



GLOBAL POWER SYNERGY PUBLIC  
COMPANY LIMITED

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# Corporate Presentation

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November 6<sup>th</sup>, 2019

**THE INNOVATIVE POWER  
FLAGSHIP OF PTT GROUP**

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



## 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



Trading

Trading\*

100%

Import/Export/Out-out trading of petroleum and  
petrochemical products

## Downstream



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



22.58%

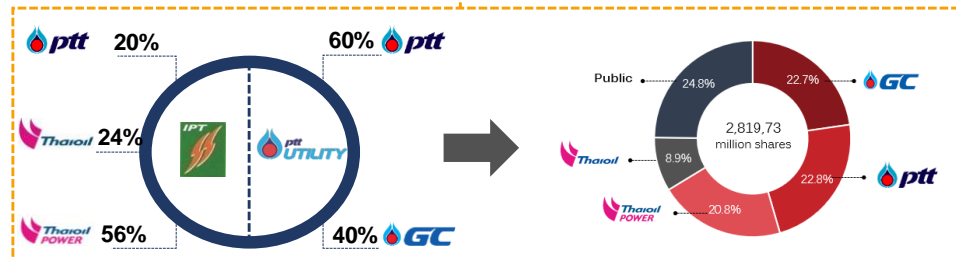
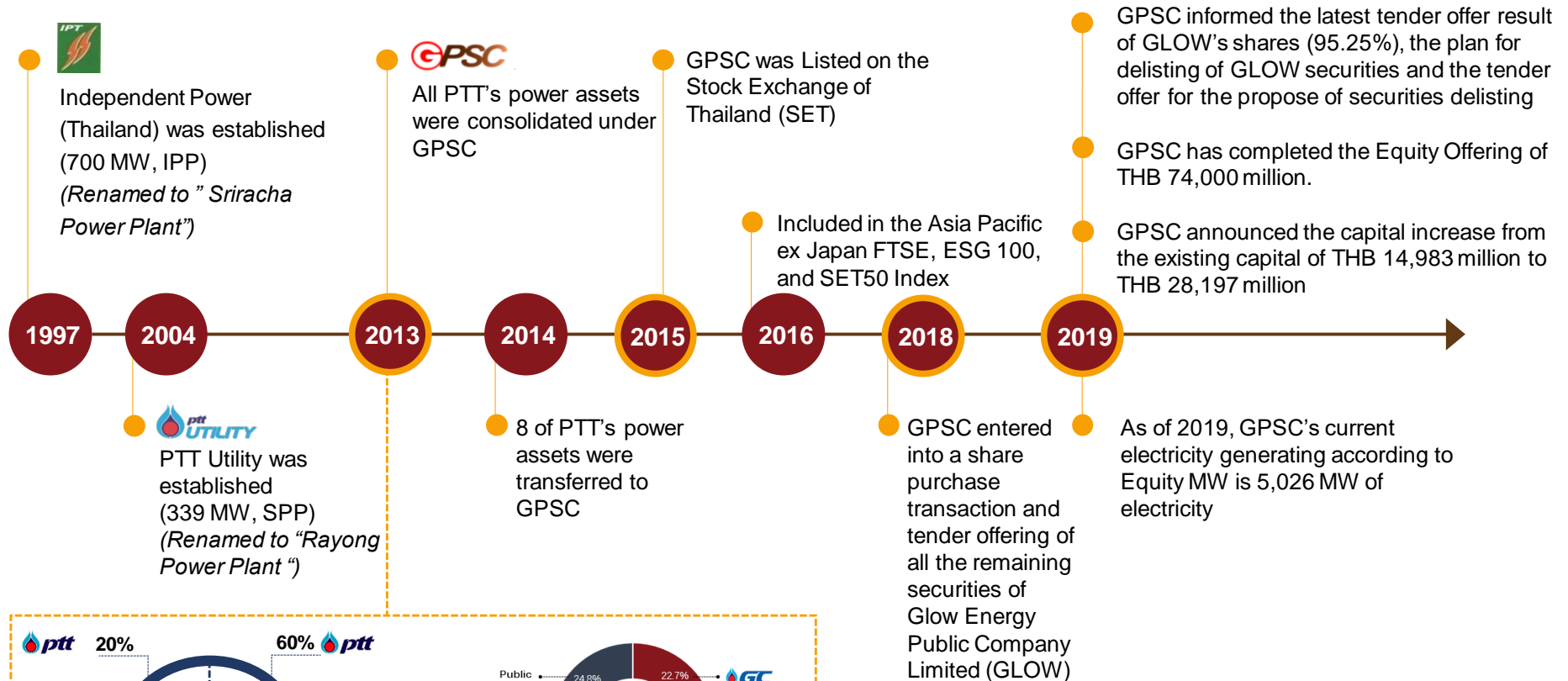
Power flagship  
New S-Curve business of PTT group

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



# 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.**





# GPSC's VISION and MISSION

## VISION



The Global Leading  
*Innovative and Sustainable*  
Power Company

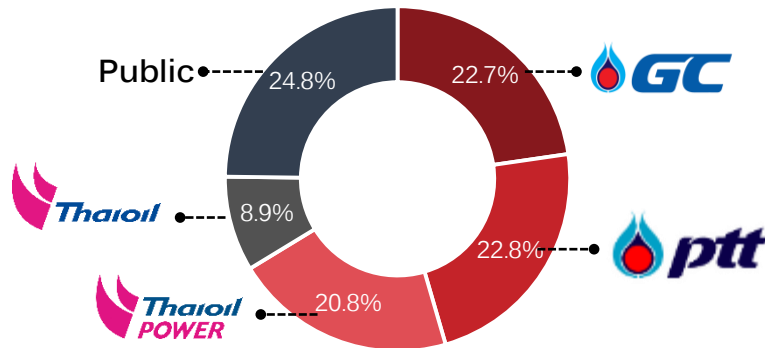
## MISSION



- 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 Innovative Power Company at a Glance

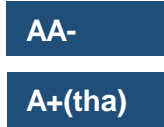
## Shareholding Structure



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

## Company Information

Head Office	555/2 Energy Complex Building B, 5th Floor, Vibhadi-Rangsit Road, Chatuchak, Bangkok, Thailand
Business Type	Energy & Utilities
Registered Capital (Paid-up)	THB 28,197 million (USD 914.1 million)
Market Cap (As of 18 Oct 2019)	THB 246,724 million (USD 7,998.6 million)



STANDARD  
& POOR'S

BBB-

Note: Use FX = 30.846 THB/USD ; the w.a. selling rate announced by the BOT on 15 Aug 2019

## In 2019, Total Equity Capacity<sup>1</sup>

⚡ Electricity 5,026 MWe

☁ Steam 2,876 T/H

### COMBINED CYCLE / COGENERATION / THERMAL<sup>2</sup>



⚡ Electricity 4,463 MW  
☁ Steam 2,876 T/H  
💧 Chilled Water 15,400 RT  
🏭 Industrial Water 7,372 Cu.m./H

### RENEWABLE ENERGY



⚡ Electricity 114 MW

### HYDROELECTRIC



⚡ Electricity 449 MW

### OTHER BUSINESSES



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

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

2) Equity capacity includes ERU

# GPSC Customers' Profile



## 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



52% Industrial Users



47% EGAT

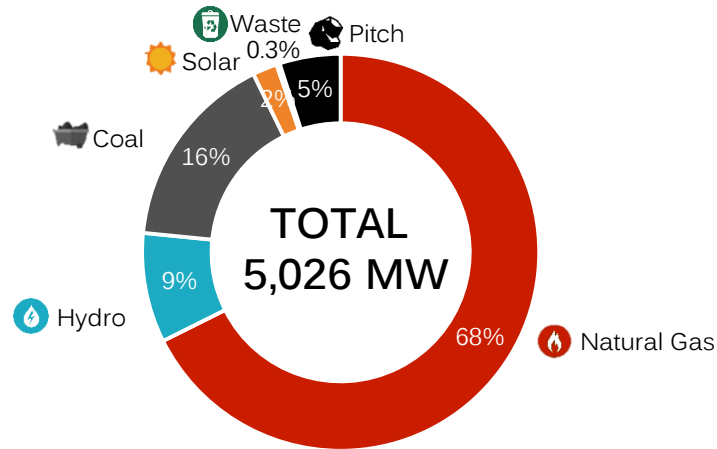


1% Others

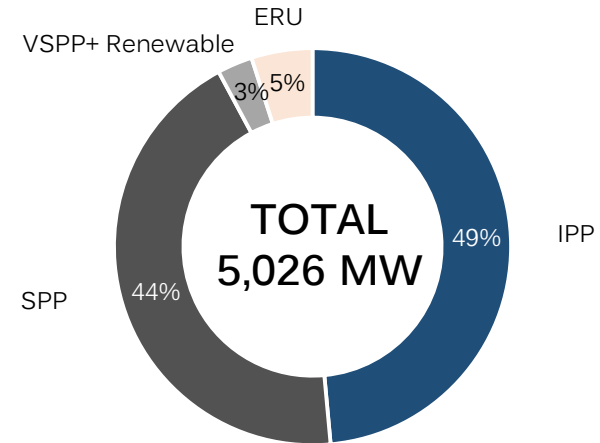
Q3/2019 Revenue by Customers

# 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%	149	101	2.00%	101
Waste	18	0.23%	9	13	0.25%	3
Pitch	250	3.12%	-	250	4.97%	-
<b>Total</b>	<b>8,011</b>	<b>100%</b>	<b>7,691</b>	<b>5,026</b>	<b>100%</b>	<b>4,748</b>

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
VSP+ Renewable	237	2.96%	227	144	2.87%	134
ERU	250	3.12%	-	250	4.97%	-
<b>Total</b>	<b>8,011</b>	<b>100%</b>	<b>7,691</b>	<b>5,026</b>	<b>100%</b>	<b>4,748</b>

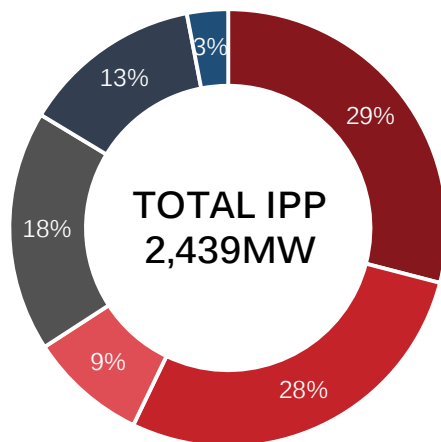
Note: Equity capacity includes 100% stake in GLOW, GRP and ERU  
GPSC Portfolio as of end-2019



# GPSC's Business Portfolio by Plant Type

## IPP

(49%)



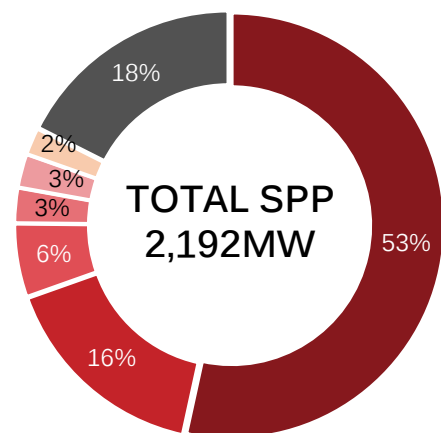
<b>Natural gas</b>		
Sriracha Power Plant	700MW	
GLOW IPP	677MW	
Ratchaburi Power ( RPCL)	210MW	

