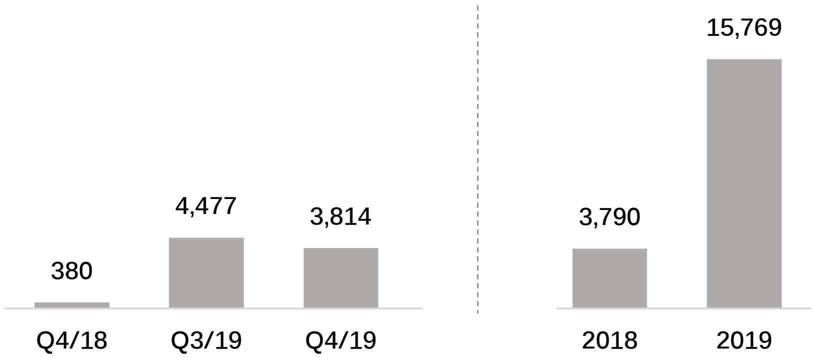
VSPP and Others Revenue

QoQ	▼ 22%
YoY	▼ 26%
12M	▼ 2%

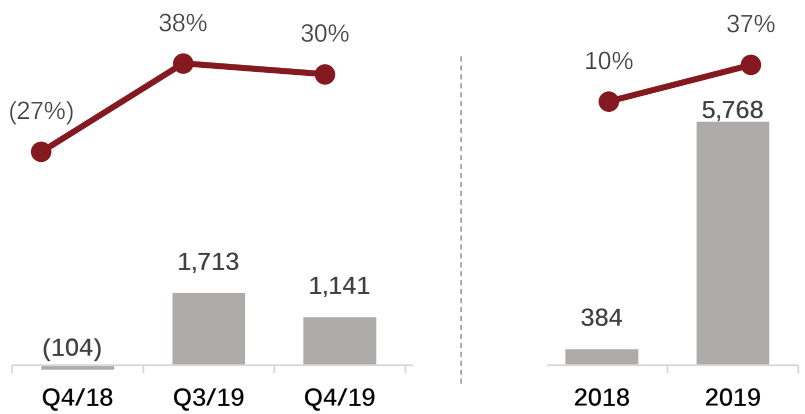
- **QoQ, YoY and 12M:** Decreased mainly from the selling electricity from Ichinoseki Solar Power 1 GK (ISP1) due to lower light intensity as seasonality effect in Q4/2019 as well as the decrease in revenue from solar cell installation from CHPP corresponding to the implementing projects.

IPP Revenue: decreased by 14% QoQ due to reached Contracted Availability Hours, YoY increased from contribution from GLOW

Revenue (THB Million)



Gross Profit & Gross Profit Margin (THB Million, %)



IPP Power Plants


Sriracha


GIPP


GHECO-ONE


HHPC

*GLOW IPPs consists of GIPP, GHECO-ONE and HHPC

Total Revenue

QoQ	▼ 14%
YoY	▲ 908%
12M	▲ 316%

- **QoQ:** Decreased due to
  - GHECO-One has reached the Contracted Availability Hours in the first half of December resulting in lower AP and EP.
  - Sriracha Power Plant has planned maintenance shutdown for 10 days resulting in lower AP and fall in EP following the lower dispatch instruction by EGAT
- **YoY, 12M: Increased due to**
  - The recognition of GLOW's performance
  - An increase in revenue due to higher Contracted Availability Hours (CAH) than 2018 from Sriracha Power Plant.

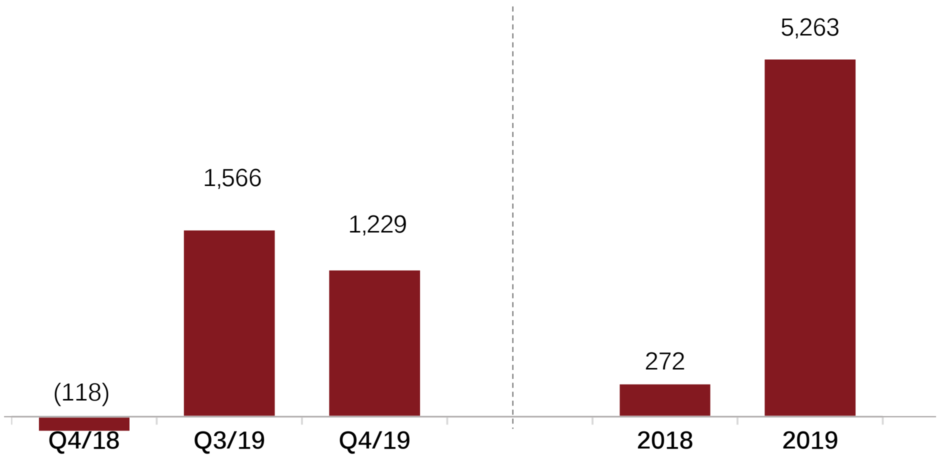
Gross profit

QoQ	▼ 33%
YoY	▲ 1,196%
12M	▲1,404%

- **QoQ: Decreased mainly from**
  - AP and EP dropped from GHECO-One plant due to reached the Contracted Availability Payment in December
  - Sriracha power plant has planned maintenance shutdown from for 10 days resulting in higher maintenance cost.
- **YoY, 12M: Increased mainly from**
  - The recognition of gross profit from all 3 of GLOW's IPP plants
  - Revenue from Sriracha power plant increased after major overhaul maintenance shutdown in Q4/2018 and increase in AP due to the higher Contracted Availability Hours than 2018.

Availability Payment: Decreased by 22% QoQ from planned maintenance

Availability Payment (THB Million)



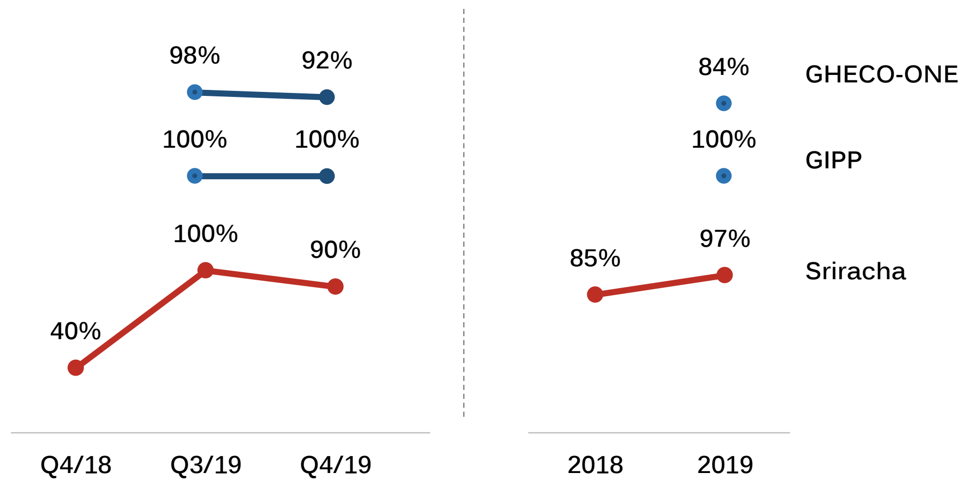
QoQ
▼ 22%

YoY
▲ 1,151%

12M
▲ 1,840%

- **QoQ:** Availability Payment (AP) decreased due to
  - Sriracha power plant has maintenance shutdown for 10 days .
  - GHECO-One power plant has reached the Contracted Availability Hours in December 2019
- **YoY, 12M:** Availability Payment increased mainly due to
  - The full recognition of GLOW performance
  - An increase in AP from Sriracha power plant since the Contracted Availability Hours is higher than 2018, together with had major overhaul in Q4/2018.

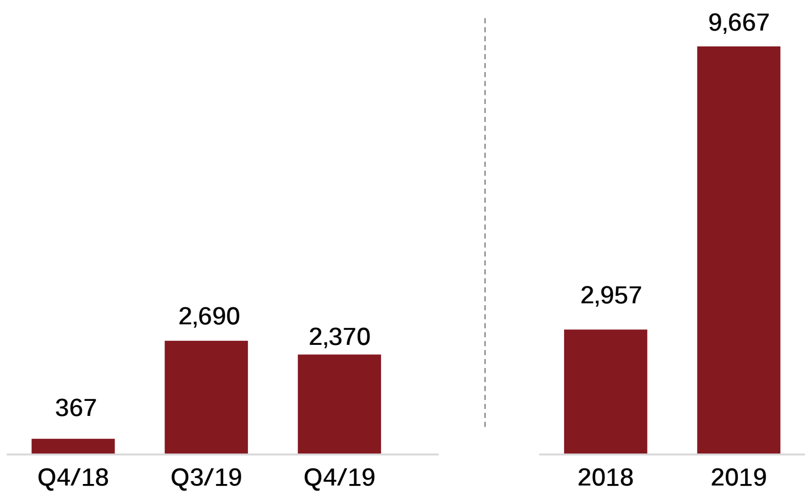
Availability Rate (%)