<b>Coal</b>		
GHECO-ONE	429MW	

<b>Hydro</b>		
Xayaburi Power (XPCL)	321MW	
Houay Ho	102MW	

## SPP

(43%)

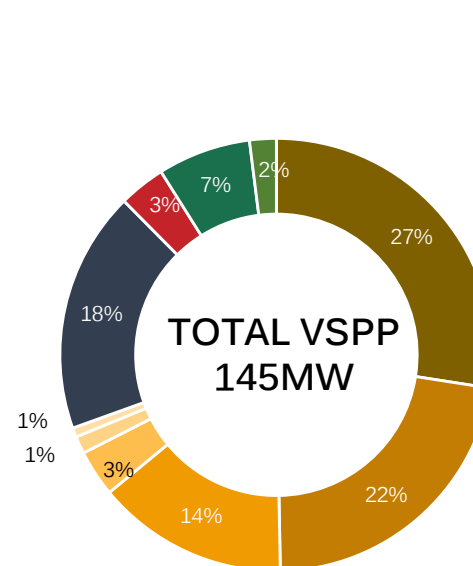


<b>Natural gas</b>		
Glow Co-Generation	1,171MW	
Rayong CUP 1-3	354MW	
IRPC-CP (Phase 1-2)	122MW	
Bangpa-in Cogeneration BIC (Phase 1-2)	59MW	
NNEG	56MW	
Rayong CUP 4	45MW	

<b>Coal</b>		
Glow Co-Generation	385MW	

## VSPP and Renewable

(3%)



<b>Solar</b>		
Solar Project	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	

<b>Hydro</b>		
Nam Lik 1 Power (NL1PC)	26MW	

<b>Natural gas</b>		
CHPP	5MW	

<b>Waste</b>		
Rayong WTE	10W	
Chonburi Clean Energy (CCE)	3MW	

## ERU

(5%)



<b>Pitch</b>		
Thaioil	250MW	

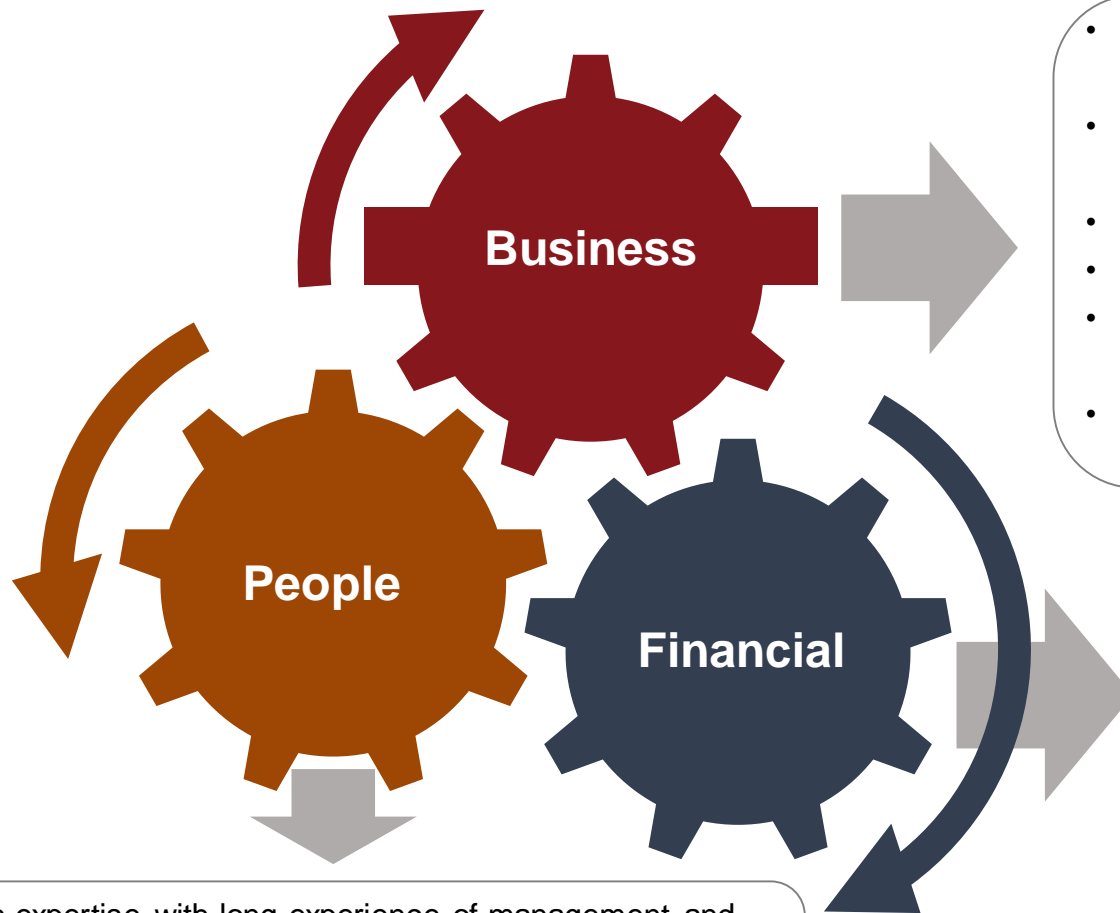
Note: Equity capacity includes 100% stake in GLOW, GRP and ERU  
GPSC Portfolio as of end-2019



# Investment Highlights



# Key Strengths



- High and strong potential growth along with PTT Group
- Diversity of products, customers, fuel types and location
- Strong customer profile
- Opportunities in related businesses
- Secured & long term supply and feedstock agreement
- Growth platform strengthened by synergies

- Strong financial position and financial flexibility
- Stable & predictable cash flow
- Low business risk profile

- High expertise with long experience of management and staff team in cogeneration power plant and PTT Group
- Can access to vast resources of PTT Group
- Good corporate governance

# SUSTAINABILITY STRATEGY & COMMITMENT

END

- To be listed in DJSI by 2022
- Increasing renewable energy up to 20% of GPSC's portfolio

WAY

*Highlight  
Y2019 - 2022*

Co-create Innovative & Sustainable Power for All



Set up *sustainability framework* in 4 perspectives for new investment/CSR initiatives

1. **Power Accessibility:** Co-value creation for power enhancement
  - Solar Rooftop
  - Off-grid power supply
2. **Quality of life:** Empower for a better living
  - CSR-DIW
  - Zero Waste Village
3. **Ecosystem:** Enable clean and green business
  - GHG Reduction
  - W2E/Zero Waste-to-Landfill
4. **Sustainable Innovation:** Inspire sustainable innovation
  - Young Social Innovator (YSI)
  - Innovation culture

MEAN

*Policy support*

*Communication*

*New - culture*

*Man-power with new skill set*



## GPSC Growth and Strategic Direction



Update of projects



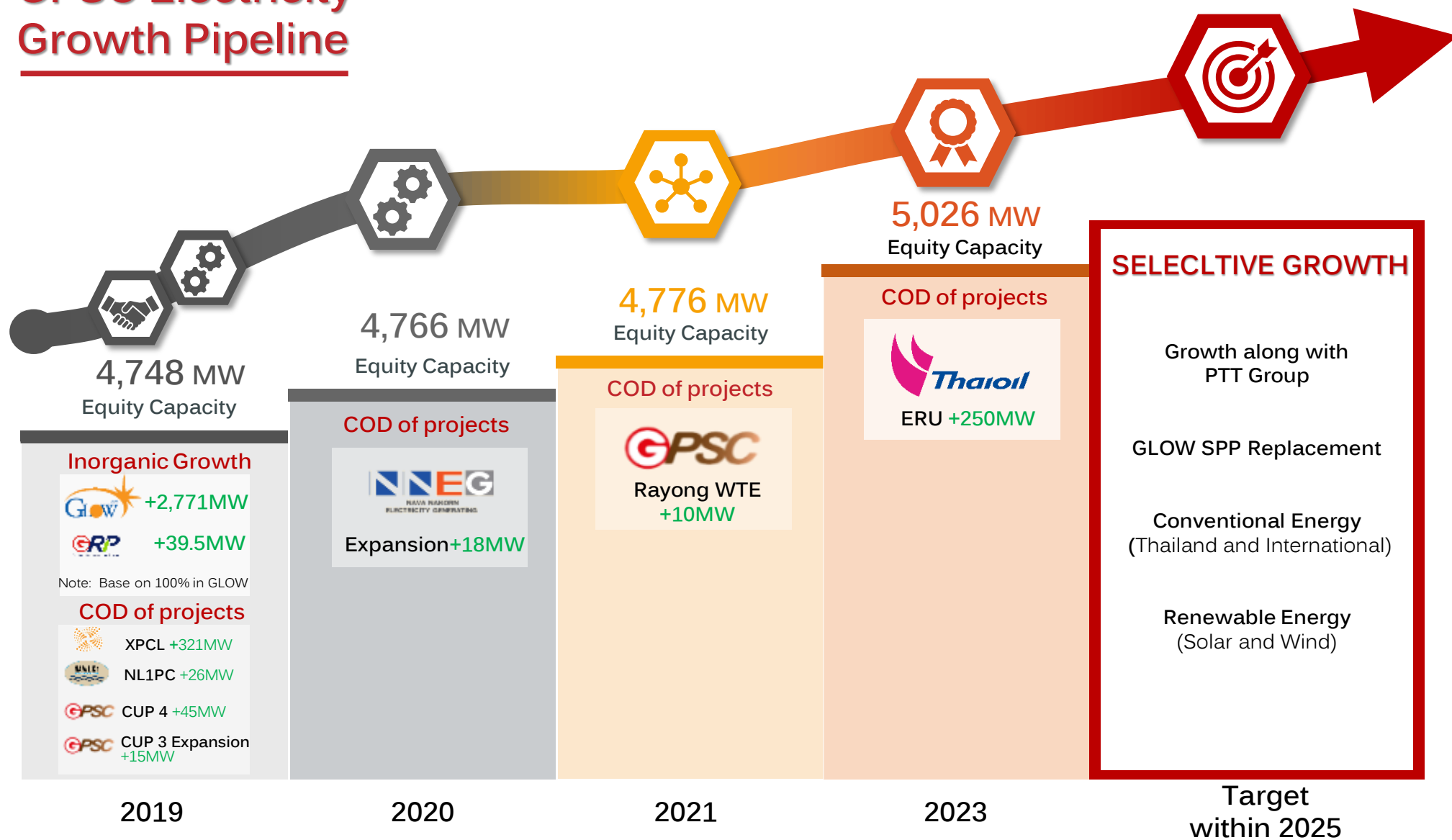
Equity Offering



Financial Performance



# GPSC Electricity Growth Pipeline



# Strategic Direction and Growth Strategy

## 3 Pillars

### SYNERGY & INTEGRATION



Synergy Capture



Operation Excellence  
& Asset Optimization



Corporate & Business  
Infrastructure

### SELECTIVE GROWTH



Growth along with  
PTT Group



Domestic and  
International



Renewable

### S-CURVE



Battery Business



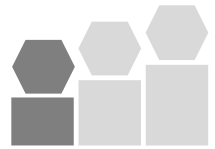
Energy Storage  
System Integrator



Energy Management  
Solution Provider

# Strategic Direction and Growth Strategy

## Synergy & Integration



### SYNERGY & INTEGRATION



#### Synergy Capture



Operation Excellence  
& Asset Optimization



Corporate & Business  
Infrastructure



#### Synergy Identification (Phase 1)

May – July 2019

Baselining  
performance

Enhancing and  
prioritizing synergy  
initiatives

- ✓ Developing business cases and action plans
- ✓ Launching selected Quick-win initiatives