AR-Sriracha	▪ **QoQ: AR** slightly decrease due to planned maintenance for 10 days, ▪ **YoY: AR** increase after major overhaul maintenance shutdown in Q4/2018
AR-GIPP	▪ AR of GIPP remained at 100%
AR-GHECO ONE	▪ **QoQ**: AR slightly dropped due to reached the Contracted Availability Hours in December 2019

Energy Payment: Decreased 12% QoQ and Increased 546% YoY

Energy Payment (THB Million)



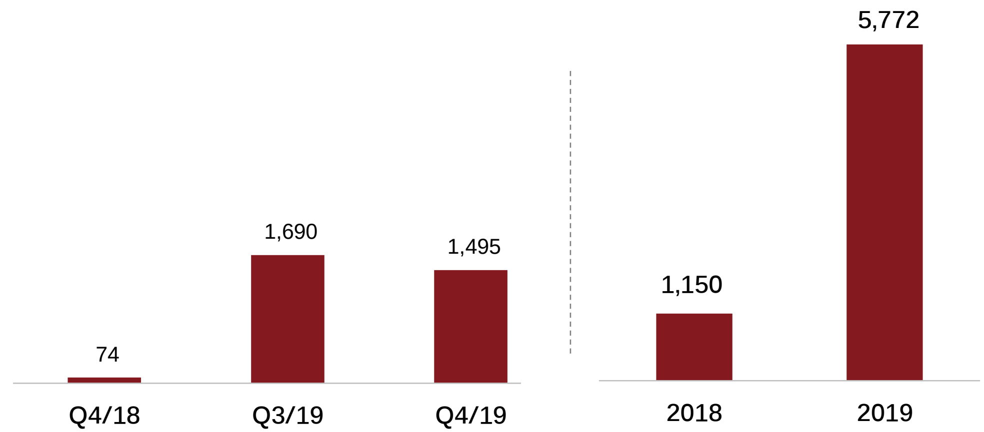
QoQ
▼ 12%

YoY
▲ 546%

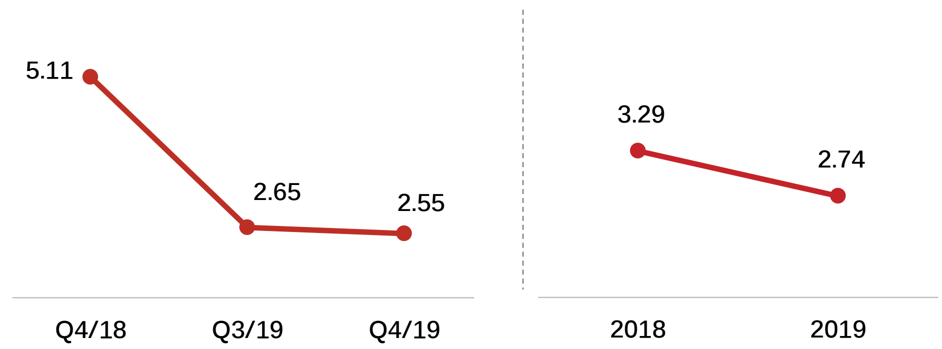
12M
▲ 227%

- **QoQ:** Decreased due to
  - EP from Sriracha Power Plant corresponding to lower dispatch instruction by EGAT.
  - Lower power generation from GHECO-One power plant after reached the Contracted Availability Hours in December 2019
- **YoY, 12M**: Increased mainly due to the full recognition of GLOW performance

Sales Volume (GWh)



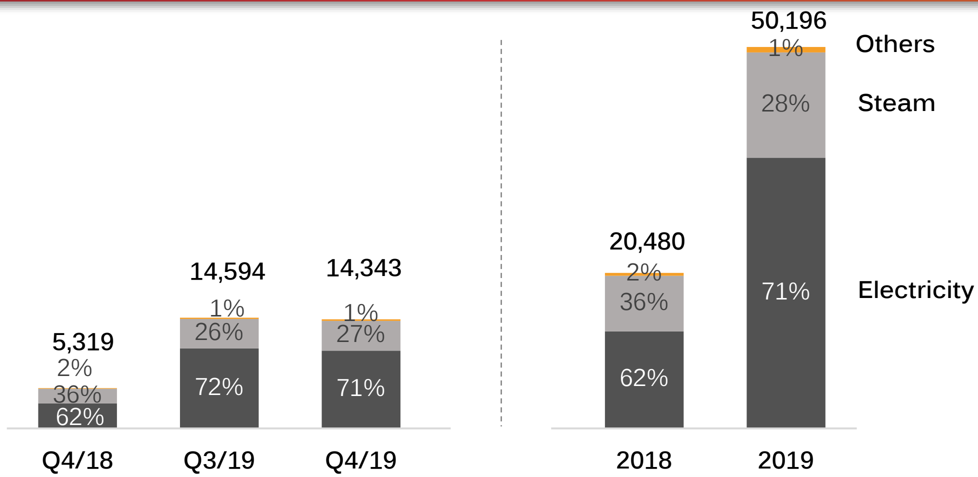
Average Total Selling Price* (THB/kWh)



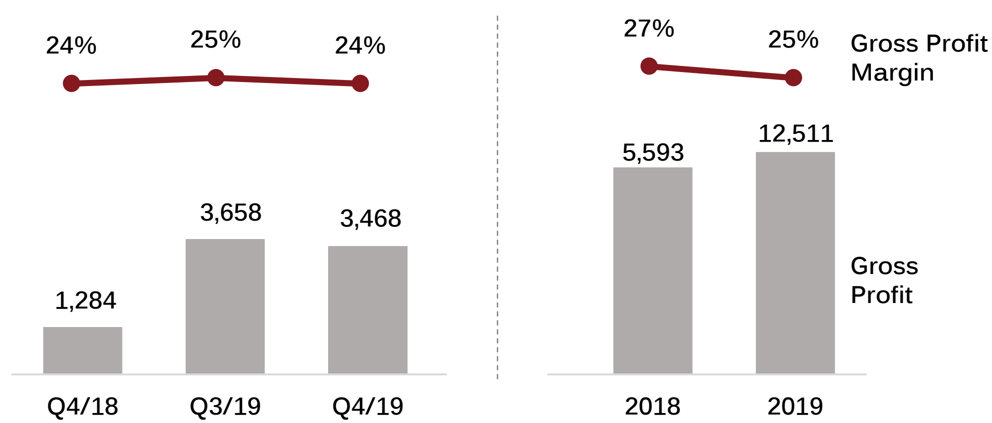
Note: *Average Total Selling Price is derived from the revenue of Availability Payment (AP) and Energy Payment (EP)

SPP Revenue: Increase 169% YoY and Decreased 2% QoQ due to planned maintenance shutdown

SPP Revenues (THB Million, %)



Gross Profit & Gross Profit Margin (THB Million, %)



GPSC SPP Powerplants


CUP-1


CUP-2


CUP-3


CUP-4


IRPC-CP


GLOW Energy Phase 1,2,4,5


GLOW SPP 2-3


GLOW SPP 11 Phase 1-3


GLOW CFB3

Total Revenue

QoQ	▼ 2%
YoY	▲ 169%
12M	▲ 145%

- **QoQ:** Total Revenue decreased mainly due to planned maintenance shutdown from Glow Energy Power plant while the revenue from Rayong Central Utility plant increased due to the increase in demand from industrial users.
- **YoY and 12M:** Revenue increased due to the recognition from GLOW's SPP power plant as well as the increase in the electricity and steam sales of GPSC's SPP due to higher sales.

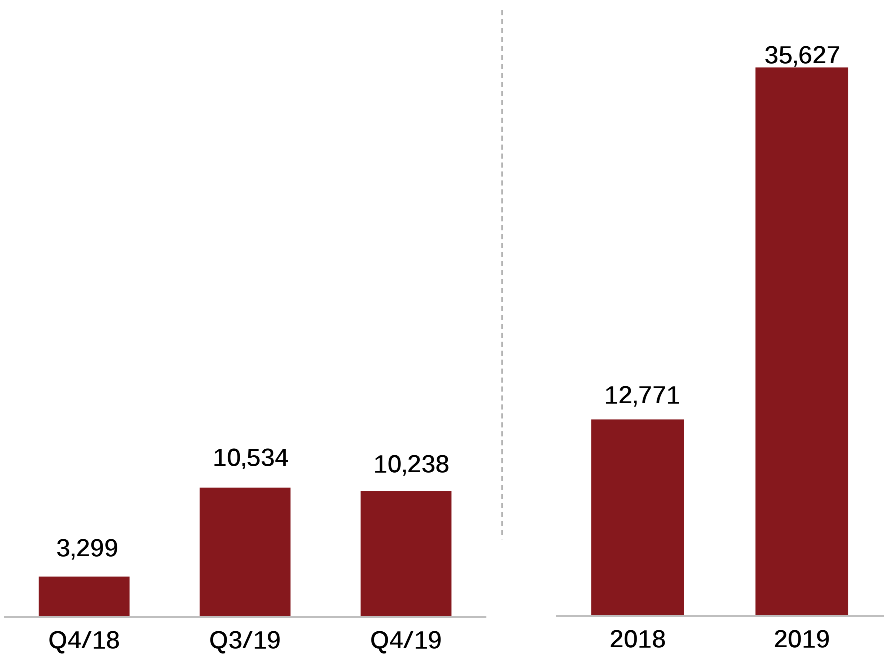
Gross profit

QoQ	▼ 5%
YoY	▲ 170%
12M	▲ 124%

- **QoQ:** Total gross profit decreased mainly due to increase in electricity sales as result of industrial users returns its normal operation after maintenance shutdown from Rayong Central Utility plants (CUP) while decreased from Glow Energy plants due to planned maintenance shutdown, resulting in higher maintenance cost.
- **YoY and 12M:** Increased mainly due to the recognition of GLOW's performance while natural gas cost increase following the higher volume of natural gas used