#### Initiatives Launch

Aug – Oct 2019

Launching all Quick-wins

Preparing to launch all remaining synergy initiatives



#### Full Implementation

Nov 2019 Onwards

- ✓ Launching all initiatives
- ✓ Driving full integration plan implementation
- ✓ Monitoring, controlling and reporting progress on financial and other metrics

✓ Ongoing synergy identification for additional uplift in Phase 2

# Strategic Direction and Growth Strategy

## Selective Growth



Growth along  
with PTT Group



Domestic and  
International



Renewable

### SHORT-TERM GROWTH

2019-2020



#### GROWTH ALONG WITH PTT GROUP

Domestic and international  
such as Gas to power  
investment also the investment  
in Maptaphut and EEC area



#### PDP 2018

Opportunity capture such as  
SPP replacement as ERC  
announced the electricity  
purchase from SPP with  
contract ending during 2019-  
2025, Solar floating (EPC)  
and Solar PPPA



#### SELECT & DEVELOP STRATEGIC PARTNER

for focus countries

### LONG-TERM GROWTH

2021-2025



#### RENEWABLE IN GREENFIELD AND DEVELOPER SCHEME INVESTMENT



#### USE CO-GENERATION EXPERTISE TO EXPAND IN FOCUS COUNTRIES



# Strategic Direction and Growth Strategy S-curve



GPSC has strengthen its knowledge and capabilities in providing ESS services



**GPSC AS A SYSTEM INTEGRATOR**



**SEEKING NEW MARKET AND CUSTOMERS THROUGH PILOT PROJECTS**

2019

**EXPLORE NEW S-CURVE BUSINESS FROM ESS**

2019 Onwards



System Integrator/  
Developer in  
Micro-grid/ESS



Manufacturer in  
Battery



Market and  
Technology  
Intelligence in  
Digital Energy

GC



**Peak Shift & Gas Turbine Efficiency Improvement (Dec 2019)**



- ✓ Increase efficiency of Gas Turbine
- ✓ Improve power stability of GC operation in Rayong province
- ✓ Provide future power optimization for major industries supporting GC Group

GCL



**Renewable Integration for Peak Shift & Back-up (Mar 2019)**



- ✓ Increasing effectiveness of power consumption that benefit environment



**Battery Business**



**Energy Storage System Integrator**



**Energy Management Solution Provider**



**GPSC Energy Storage System Projects Information and Status:**

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

Complete Constructing



# Expected Synergy Benefit

## EBITDA Contribution Per Annum<sup>/1</sup> Identified in Phase 1

Operations  
& Maintenance



Procurement



Corp. Function  
& IT



89%

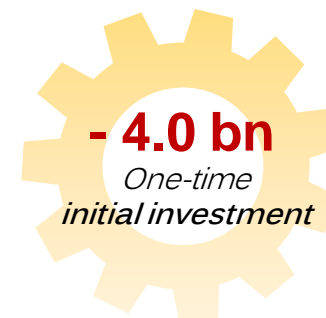
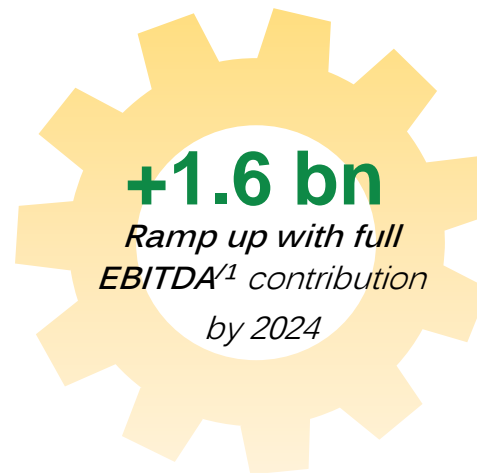
8%

3%

~1.6 bn

Note: 1. Recurring EBITDA synergy value based on current portfolio  
2. Use "THB bn" for numbers without unit.

### 1. Recurring Benefit in Phase 1



### 2. Additional One-time Benefit



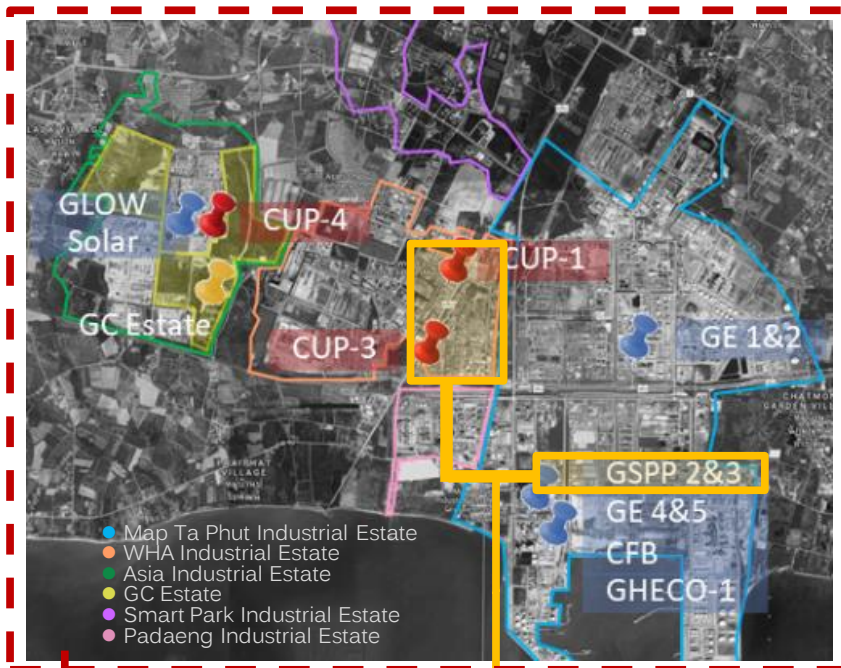
### 3. Further Identification in Phase 2



For 200 MW growth in MTP

# Quick wins & Big wins

Power and Steam Integration leads to cost savings and more capacities to serve new demand



## Big-win

### Full Integration from Power and Steam Integration

- Rebalance production to optimize cost

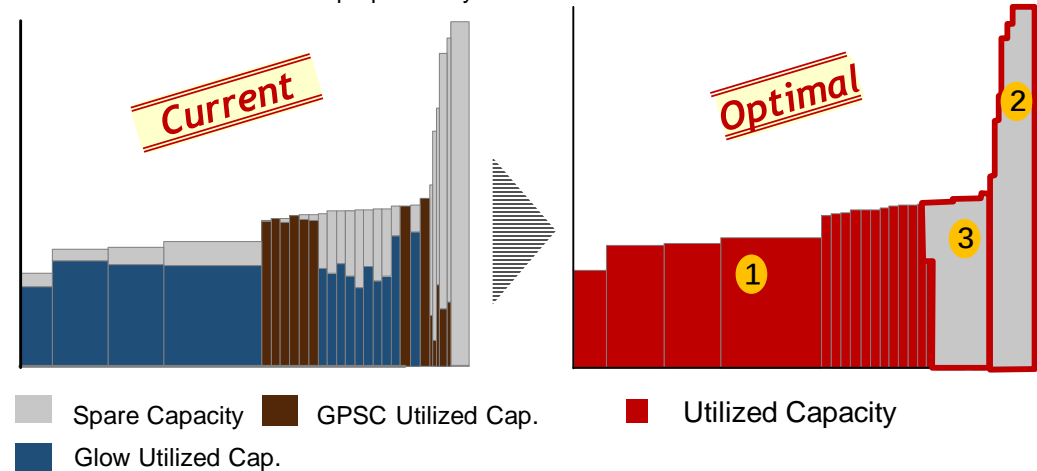
## Quick-win

### Immediate benefits from Power and Steam Integration

- Reduce standby time

### Marginal cost per unit (THB / MWh)

For illustrative purpose only



1

Substitute GPSC supply by GLOW's lower cost of production



2

Optimize Back-Up Capacity and Cost



3

Avoid or Delay Power Plant and Distribution Network CAPEX

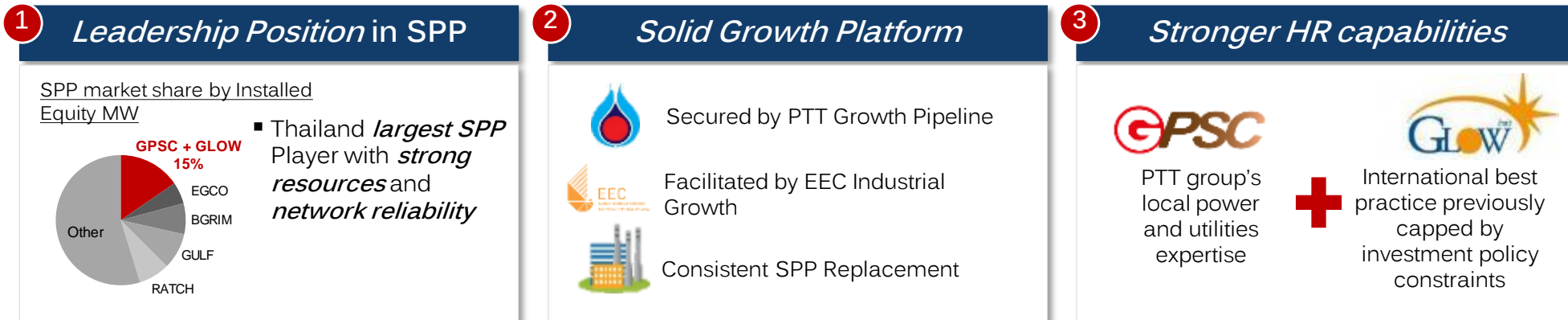


4

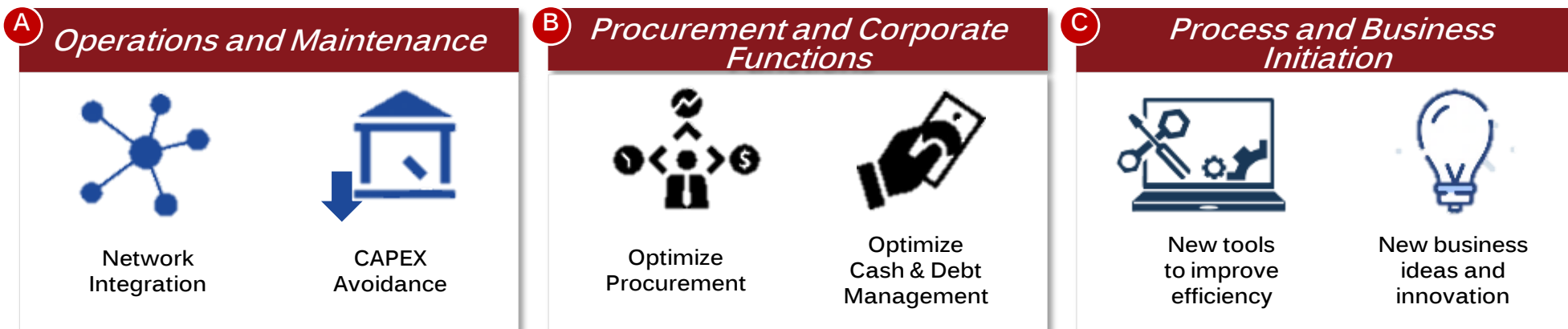
Increase Supply Opportunities

# Growth Platform Strengthened by Synergies

## 'Larger and Stronger Power House'



## 'Continuous Synergy Realization'



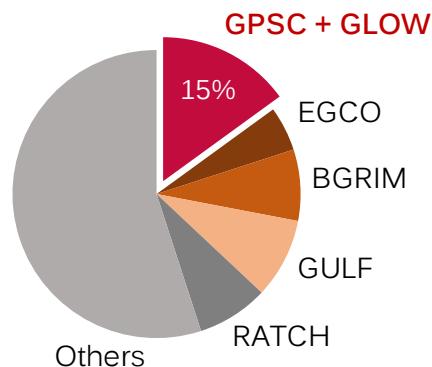


# 1. Leadership Position in SPP

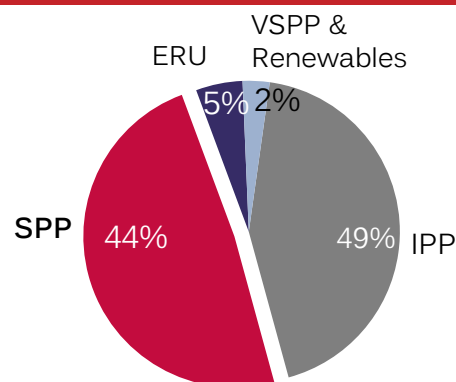
## SPP Market Share by Installed Equity MW/<sup>1</sup>

**Thailand's largest SPP player**

with strong resources and network reliability



## GPSC's Committed Portfolio/<sup>2</sup>



**Committed Equity  
5,026 MW**

**with SPP  
2,192 MW**

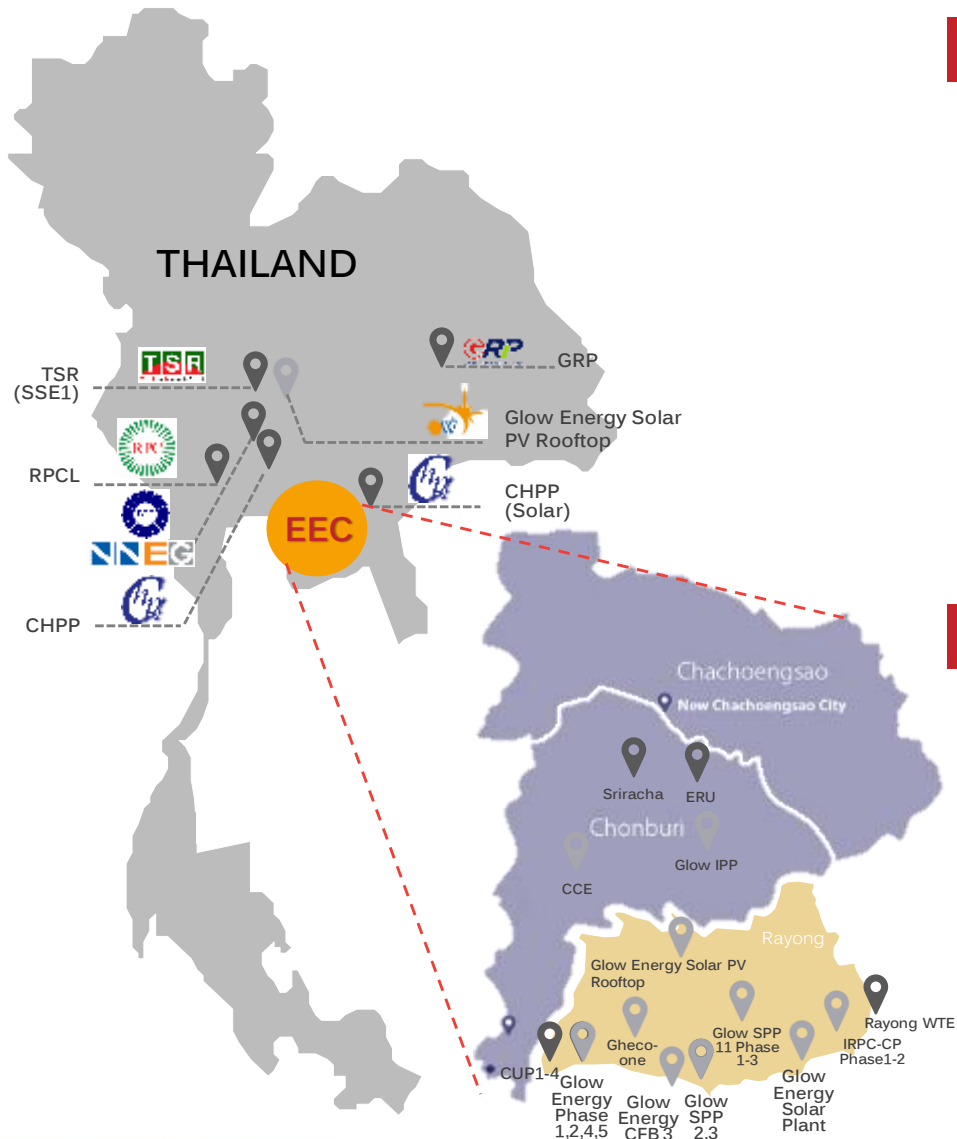
## SPP Replacement Project: Stage 1 and 2 Projects (Tentative only)

Plant	Power (MW)	Steam (TPH)	Max. EGAT PPA	Notice to proceed	SCOD
Stage 1					
GEN Phase 2	192	300	30 x 2	2020	2022
Stage 2					
GSPP2	192	300	30 x 2	2022	2024
GSPP3 (Coal)	120	168	30 x 2	2022	2024, 25
GSPP11#1	80	-	30 x 1	2023	2025
<b>Total</b>	<b>584</b>	<b>768</b>			

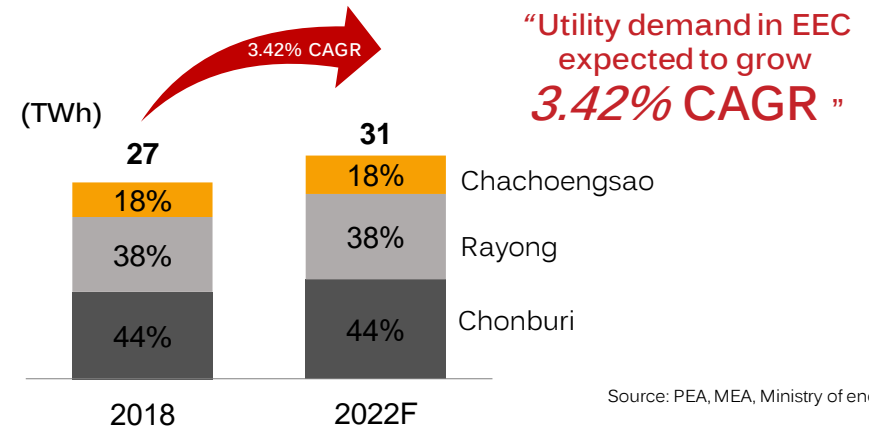
Note: 1. Data source from companies' website and ERC as of July 2019  
2. Based on 100% in GLOW

Source: Glow Analyst Meeting Q1/2019

## 2. Solid growth platform and Expansion in EEC



### Capture solid growth in EEC



### Supportive Industrial Customers Landscape



>5 Industrial estates



>5 Industries

- Petrochemical
- Chemical
- Refinery
- Steel
- Industrial gas

~75 companies

~120 plants & facilities

#### Customer needs

Reliability

Cost competitiveness

Backup support

Flexibility

### 3. Stronger HR capabilities

#### Human Resource Key Enablers



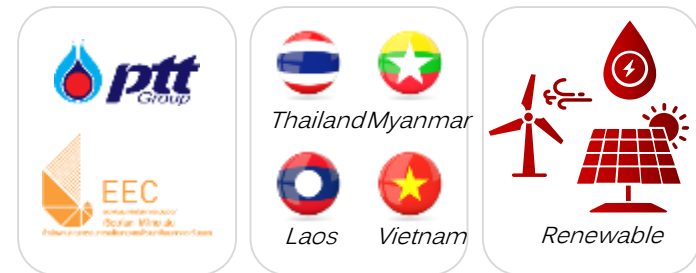
- Culture Alignment
- Growth Mindset
- Leadership Development
- Strengthening Core Competencies
- Employee Engagement
- People System Alignment



#### Group's Objectives

##### Selected Growth

- Core and project management Expertise
- Technical Expertise
- International BD talents
- M&A, Legal & Financial



##### S Curves and Digitization

- Dedicated digital energy team
- Technical Expertise
- System integrator / micro-grid
- New Initiatives



GPSC Growth and Strategic Direction



Update of projects



Equity Offering



Financial Performance



# Nam Lik 1 Power Company Limited (NL1PC)



COD: 1-Jul-2019



% Progress

100%

## PROJECT SUMMARY

TYPE



Run-of-River  
Hydropower  
Plant

ELECTRICITY (MW)

64.7

LOCATION

Northern of  
Vientiane, Lao PDR



• Electricite Du Laos (EDL)  
(63.8 MW for 30 years from  
signing date)

CUSTOMER

GPSC HOLDING

40%

Of total share

PROJECT UPDATE

- Overall construction and commissioning test was completed.

# Xayaburi Power Company Limited (XPCL)



COD: 29-Oct-2019

% Progress

100%

## PROJECT SUMMARY

TYPE



Run-of-River  
Hydropower  
Plant

ELECTRICITY (MW)

1,285

LOCATION

Lao PDR

CUSTOMER



• EGAT  
(1,220 MW)



• Electricite  
Du Laos  
(EDL)  
(60 MW)

GPSC HOLDING

25%

Of total share

PROJECT UPDATE

- The main construction tasks, such as power house, intermediate block, fish ladder and 500 kV transmission line were mostly completed.
- The commissioning test of each unit has been in progress in order to sell electricity to EGAT during the Unit Operation Period (UOP).