SPP Power Sales: Increased 210% YoY and Decreased 3% QoQ

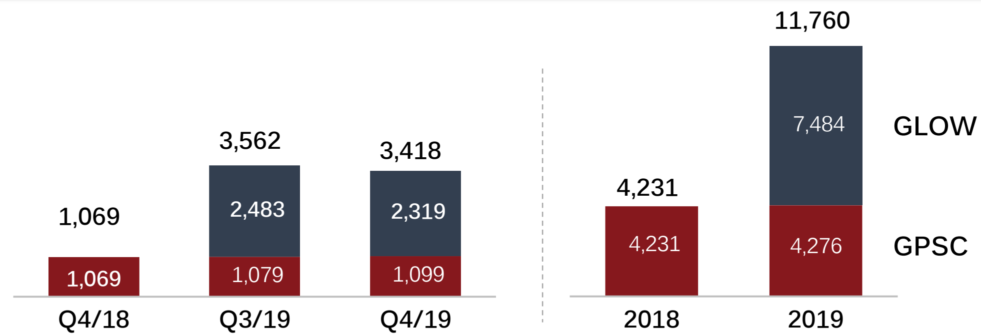
Power Sales (THB million)



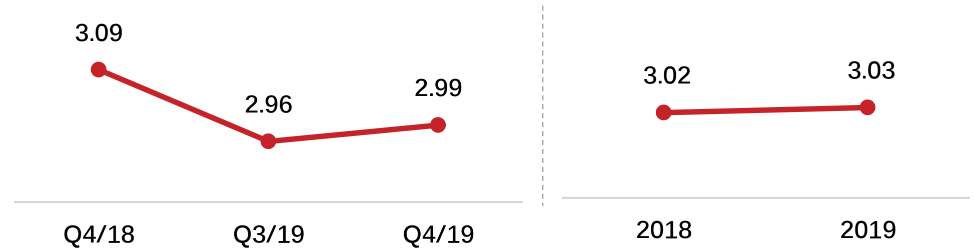
QoQ	YoY	12M
▼ 3%	▲ 210%	▲ 179%

- **QoQ:** Power sales decreased due to maintenance shutdown from Glow Energy power plants
- **YoY and 12M**: Power sales increased mainly due to the recognition of GLOW's performance and the higher sales volume as a result of the increased in demand from industrial users.

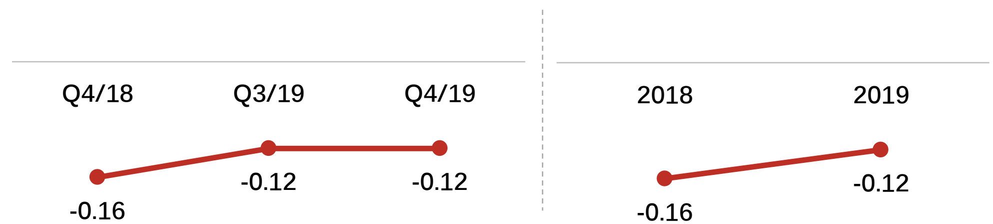
Power Sales Volume (GWh)



Average Selling Price (THB/kWh)

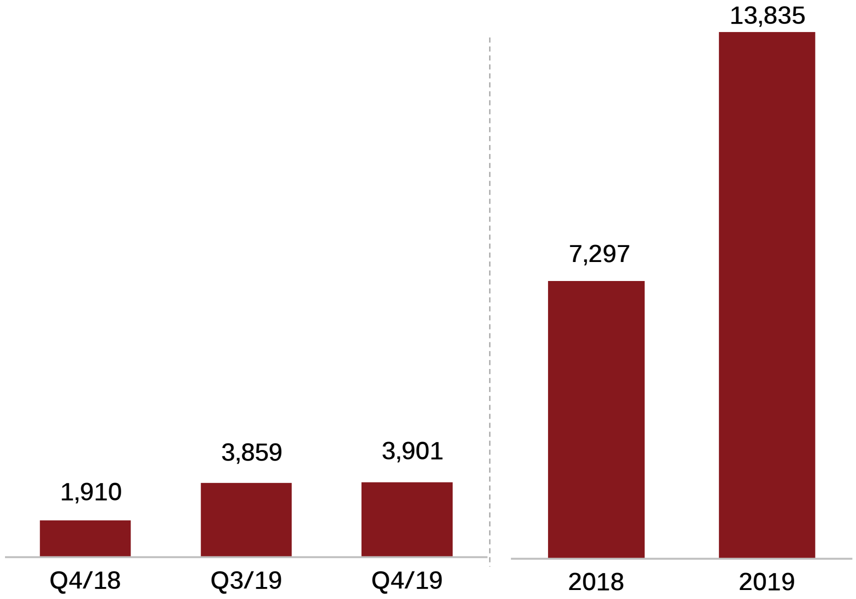


Ft rate (THB)



SPP Steam Sales: Increased 1% QoQ and 104% YoY

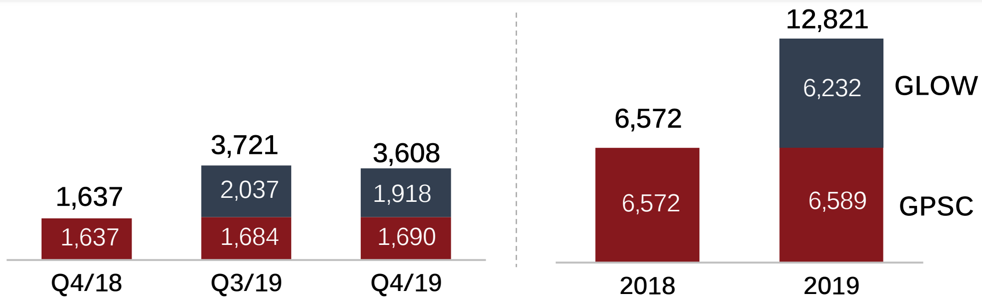
Steam Sales (THB Million)



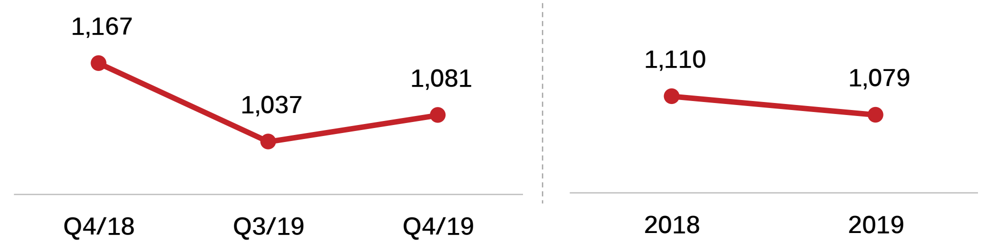
QoQ	YoY	12M
▲ 1%	▲ 104%	▲ 90%

- **QoQ:** Steam sales increased mainly due to increase in volume corresponding to industrial users demand
- **YoY and 12M**: Steam sales increased due to the recognition of GLOW's performance as well as higher volume of steam sales from Rayong Central Utility Plant (CUP) and IRPC-CP

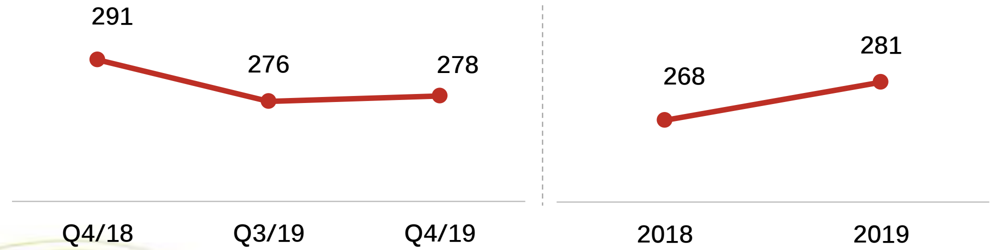
Steam Sales Volume ('000 tons)



Average Steam Selling Price (THB/Ton)