# CENTRAL UTILITY PLANT 4

## : CUP4 (THAILAND)








SCOD: Q4/2019

% Progress

3Q19

99.7%

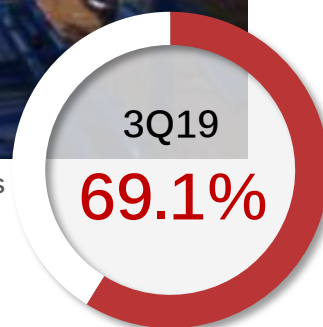
### PROJECT SUMMARY

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 HOLDING	PROJECT UPDATE	
<p>100%</p> <p>Of total share</p>	<ul style="list-style-type: none"> <li>• Main installations and erections have been completed, to prepare for the following unit test and commissioning.</li> <li>• The progress of the inter-connection of power and steam pipeline has been achieved over 90%.</li> <li>• Next activity will be integration test and commissioning.</li> </ul>	



# Nava Nakorn Electricity Generation (NNEG) Expansion Project



% Progress



## PROJECT SUMMARY

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

LOCATION	CUSTOMER
Nava Nakorn Industrial Promotion Zone, Pathumthani	 • Industrial User  • EGAT (SPP Firm 90 MW for 25 years) 

GPSC HOLDING	PROJECT UPDATE
<b>30%</b> Of total share	<ul style="list-style-type: none"> <li>Piling work was completed</li> <li>Main tasks such as engineering, foundation and procurement work for machines and equipment were executed as planned.</li> </ul>



# Rayong Waste to Energy (WTE)







% Progress

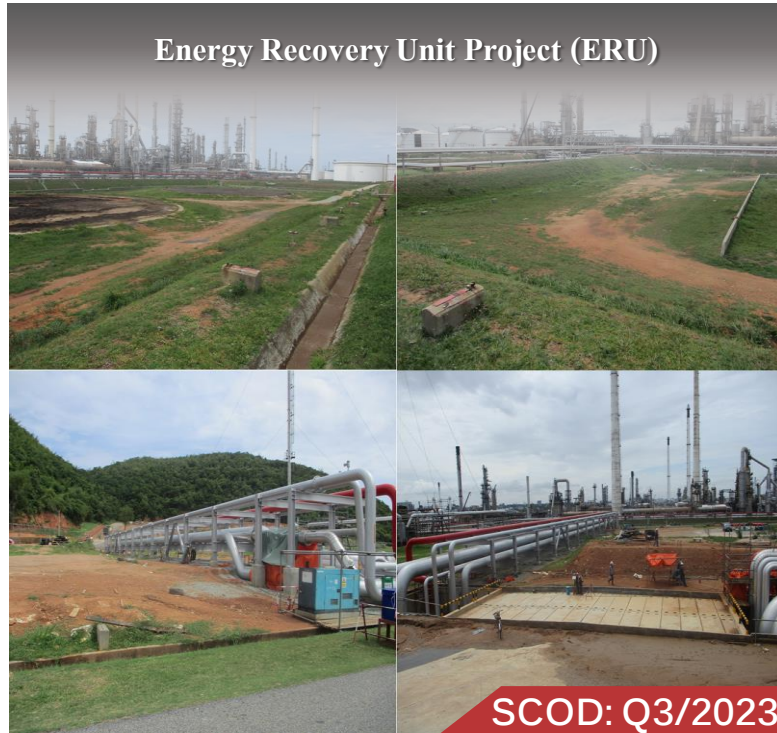
3Q19

4.85%

## PROJECT SUMMARY

TYPE	ELECTRICITY (MW)	RDF (T/day)
  Waste	8	300
LOCATION	CUSTOMER	
Rayong	 • Provincial Electricity Authority (PEA) 	
GPSC HOLDING	PROJECT UPDATE	
100% Of total share	<ul style="list-style-type: none"><li>The RDF Project construction has been completed since 2018 while the RDF Power Plant Project construction began on April 2019.</li><li>The project is expected to COD in Q2/2021.</li></ul>	

# Energy Recovery Unit Project (ERU)



## 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



Pitch

### ELECTRICITY (MW)

250

### STEAM (T/h)

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 HOLDING

100%  
Of total share

### PROJECT UPDATE

- Engineering design work: P&ID Review
- Construction work: Site preparation work, demolishing old equipment and temporary fence
- Purchasing machinery and equipment: Bid Evaluation / PO / P & ID
- Project progress as planned

### Project timeline

ERU Approval  
(1-Apr-19)

SCOD  
Q3'23

Project Construction Period

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

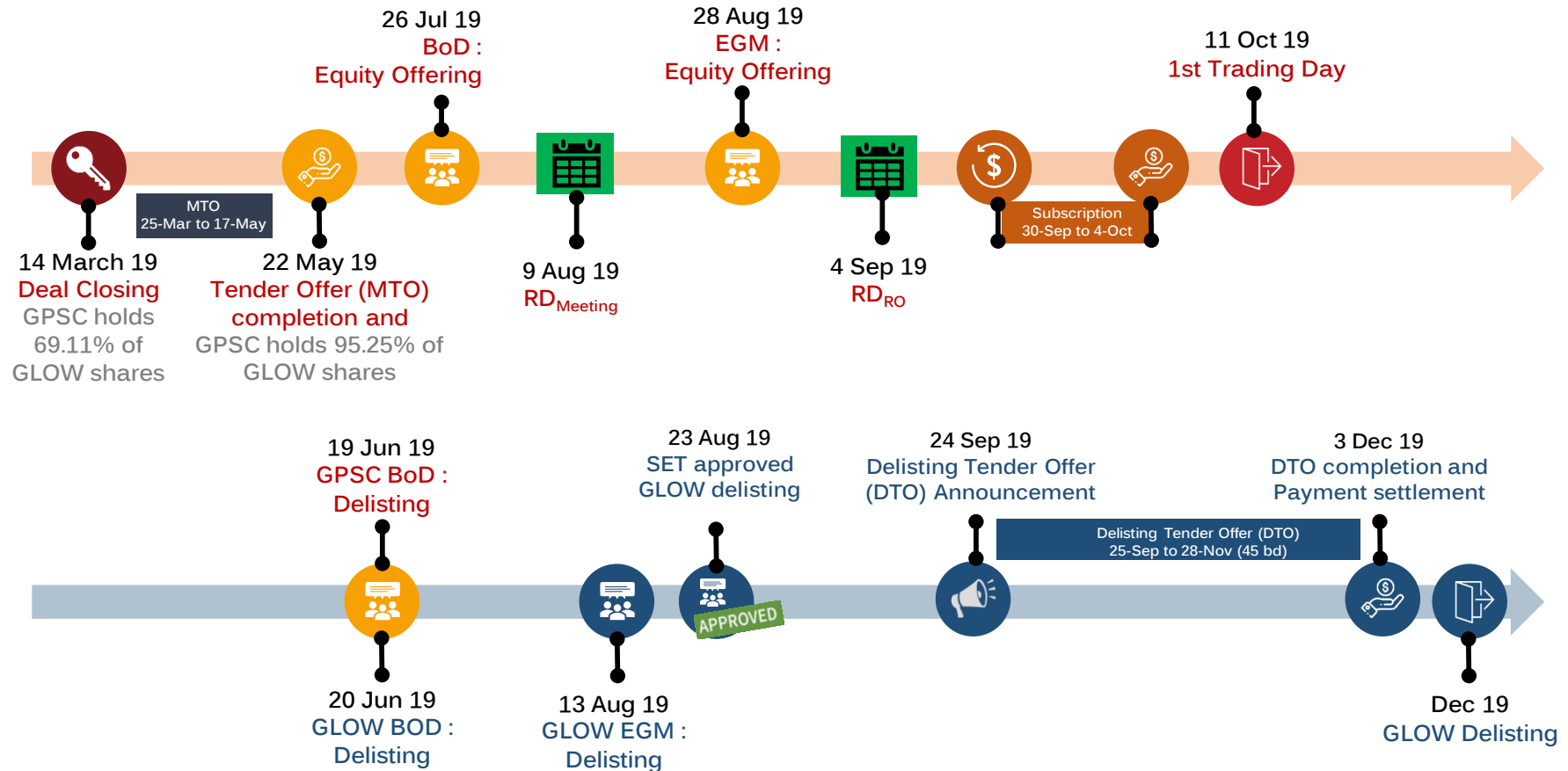


Equity Offering



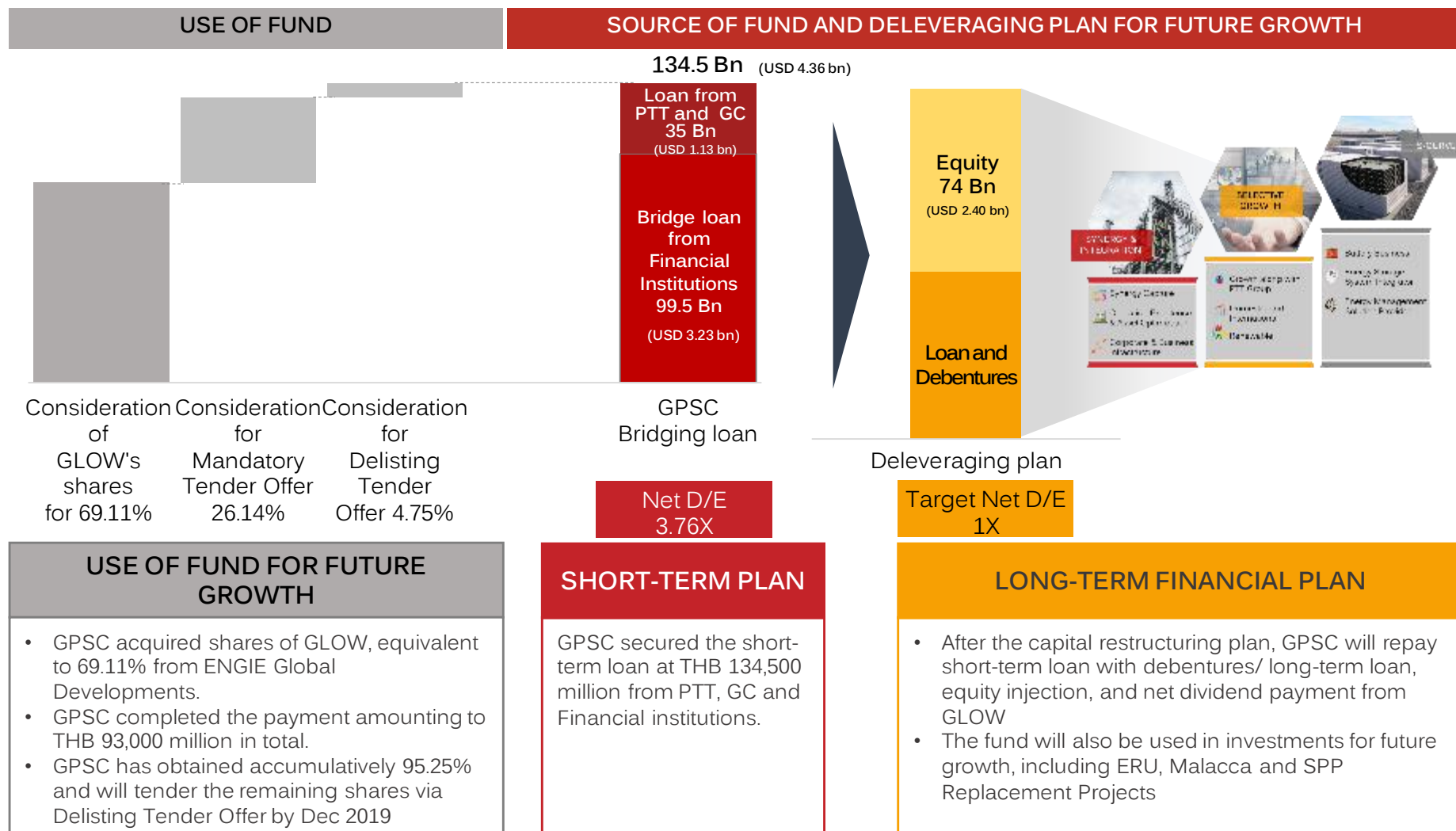
Financial Performance

# Timeline : Equity Offering and GLOW Delisting





# Use and Source of Fund with Deleveraging Plan



Note: Use FX = 30.846 THB/USD ; the w.a. selling rate announced by the BOT on 15 Aug 2019