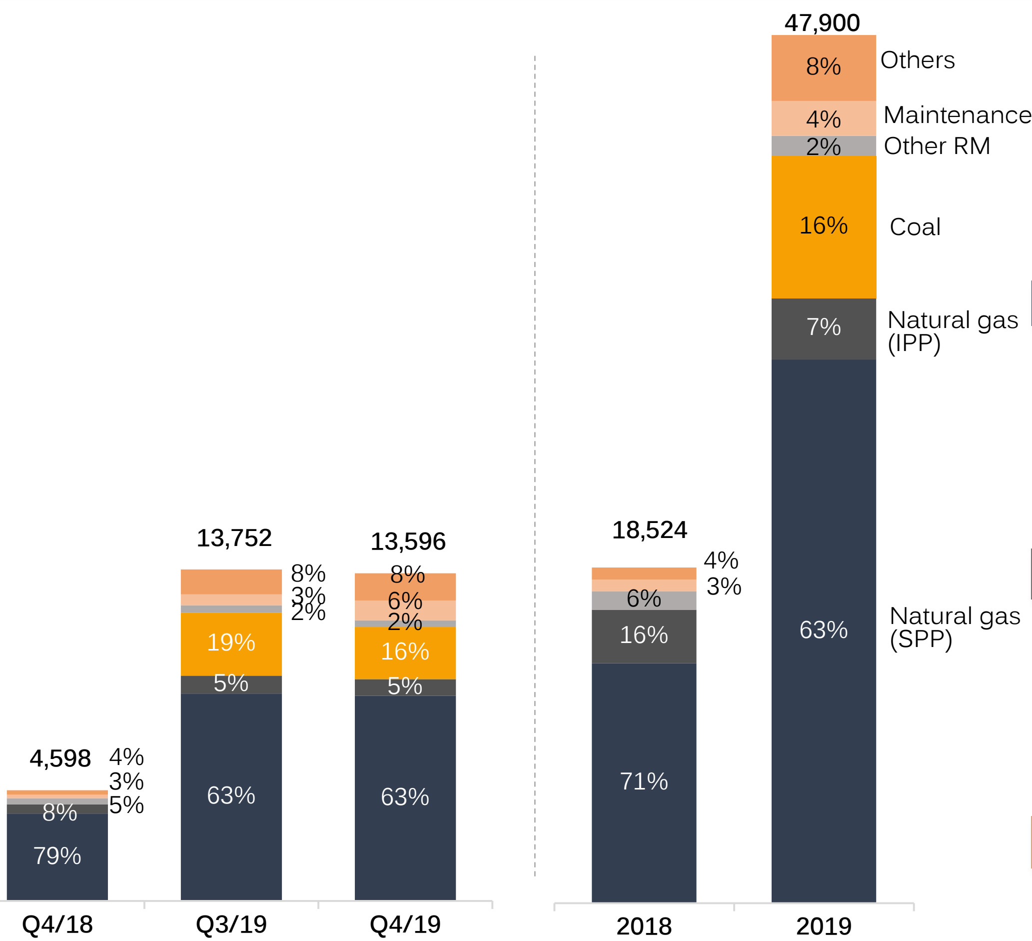
Average Natural Gas Price (THB/MMBTU)



Total Cost of Sales and Services

Total Costs of sales and services*

(THB Million, %)



Note: exclude depreciation and amortization

Total Costs

QoQ ▼ 1%

YoY ▲ 196%

12M ▲ 159%

- **QoQ:** Total costs decreased mainly due to the lower cost of natural gas from lower dispatch volume of Sriracha Power Plant and decrease coal cost following to GHECO-One plant has reached the Contracted Availability Hours
- **YoY and 12M :** Total costs increased mainly from the consolidation of GLOW's power plant corresponding to sales volume as well as higher maintenance costs arising from planned maintenance shutdown from Rayong Central Utility

Natural Gas

QoQ ▼ 2%

YoY ▲ 129%

12M ▲ 106%

- **QoQ :** Natural gas costs decreased mainly due to the lower dispatch instruction by EGAT from Sriracha Power Plant
- **YoY and 12M:** Natural gas costs increased mainly due to higher dispatch volume according to EGAT's instruction.

Coal and Other Raw Materials

QoQ ▼ 16%

YoY ▲ 868%

12M ▲ 772%

- **QoQ:** Coal cost decreased due to GHECO-One has reached the Contracted Availability Hours in December
- **YoY and 12M:** Coal cost increased mainly due to the recognition of GLOW's power plants.

Maintenance cost and Others

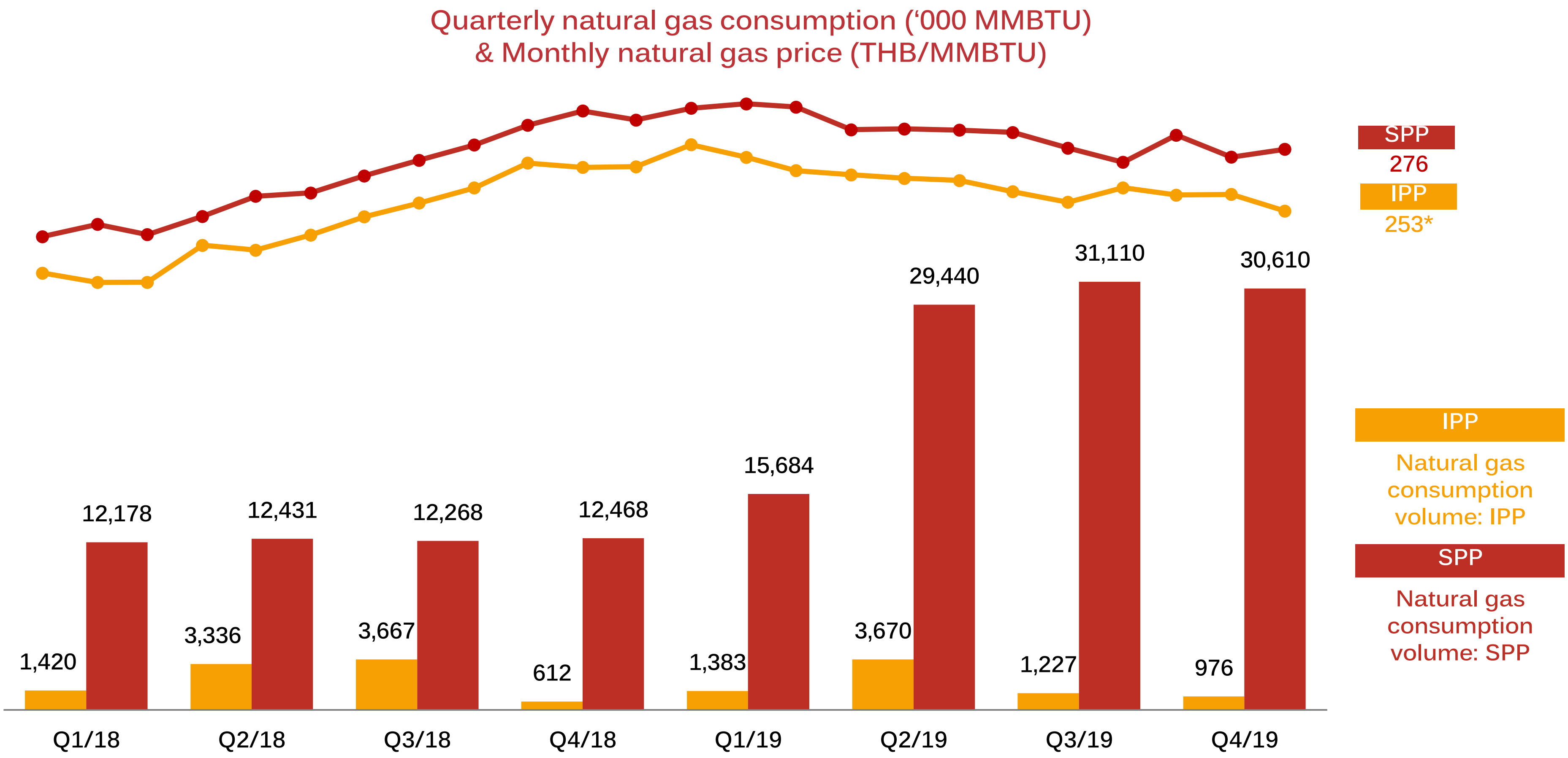
QoQ ▲ 32%

YoY ▲ 491%

12M ▲ 326%

- **QoQ, YoY and 12M:** Maintenance costs and other costs increased due to the contribution of GLOW as well as the increase in maintenance cost due to the planned maintenance shutdown from both of Glow energy plants and Sriracha power plant.