# Equity Offering Summary

## Objectives



Achieve THB 74 bn as required



Completion by 2019



Optimize Free-float



## Right Offering



Giving rights to existing shareholders (no control dilution if rights are exercised)



Allow oversubscription for fund raising completion objective



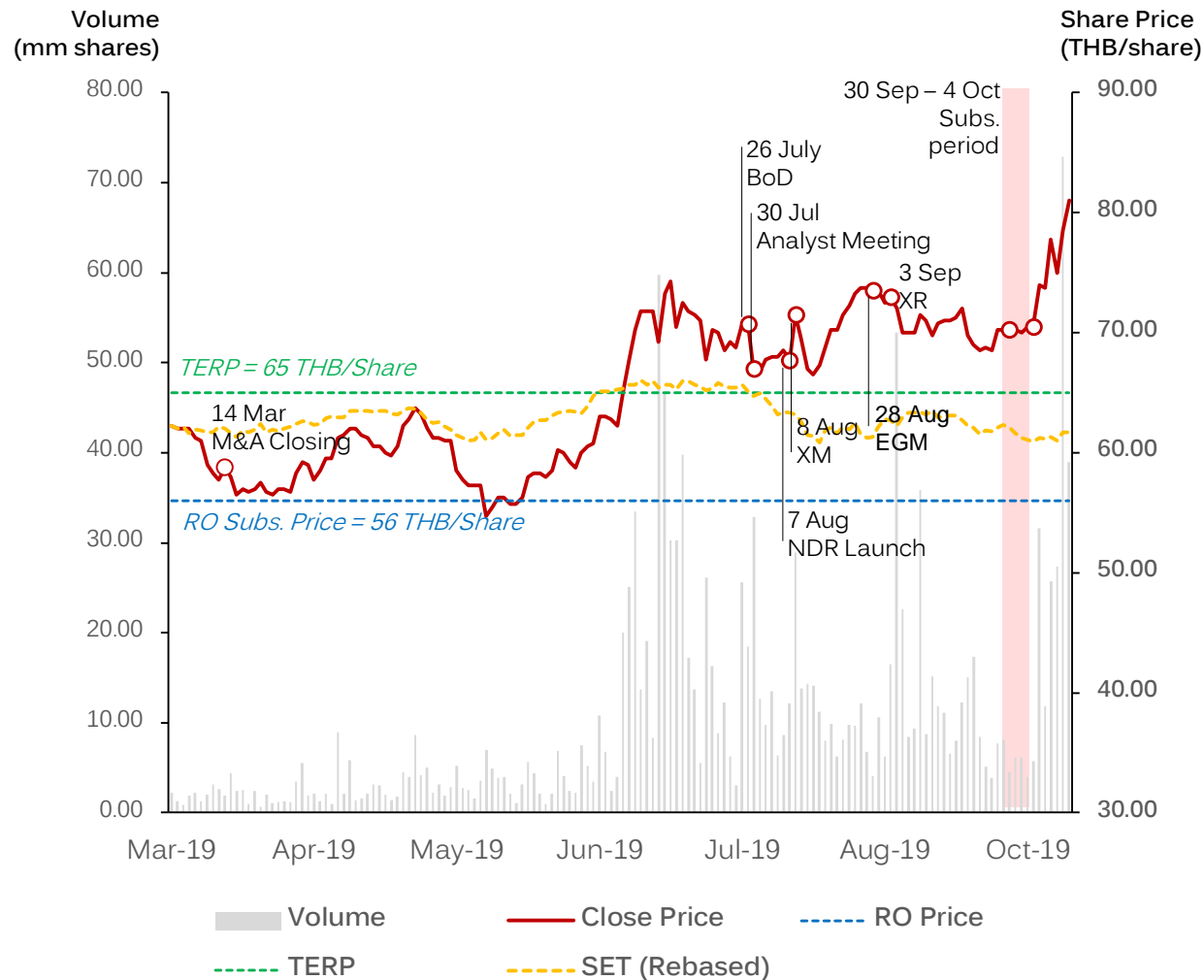
Offered at discounted market price to attract existing shareholders to subscribe



Appropriate method for meeting fund raising in timely manner

# The successful of Right Offering

## GPSC Price Performance



Source: SETSMART as of 16 October 2019

## Right Offering

RO Amount	THB 74,000 million
RO Subscription Price	THB 56 per share
Discount from 30D VWAP (THB 70)	20%
Allotted Shares	1,321 million shares
Allocation Ratio (Old : New)	1 : 0.8819

### Oversubscription with excess demand from minority

- Minority subscription of **115.6% of total minority right**
- Total subscription proceed of **THB 76,351 mm** (excl. PTT oversubscription)

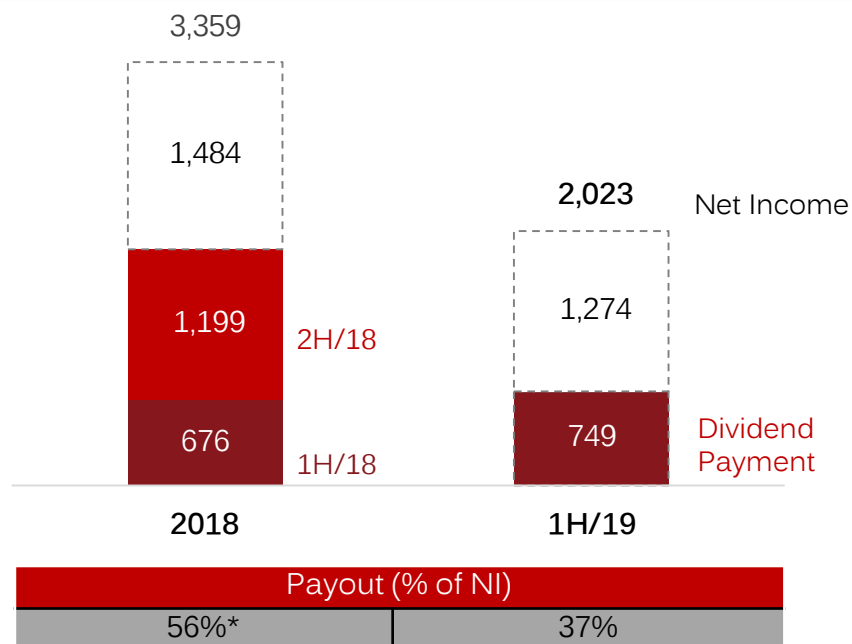
### Successful marketing effort results in strong after-event price performance

- Price continuously increase after Analyst Meeting and NDR launch (+20% to-date)
- Price has continuously been trading above TERP (price dilution impact was negated by market demand)

# GPSC Announce Interim Dividend Payment

## Dividend Payment

(THB Million)



**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)

## GPSC Announce to pay dividend of THB 0.50 per Share

GPSC announced on the 14<sup>th</sup> August 2019 that the company will pay dividend of THB 0.50 per share aggregating to an amount of THB 749 Million or 37% of the total net profit for the company of 1H/2019

The dividend payment is the result of:

- ✓ Successful acquisition of GLOW
- ✓ The better operating performance in 1H/2019
- ✓ The continuous growth of GPSC with 4 projects that is expected to COD within 2019 and 2020 including NL1PC, XPCL, CUP4 and NNEG



Note: \*Payout as a percentage of 2018 Net profit





GPSC Growth and Strategic Direction



Update of projects



Equity Offering

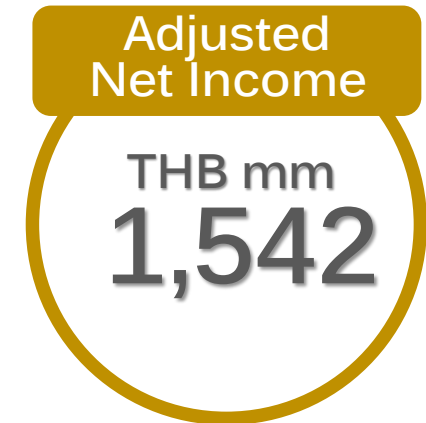
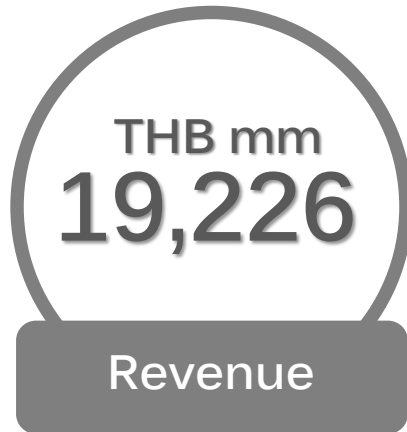


Financial Performance

# Key Financial Highlights

## Q3/2019

### Key financial highlights



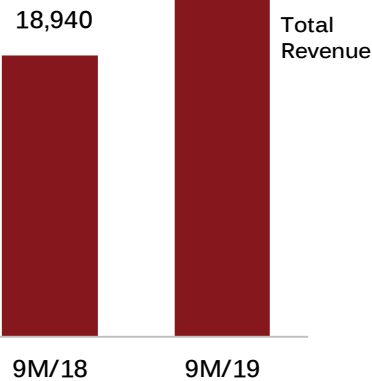
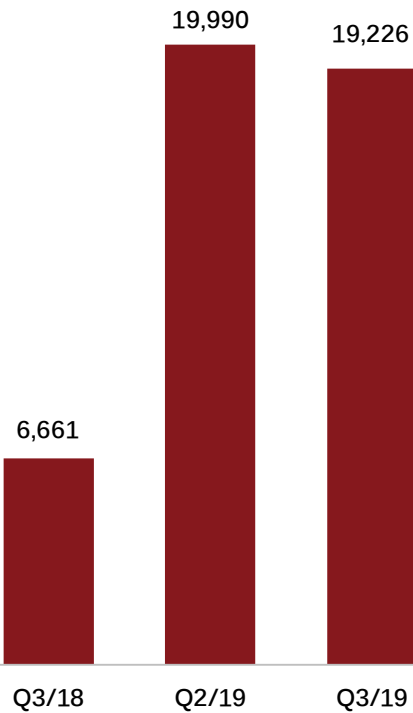
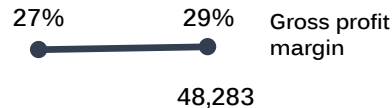
### The stable performance is mainly due to:

- ✓ GPSC has completed MTO on 22 May, 2019 22-May-2019 and can recognize a net profit of 95.25% thereafter.
- ✓ Independent Power Producer's (IPP) performance decreased due to the seasonality trend of the third quarter of every year, resulting in lower selling price and sales volume.
- ✓ The finance expense increased resulting from the burden of interest expense from short-term loans paid for the tender offer process in May 2019.

# Q3/2019 Financial Performance Summary (1/2)

## Revenue & Gross Profit Margin

(THB Million,%)



## Gross profit margin

QoQ

▼ 9%

YoY

▲ 241%

9M

▲ 175%

QoQ: Decreased due to:

- 1) IPP performance decreased due to the seasonality trend of the 3<sup>rd</sup> quarter
- 2) Higher electricity and steam sales of GPSC's cogen. plants as well as the lower natural gas cost resulting higher gross profit of these plants

YoY and 9M: Increased due to the full quarter contribution of GLOW's performance

## Revenue

QoQ

▼ 4%

YoY

▲ 189%

9M

▲ 155%

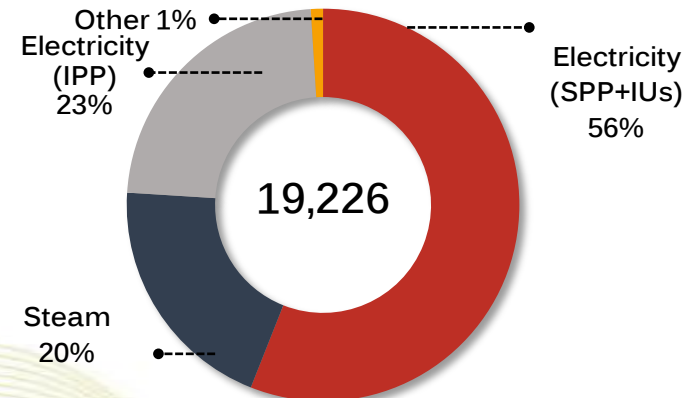
QoQ: Decreased due to:

- 1) Lower dispatch of Sriracha and Houay Ho and Lower AP of Gheco-1 effected by weight factor and the appreciation of THB against USD
- 2) Higher revenue from selling electricity and steam of GLOW's SPP plants

YoY and 9M: Increased due to the full quarter contribution of GLOW's performance

## Q3/19 Revenue by product

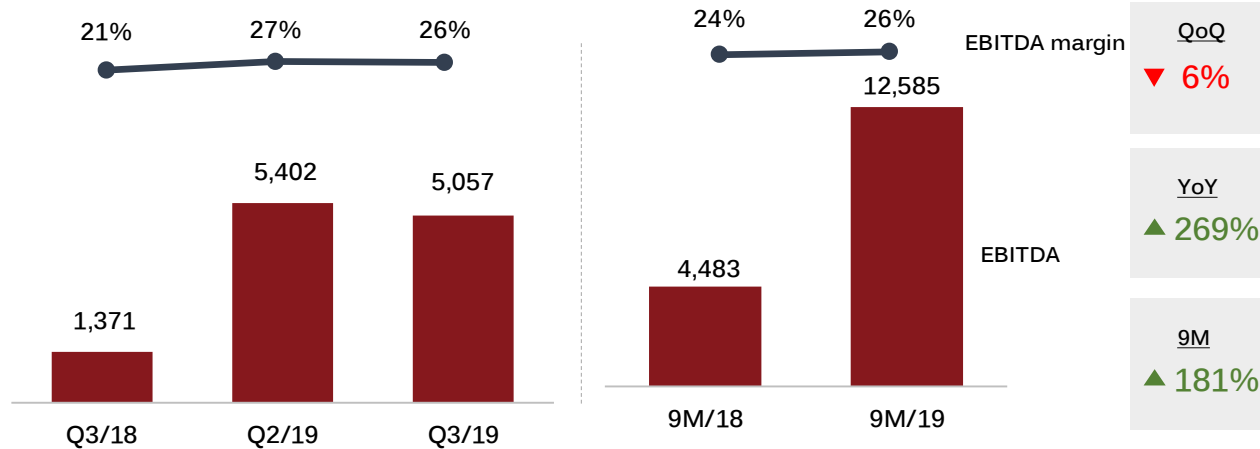
(THB Million, %)



# Q3/2019 Financial Performance Summary (2/2)

## EBITDA and EBITDA Margin

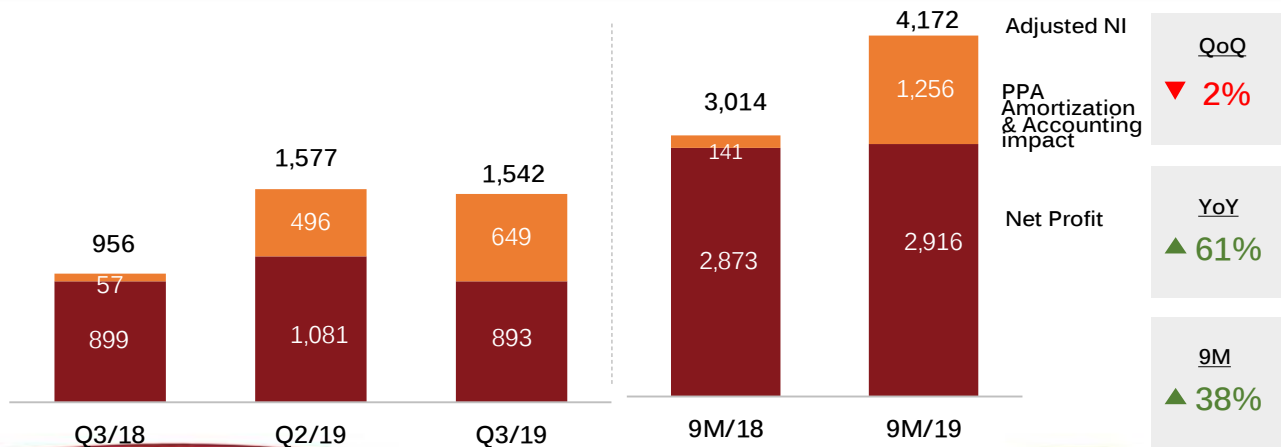
(THB Million, %)



- QoQ: Decreased due to:
  - 1) IPP performance decreased due to the seasonality trend of the 3<sup>rd</sup> quarter
  - 2) Higher electricity and steam sales of GPSC's cogen. plants as well as the lower natural gas cost resulting higher gross profit of these plants
  - 3) VSPP has lower revenue from ISP1 and CHPP seasonally
- YoY and 9M: Increased due to the full quarter contribution of GLOW's performance

## Net Profit and Adjusted Net Income

(THB Million)



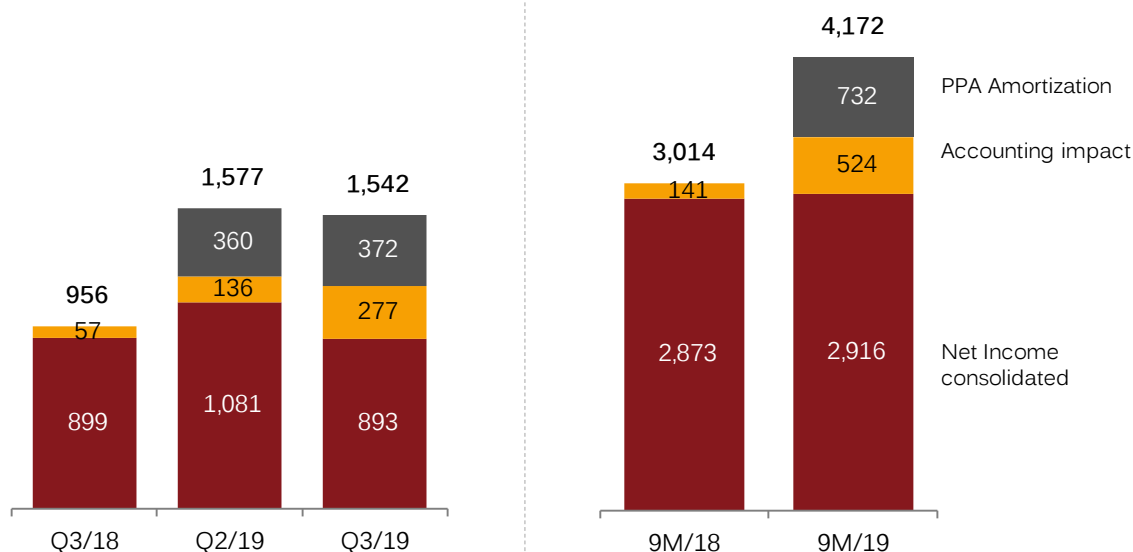
- QoQ: Decreased due to:
  - 1) IPP performance decreased due to the seasonality trend of the 3<sup>rd</sup> quarter. Main reason from reduction of weight factor of Gheco-1, resulting in a decreased in AP and lower dispatch volume of Houay-Ho as EGAT instruction.
  - 2) Higher interest expense from the tender offer of GLOW's shares in May 2019 and increasing in Front End Fee Amortization from the adjustment of ST loan repayment plan from RO proceeds in October 2019
- YoY and 9M: Increased due to the full quarter contribution of GLOW's performance



# Operating results: Adjusted Net Income

## 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:

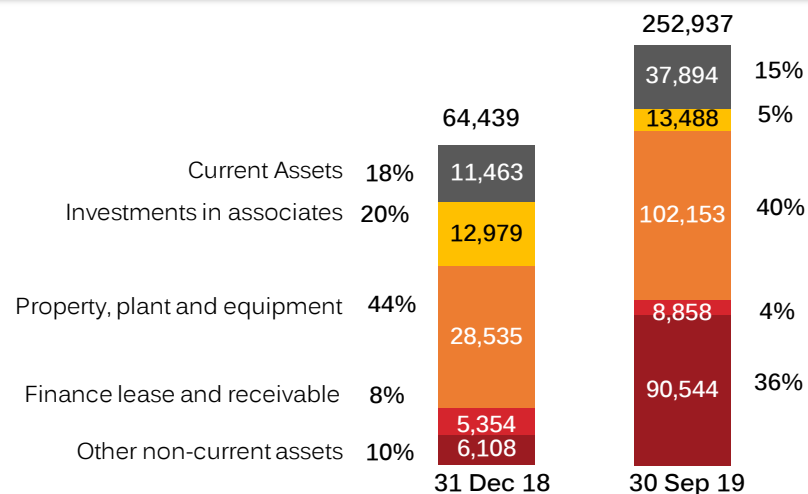
- The fair value of intangible asset from the acquisition of GLOW (PPA Amortization)
- The effects of accounting standards including:
  - Revenue from contracts with customers (TFRS 15)
  - Determining whether an arrangement contains a lease (TFRIC 4)
  - Foreign exchange and deferred tax asset effect