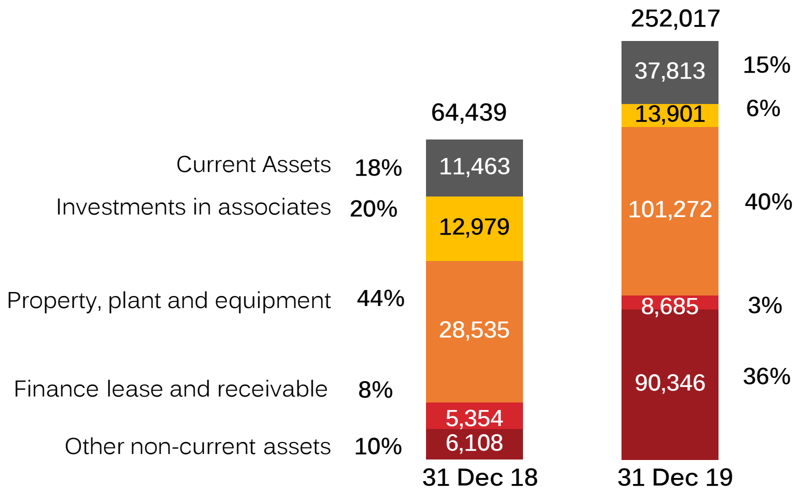
Natural Gas Consumption vs Price Trend



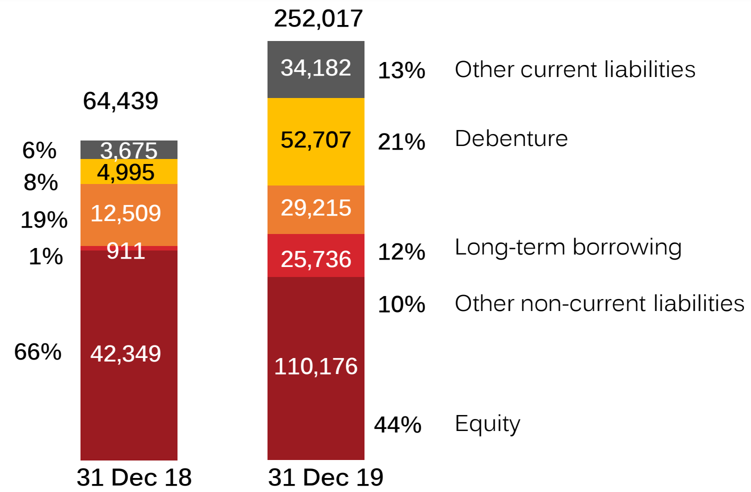
Remark: Latest price as of 31 Dec 2019
Note: *Excluded GLOW IPP

Financial Position of GPSC and Subsidiaries

Total Assets (THB Million, %)



Total Liabilities & Shareholders Equity (THB Million, %)



Assets

▲ 291%

Total assets increased mainly from:

- **Other non-current assets** increased by Baht 84,238 million mainly due to the increase of goodwill from the acquisition of GLOW and the intangible assets for the right in the Power Purchase Agreement from the acquisition of GLOW.
- **Property, plant and equipment** increased by Baht 72,737 million mainly due to the increase of book value in property, plant and equipment of GLOW and recording the fair value of property, plant and equipment from the purchase of GLOW.
- **Finance lease and receivable net**: increased by Baht 3,331 million in which GLOW financial lease and receivable, and recording the fair value of financial lease from the acquisition of GLOW.

Liabilities

▲ 542%

Total liabilities increased mainly from:

- **Current liabilities** increased by Baht 30,507 million mainly from an increase in short-term loan from financial institution for the acquisition of GLOW.
- **Other non-current liabilities** increased by baht 24,826 million mainly due to the increase in GLOW's other non-current liabilities and deferred tax liabilities from recording the fair value of net asset from the acquisition of GLOW.
- **Long-term borrowing and debentures** increased by Baht 64,418 million from GLOW's long-term borrowing and debenture.

Equity

▲ 160%

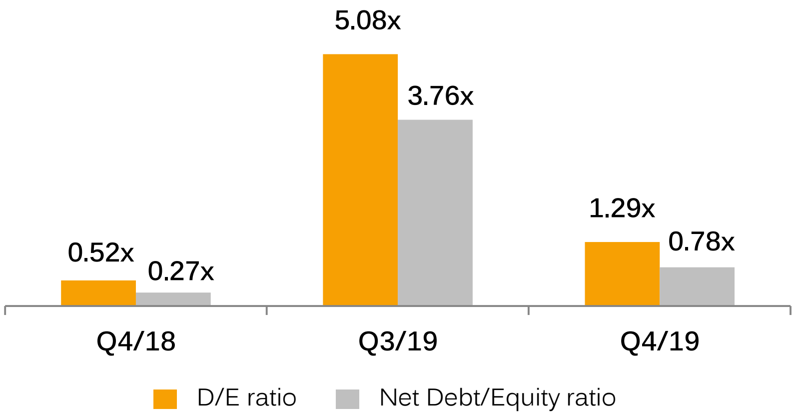
Total Equity decreased mainly from:

- The company paid up capital of Baht 74,000 million.
- The increase in retained earnings during the period of Baht 1,469 million and the difference from the change of investment portion in subsidiary of Baht 14,992 million.

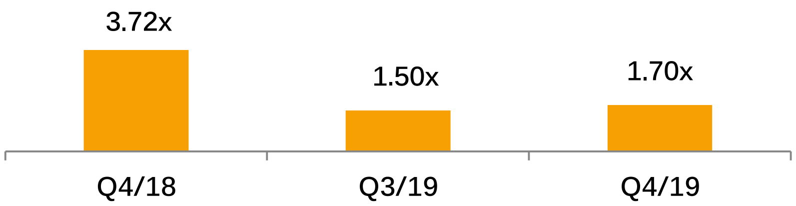
GPSC

Key Financial Ratio

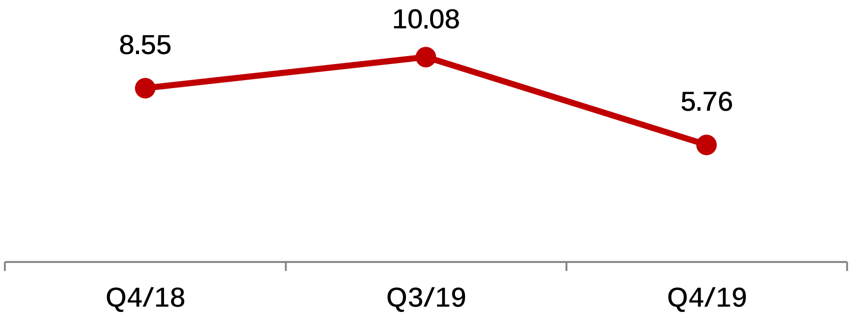
Total D/E and Net Debt/ Equity ratio (Times)



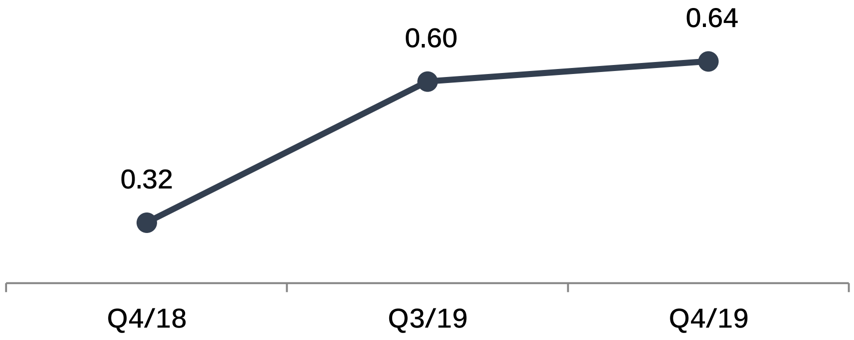
Interest Coverage Ratio (Times)



ROE (%)



Earning per share (EPS) (THB/share)



THANK YOU

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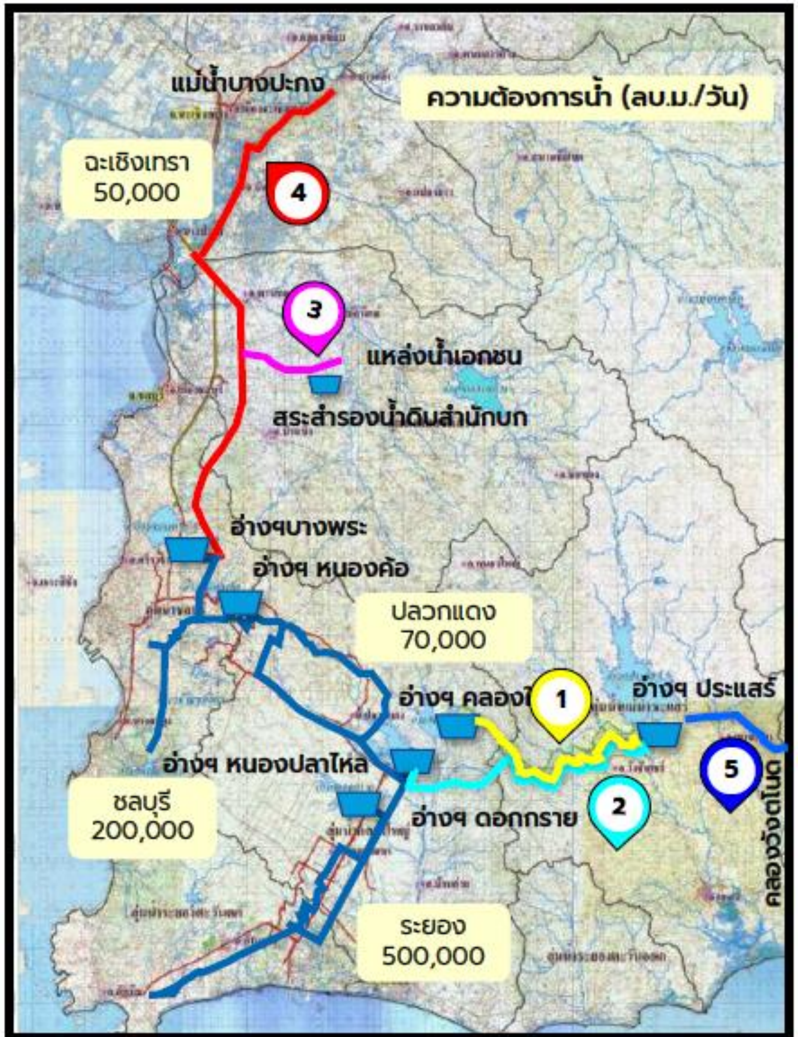
Drought situation, Impacts and mitigation plan 2020



1. สูบผันน้ำจากอ่างเก็บน้ำประแสร์ – อ่างเก็บน้ำคลองใหญ่
2. สูบผันน้ำจากอ่างเก็บน้ำประแสร์ – อ่างเก็บหนองปลาไหล
3. ใช้น้ำจากแหล่งน้ำเอกชนเข้ามาเสริมในพื้นที่ชลบุรีและฉะเชิงเทรา
4. สำรองน้ำจากแม่น้ำบางปะกงเข้าอ่างเก็บน้ำบางพระ ช่วงเดือน ส.ค. – พ.ย.
5. สูบผันน้ำจากคลองวังโตนด – อ่างเก็บน้ำประแสร์ ในช่วงฤดูฝน มิ.ย. – ต.ค.
6. ปฏิบัติการฝนหลวง

\+ มาตรการภาครัฐและเอกชนอื่น ๆ

"ภาครัฐ ภาคเอกชน และเกษตรกร ผนึกความร่วมมือแก้ปัญหาขาดแคลนน้ำภาคตะวันออก ผันน้ำจากลุ่มน้ำวังโตนด จังหวัดจันทบุรี มายังอ่างเก็บน้ำประแสร์ จังหวัดระยอง ... รองรับสถานการณ์ภัยแล้งในปี 2563 มั่นใจเพียงพอรองรับความต้องการใช้น้ำตลอดฤดูแล้งนี้"

GPSC Mitigation Plan

- **3Rs:** Reduce
  Reuse
  Recycle
- Increase **operation efficiency** and water cycle
- Use clarified water **from waste water treatment** process
- A Temporary Desalination Plant

ที่มา: บริษัท จัดการและพัฒนาทรัพยากรน้ำภาคตะวันออก จำกัด (มหาชน) (EW),
สำนักงานคณะกรรมการนโยบายเขตพัฒนาพิเศษภาคตะวันออก (สกพอ. หรือ EECO)

Power Plants Portfolio of GPSC

Name	Type	Total capacity (MW)	Equity Power capacity (MW)	Equity Operating Power capacity (MW)	Steam (T/H)	Industrial water (Cu.m/H)	Direct shareholding (%)	COD	Tenor
IN OPERATION									
IPP									
Huay Ho	IPP	152	102	102	-	-	GLOW (67%)	1999	30
Sriracha	IPP	700	700	700	-	80	GPSC (100%)	2000	25/2025
Glow IPP	IPP	713	677	677	-	-	GLOW (95%)	2003	25
RPCL	IPP	1,400	210	210	-	-	GPSC (15%)	2008	25/2033
GHECO-One	IPP	660	429	429	-	-	GLOW (65%)	2012	25
XPCL	IPP	1,285	321	321	-	-	GPSC (25%)	2019	29/2048
Total IPP		**4,910**	**2,439**	**2,439**	**-**	**80**			
SPP									
Glow Energy Phase 1	SPP	-	-	-	250	1,340	GLOW (100%)	1994	-
Glow Energy Phase 2	SPP	281	281	281	300	1,180	GLOW (100%)	1996	3
Glow Energy Phase 4	SPP	77	77	77	137	2,050	GLOW (100%)	2005	25
Glow Energy Phase 5	SPP	328	328	328	160	-	GLOW (100%)	2011	-
Glow SPP 2/ GLOW SPP 3	SPP	513	513	513	190	150	GLOW (100%)	1999	25
Glow SPP 11 Phase 1	SPP	120	120	120	-	360	GLOW (100%)	2000	25
Glow SPP 11 Phase 3	SPP	42	42	42	-	-	GLOW (100%)	2006	-
Glow SPP 11 Phase 2	SPP	110	110	110	-	212	GLOW (100%)	2012	25
CUP-1	SPP	226	226	226	890	720	GPSC (100%)	2006	10-15/2021++
CUP-2	SPP	113	113	113	170	510	GPSC (100%)	2008	15/2022++
CUP-3	SPP	-	-	-	280	770	GPSC (100%)	2009	15/2023++
Glow Energy CFB 3	SPP	85	85	85	79	-	GLOW (100%)	2010	-
BIC-1	SPP	117	29.25	29.25	5	-	GPSC (25%)	2013	25/2038
BIC-2	SPP	117	29.25	29.25	5	-	GPSC (25%)	2017	25/2042
IRPC-CP Phase 1	SPP	45	23	23	86.7	-	GPSC (51%)	2015	25/2040
IRPC-CP Phase 2	SPP	195	99.4	99.4	66.3	-	GPSC (51%)	2017	25-27/2044

Note: Equity capacity includes 100% stake in GLOW, GRP and ERU
GPSC Portfolio as of end-2019

Power Plants Portfolio of GPSC

Name	Type	Total capacity (MW)	Equity Power capacity (MW)	Equity Operating Power capacity (MW)	Steam (T/H)	Industrial water (Cu.m/H)	Direct shareholding (%)	COD	Tenor
IN OPERATION									
NNEG	SPP	125	38	38	9	-	GPSC (30%)	2016	25/2041
NNEG Expansion	SPP	60	18	-	3	-	GPSC (30%)	2020	25/2041
Rayong Expansion (CUP-3)	SPP	15	15	15	-	-	GPSC (100%)	2019	n/a
Rayong Expansion (CUP-4)	SPP	45	45	45	70	-	GPSC (100%)	2019	-
Total SPP		**2,614**	**2,192**	**2,174**	**2,701**	**7,292**			
VSPP and others									
CHPP	VSPP	5	5	5	-	-	GPSC (100%)	2008	30/2038
CHPP (Solar)	VSPP	5	5	5	-	-	GPSC (100%)	2016	2041
Glow Energy Solar Plant	VSPP	1.55	1.55	1.55	-	-	GLOW (100%)	2012	20-25
TSR (SSE1)	VSPP	80	32	32	-	-	GPSC (40%)	2013	25/2038
Glow Energy Solar PV Rooftop	VSPP	0.87	0.87	0.87	-	-	GLOW (100%)	2019	15
Glow Energy Solar PV Rooftop	VSPP	1	1	1	-	-	GLOW (100%)	2019	15
ISP1	Solar	20.8	20.59	20.59	-	-	GPSC (99%)	2017	20/2037
GRP	VSPP	39.5	39.5	-	-	-	GPSC (100%)	2014-15	2039/2040
NL1PC	Hydro	65	26	26	-	-	GPSC (40%)	2019	27/2044
Chonburi Clean Energy (CCE)	VSPP	8.6	2.87	2.87	-	-	GLOW (33%)	2019	20
Rayong WTE	VSPP	9.8	9.8	-	-	-	GPSC (100%)	2021	18/2039
Total VSPP and others		**237**	**145**	**95**	**-**	**-**			
ERU									
ERU	Cogen	250	250	-	175	-	GPSC (100%)	2023	25/2048
Total ERU		**250**	**250**	**-**	**175**	**-**			
Total capacity		8,011	5,026	4,708	2,876	7,372			

Note: Equity capacity includes 100% stake in GLOW, GRP and ERU
GPSC Portfolio as of end-2019

2019 Maintenance schedule: Sriracha and Rayong plants

Site	Description	Duration	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Q1			Q2			Q3			Q4		
CUP-1	GTG11/HRSG-11	8 Days	1 1Y 8											
	GTG16/HRSG16	8 Days	9 1Y 16											
	GTG14/HRSG14	14 Days	17 HGPI 30											
	Aux. Boiler.11	14 Days			15 3Y 28									
	GTG12/HRSG12	11 Days				7 1 Y 17								
	GTG11/ HRSG11	24 Days					15/5 MI	7/6						
	GTG13/HRSG13	11 Days							12 1Y 22					
	GTG15/HRSG15	14 Days										14 HGPI 31		
CUP-2	GTG21/HRSG21	11 Days			9 1Y 19									
	GTG22/HRSG22	11 Days						12 1Y 22						
	Aux. Boiler.21	14 Days							1 3Y 14					
	Steam Turbine.21	-												
CUP-3	Aux. Boiler.31	11 Days								4 1Y 14				
	Aux. Boiler.33	11 Days										10 1Y 15		
	Aux. Boiler.32	11 Days									26/9 1Y	6/10		
	Steam Turbine.31	-												
SRC	GT11/HRSG#1	200 hours (8.33 days)											15 1YO 25	8 CI 16
	GT12/HRSG#2												15 1YO 25	
	Steam Turbine.10													

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

2020 Maintenance schedule: Sriracha and Rayong plants

Site	Description	Duration	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			2020											
			Q1			Q2			Q3			Q4		
CUP-1	HRSG-11	8 Days					1Y							
	GTG16/HRSG16	14 Days	HGPI/3Y											
	HRSG14	8 Days	1Y											
	Aux. Boiler.11	8 Days			1Y									
	GTG12/HRSG12	22 Days				MI/3Y								
	HRSG13	8 Days							1Y					
	HRSG15	8 Days										1Y		
CUP-2	HRSG21	8 Days			1Y									
	GTG22/HRSG22	22 Days							MI/3Y					
	Aux. Boiler.21	8 Days							1Y					
	STG21	27 Days								2M				
CUP-3	Aux. Boiler.31	13 Days								3Y				
	Aux. Boiler.32	13 Days										3Y		
	Aux. Boiler.33	13 Days									3Y			
	Steam Turbine.31	-												
CUP-4	GTG41	5 Days												RM
	HRSG41	11 Days							1Y					
SRC	GT11	-												
	HRSG#1	8 Days											1Y	
	GT12	8.33 Days											1Y	
	HRSG#2	8 Days											1Y	
RDF	All Equipment	7 Days										1Y		

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
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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

2019 & 2020 Maintenance schedule: IRPC-CP

Plant	Unit	2019 Q1 (A)	2019 Q2 (A)	2019 Q3 (A)	2019 Q4 (F)
IRPC-CP	Block 1				
	CTG 21	4:58 hr.	1	1	1
	HRSG 21	4:58 hr.	1	1	1
	CTG 22	0:59 hr.	1	1	1
	HRSG 22	0:59 hr.	1	1	1
	STG 23	0:59 hr.			
	Block 2				
	CTG 31	0:44 hr.	1	1	1
	HRSG 31	0:44 hr.	1	1	1
	CTG 32	12:23 hr.	1	6	1
	HRSG 32	12:23 hr.	1	6	1
	STG 33			3	
	Aux. Boiler		7		

Plant	Unit	2020 Q1 (F)	2020 Q2 (F)	2020 Q3 (F)	2020 Q4 (F)
IRPC-CP	Block 1				
	CTG 21	6	1	1	1
	HRSG 21	6	1	1	1
	CTG 22	6	1	1	1
	HRSG 22	6	1	1	1
	STG 23	6			
	Block 2				
	CTG 31	1	6	1	1
	HRSG 31	1	6	1	1
	CTG 32	1	1	1	6
	HRSG 32	1	1	1	6
	STG 33				6
	Aux. Boiler		7		

Notes
YI Yearly Inspection 5 days
YI Yearly Inspection Aux Boiler 15 days
1 = 1 Day (24 hours)
3 = 3 Days (72 hours)
6 = 6 Days (144 hours)
7 = 7 Days (168 hours)

GPSC

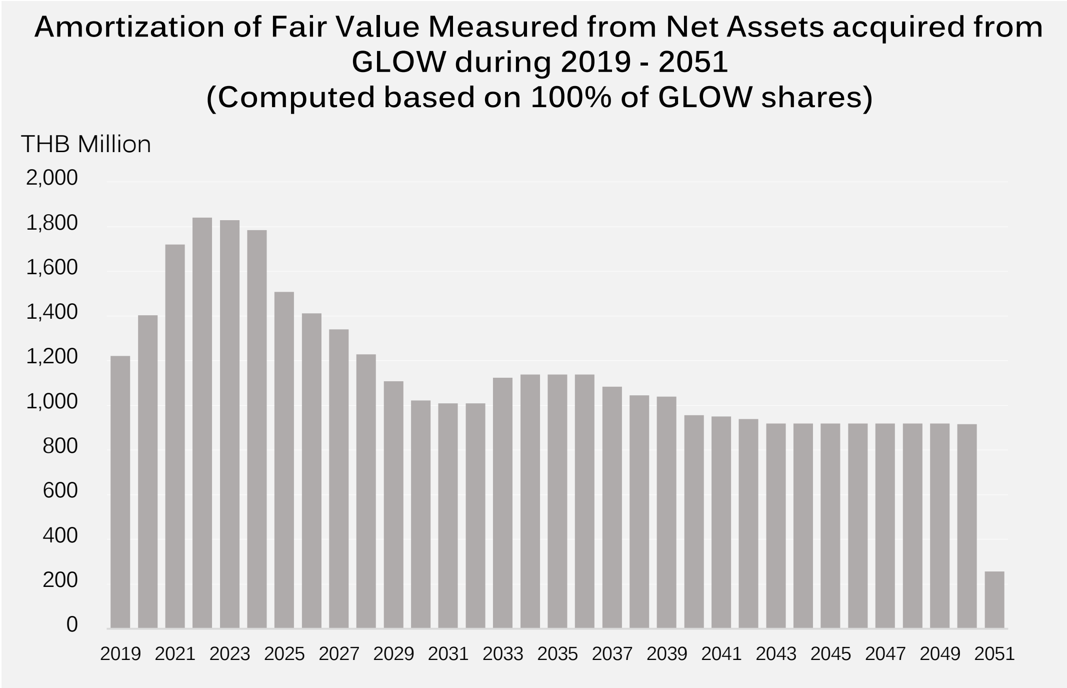
2019 & 2020 Planned Maintenance Schedule of Main Units from Glow

Main Units	Planned Maintenance Duration (Days)						
	2017	2018	2019	2019 by quarter			
				Q1	Q2	Q3	Q4
GHECO-One	36	-	39	39			
GIPP: Unit 1	-	-	-				
GIPP: Unit 2	-	-	-				
CFB 1	38	27	5	5			
CFB 2	27	5	21		21		
CFB 3	7	26	45	5		40	
Phase 5	31	5	23				23

Main Units	Planned Maintenance Duration (Days)							
	2017	2018	2019	2020	2020 by quarter			
					Q1	Q2	Q3	Q4
GHECO-One	36	-	39	-				
GIPP: Unit 1	-	-	-	-				
GIPP: Unit 2	-	-	-	-				
CFB 1	38	27	5	25			25	
CFB 2	27	5	21	23	2			21
CFB 3	7	26	45	3			3	
Phase 5	31	5	23	-				

Fair Value Measurement of Net Assets from the Acquisition of GLOW

Items	Book Value of GLOW (THB Million)	Fair Value of GLOW (THB Million)	Differential Value (THB Million)
Assets	107,655	155,500	47,845
Liabilities	(56,246)	(66,497)	(10,251)
Net Assets of GLOW at 14 March 2019	**51,409**	**89,003**	**37,594**
Non-Controlling interests at 30.89%		**(32,092)**	
Total Net Asset obtained GLOW at 69.11%		**56,911**	
Goodwill		**36,090**	
Proportion of acquisition cost 69.11%		**93,001**	



GPSC has completed the acquisition of 69.11% on 14 March 2019 at a total of THB 93,001 million, the company has measured the fair value of GLOW net assets as follow:

- The fair value uplift of THB 37,594 million from **Purchase Price Allocation (PPA)**
- **The fair value recognition of net assets** acquired from GLOW will be amortized yearly (based on the remaining period of the contract, 5 to 31 years).
- **Goodwill** will be subjected to an impairment test on a yearly basis.

Accounting impacts in 2020

TFRS 9

Assets	As-Is GPSC Policy	Impacts on TFRS 9
1. Derivatives (e.g. IRS ,CCS , FW)	• Disclosed in the notes to the financial information	• Recorded at fair value
2. Other long-term investments (e.g. RPCL, 24M)	• Recorded at cost • Gain or loss on sale of assets are presented in the statement of income	• Recorded at fair value • Gain or loss on sale of assets are not presented in the statement of income
3. Impairment of assets (e.g. receivables, loans)	• Impairment from historical information	• Consider the future credit risk of the debtor which may cause impairment faster

TFRS 16 (Accounting for lessees)

Profit & Loss	Current	TFRS 16
Revenue	-	-
SG&A	Rent, Lease	-
EBITDA	-	
Depreciation	-	Depreciation
EBIT	-	
Finance cost	-	Interest from lease agreement
EBT	-	

Balance Sheet	Current	TFRS 16
Assets	Not recorded	Right-of-use assets
Liabilities	Not recorded	Lease liabilities
Off balance	Right-of-use assets and Lease liabilities	-

Along The Journey of

ENERGY

TRANFORMATION

by GPSC

S-CURVE BUSINESS

"Shift Design to Decide"

TO BE PTT GROUP'S FLAGSHIP OF ENERGY SOLUTION PROVIDER

Distributed Energy Resources

System Integrator (Developer in Micro-grid/ESS)

- ESS Projects
  (PTT Group and Non-PTT Group)
- Micro Grid
- Build Own Capability / Company Acquisition

Transformation Enablement

Battery Manufacture

- Joint Development with PTT Group
- Develop Battery Manufacture Pilot Plant
  30 MWh (End of 2020)

Digital Energy

New Energy Platform

- Set Up Dedicated Team
- Create Investment Roadmap
  & Sandbox (Peer-to-Peer Trading)
- Identify Potential Opportunities
  for New Energy Platform

Product

Cheaper **Safer** **Greener**

24M Semi Solid Battery Unique Design

- Shorter Process
- Remove **40%** Inactive Material
- **No** binder Needed
- **Low Risk** of Contamination

First Product Specification (LFP*)

NOMINAL CAPACITY (C/10)	32 – 35 Ah
VOLTAGE (C/10)	3.2V
NOMINAL CONTINOUS POWER	25 W
NOMINAL PEAK POWER (1C)	100 W
ROUNDTRIP ENERGY EFFICIENCY, C/4	92.5%
CYCLE LIFE (100% DOD, 80% Retention)	4,000 cycles
SAFETY (UN 38.3)	<=EUCAR 4
RECOMMENDED OPERATING TEMP.	15°C to 35°C
STORAGE TEMPERATURE	-25°C to 55°C

*LFP : Lithium Iron Phosphate

Location

Map Ta Phut Industrial Estate

Plot No. : S-7

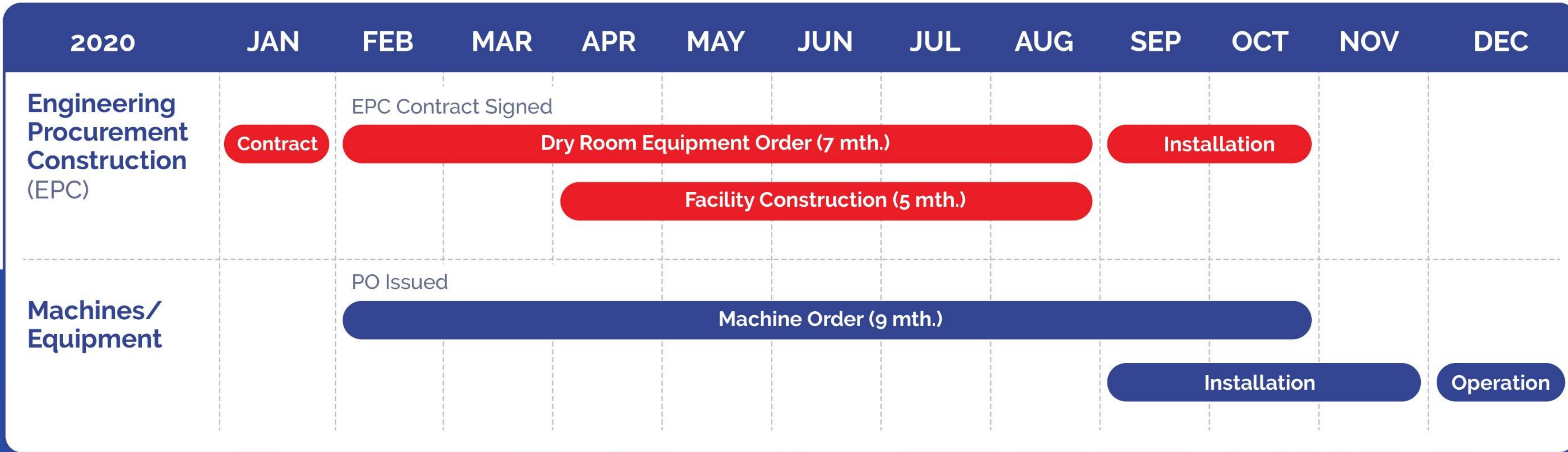
Size : 12-1-3.63 Rai

Area : General Industrial Area, Map Ta Phut Industrial Estate

Land Owner : Industrial Estate Authority of Thailand (IEAT)

Investment : 1.1 Billion THB

Project Schedule



First Battery Cell by the End of 2020

BATTERY
MANUFACTURE DEVELOPMENT

PRODUCT Development

- Increase Product Performance
- Product Variety for Different Application

PROCESS Development

- Scale Up Expertise
- Increase Process Performance
- Higher Yield, Higher Rate, Lower Cost

APPLICATION and Market Development

- Value Added by Vertically Integrated into the Final Product for End Users

VENTURE Capital

PRODUCT Licensing

SYSTEM INTEGRATOR

GC Logistics

- 2MW Solar PV + 625 kWh ESS
- Application : Renewable Energy Integration, Peak-Shift

ESS at Cafe Amazon Wangnoi

- 13.5 kWh
- Application :
  Renewable Energy Integration,
  Time-Shift, & Back-up

GC (Rayong Office)

- 1.44 MWh
- Application : Gas Turbine Efficiency Improvement. Time-Shift

Chiang Mai University (ERDi)

- 13.5 kWh
- Application :
  Renewable Energy Integration,
  Time-Shift, & Back-up

Wang Chan Valley (EECi)

Solar Rooftop : 0.5 MW

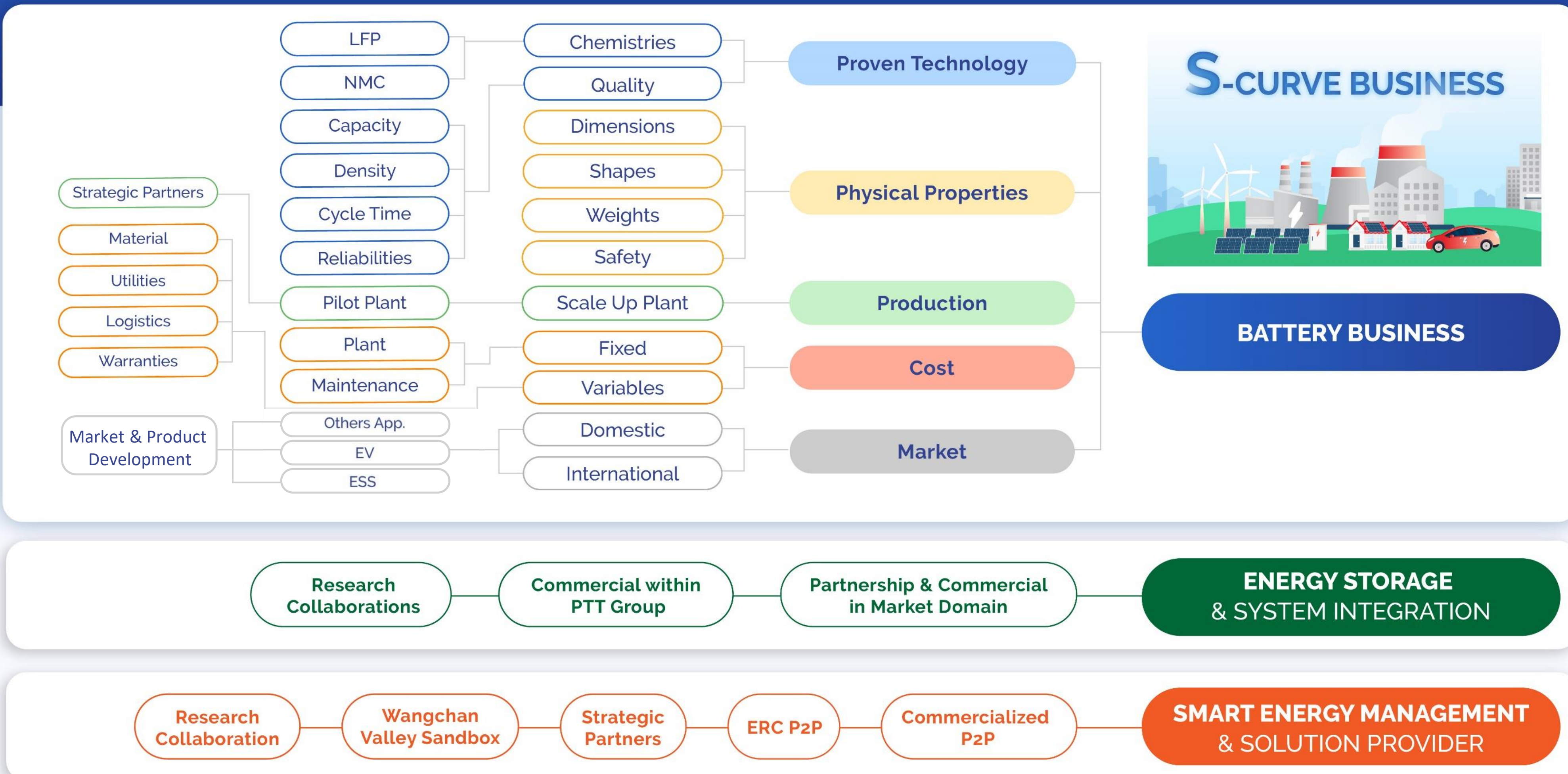
Solar Floating : 0.7 MW

ESS
Increase Renewable Energy Consumption
: 1.2 MWh

Energy Management + Trading
: Blockchain Peer to Peer (P2P)

EV Charger

THE JOURNEY OF PTT AND GPSC NEW S-CURVE



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