Adjusted Net Income	Q3/18	Q2/19	Q3/19	Change + / (-)		9M/18	9M/19	Change + / (-)
(Unit: Million Baht)				QoQ	YoY			
Net Profit for the Company	899	1,081	893	(17%)	(1%)	2,873	2,916	1%
Re-Add: Amortization of assets acquired from the acquisition of GLOW	0	360	372	3%	n/a	0	732	n/a
Re-Add: Accounting impact	57	136	277	103%	386%	141	524	272%
- TFRIC 4 and TFRS 15 effect	48	278	327	18%	581%	128	679	430%
- Foreign exchange and deferred tax asset effect	9	(142)	(50)	65%	(656%)	13	(155)	(1,292%)
<b>Adjusted Net Income</b>	<b>956</b>	<b>1,577</b>	<b>1,542</b>	<b>(2%)</b>	<b>61%</b>	<b>3,014</b>	<b>4,172</b>	<b>38%</b>

# Financial Position of GPSC and Subsidiaries

## Total Assets

(THB Million, %)



### Assets

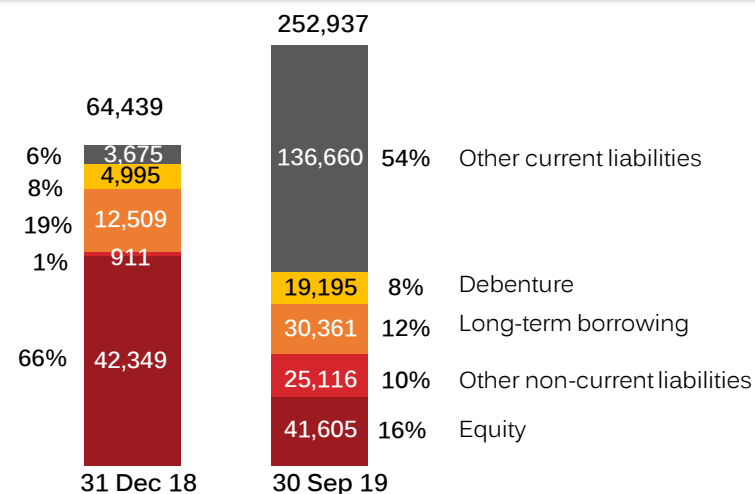
▲ 293%

Total assets increased mainly from:

- **Other non-current assets** increased by Baht 84,436 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 73,618 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 3,504 million in which GLOW IPP financial lease and receivable, and the recording the fair value of financial lease from the acquisition of GLOW.

## Total Liabilities & Shareholders Equity

(THB Million, %)



### Liabilities

▲ 857%

Total liabilities increased mainly from:

- **Current liabilities** increased mainly from an increase in short-term loan from financial institution for the acquisition of GLOW.
- **Other non-current liabilities** increased 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 from GLOW's long-term borrowing and debenture.

### Equity

▼ 36%

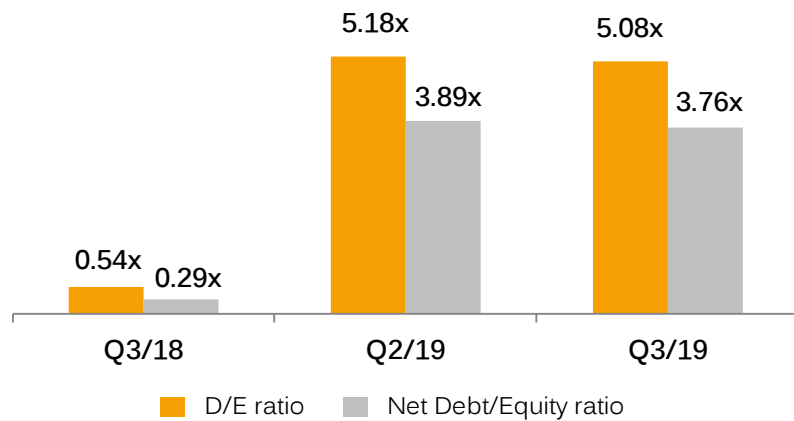
Total Equity decreased mainly from:

- The change in non-controlling interest and the difference from the change of investment proportion in subsidiaries resulted from the tender offer for acquisition of GLOW.
- The increase in retained earnings during the period.

# Key Financial Ratio

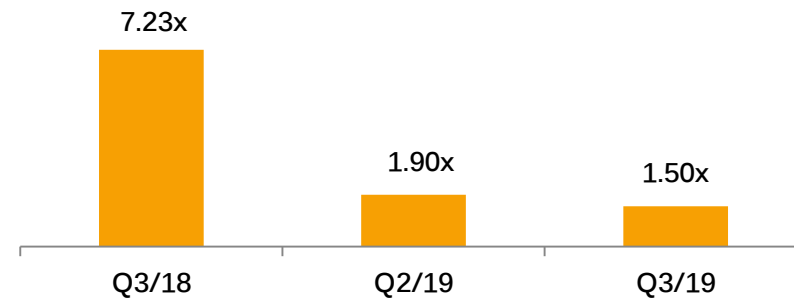
Total D/E and Net Debt/ Equity ratio

(Times)



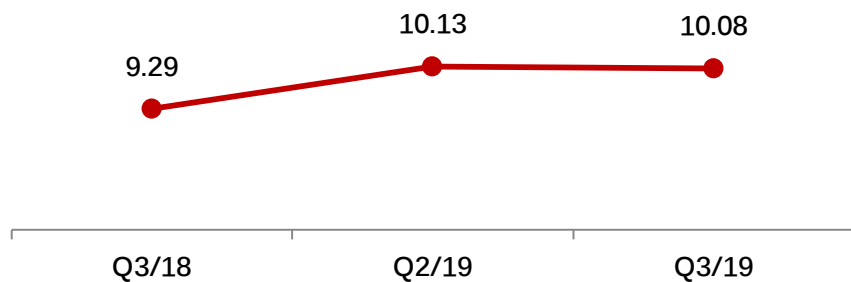
Interest Coverage Ratio

(Times)



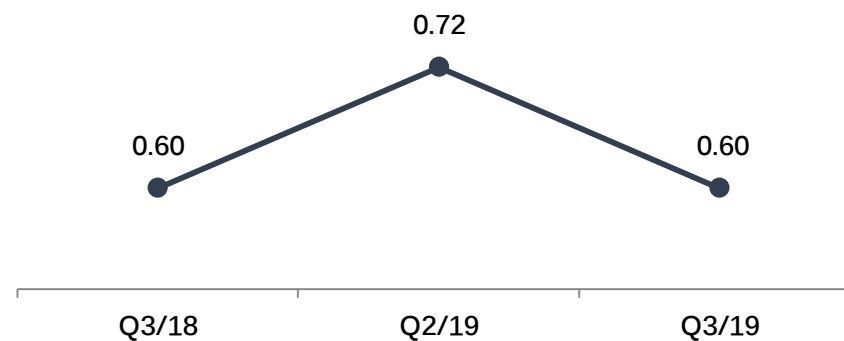
ROE

(%)



Earning per share (EPS)

(THB/share)



# THANK YOU

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# Well-versed Board of Directors

*Our directors have mix of skills and experiences to deliver meaningful growth at GPSC*



**Pailin Chuchottaworn**

- Independent Director/ Chairman of the Board, GPSC
- Former Deputy Minister of Transport
- Former President and CEO of PTT Public Company Limited
- Former Learned Commissioner, The Securities and Exchange Commission
- Former Director, Power of innovation and power of learning
- Former Director, Bangkok Bank Public Company Limited



**Kurujit Nakornthap**

- Independent Director / Chairman of the Nomination and Remuneration Committee/ Chairman of the Corporate Governance Committee, GPSC
- Independent Director, Padaeng Industry Public Company Limited
- Former Permanent Secretary, Ministry of Energy
- Former Director and Chairman of the Board, Electricity Generating Authority of Thailand



**Payungsak Chartsutipol**

- Independent Director / Chairman of the Audit Committee and the Risk Management Committee, GPSC
- Former Chairman of the Corporate Governance Committee, GPSC
- Former Chairman, Board of Executive Directors, Krungthai Bank Public Company Limited
- Former Chairman, Federation of Thai Industries



**Maj.Gen. Chaowalek Chayansupap**

- Independent Director / Member of Audit Committee/ Member of the Nomination and Remuneration Committee, GPSC
- Former Member of the Corporate Governance Committee, GPSC
- Former Army Expertise, Royal Thai Army
- Former Deputy Infantry Center Commandant, Royal Thai Army



**Nicha Hiranburana Thuvatham**

- Independent Director / Member of the Corporate Governance Committee, GPSC
- Deputy Secretary-General to the Prime Minister for Administrative Affairs, Office of the Prime Minister
- Deputy Director, Prime Minister Delivery Unit



**Boonchai Chunhawiksit**

- Director, GPSC
- Senior Executive Vice President, Upstream Petrochemical Business PTT Global Chemical Public Company Limited



# Well-versed Board of Directors (Cont'd)

*Our directors have mix of skills and experiences to deliver meaningful growth at GPSC*



**Wittawat Svasti-Xuto**

- Director / Member of the Nomination and Remuneration Committee/ Member of the Risk Management Committee, GPSC
- Chief Technology and Engineering Officer, PTT Public Company Limited
- Director, PTT Global Chemical Public Company Limited
- Former Senior Executive Vice President, Innovation and Digital, PTT Public Company Limited



**Wuttikorn Stithit**

- Director, GPSC
- Senior Executive Vice President, Gas Business Unit, PTT Public Company Limited
- Former Executive Vice President, Natural Gas Distribution, PTT Public Company Limited
- Former Vice President, Natural Gas Wholesales Marketing, PTT Public Company Limited



**Wirat Uanarumit**

- Director / Member of the Risk Management Committee, GPSC
- Chief Executive Officer and President, Thai Oil Public Company Limited
- Former Chief Operating Officer, Upstream Petroleum and Gas Business Group, PTT Public Company Limited
- Former Chief Financial Officer, PTT Public Company Limited



**Kongkrapan Intarajang**

- Director, GPSC
- Chief Executive Officer, PTT Global Chemical Public Company Limited



**Peangpanor Boonklum**

- Director / Member of the Corporate Governance Committee, GPSC
- Senior Executive Vice President / Group General Counsel, Office of General Counsel, PTT Public Company Limited



**Bandhit Thamprajamchit**

- Independent Director / Member of the Corporate Governance Committee
- Former Executive Vice President-Manufacturing Thai Oil Public Company Limited



**Chawalit Tippawanich**

- Director / Secretary to the Board / Member of the Risk Management Committee / President and Chief Executive Officer, GPSC
- Senior Executive Vice President, PTT Public Company Limited

# Highly Experienced Management Team

## Proven Track Record and Expertise in Thai Energy and utilities Industry



**Smornchai  
Khoonrak**

**EVP**  
Operations

35 years in PTT Group  
Energy & utilities industry  
both onshore and offshore  
operation



**Rosaya  
Teinwan**

**EVP**  
Business Development and  
Corporate Strategy

28 years in PTT Group  
Energy & Utilities industry



**Chawalit  
Tippawanich**  
**President  
& CEO**

14 years in PTT Group  
16 years in Energy &  
utilities industry



**Sirimet  
Leepagorn**

**EVP**  
Asset Management

30 years in PTT Group  
Energy & Utilities industry



**Wanida  
Boonpiraks**

**EVP**  
Corporate Finance  
and Accounting

29 years in PTT Group  
Energy & utilities industry

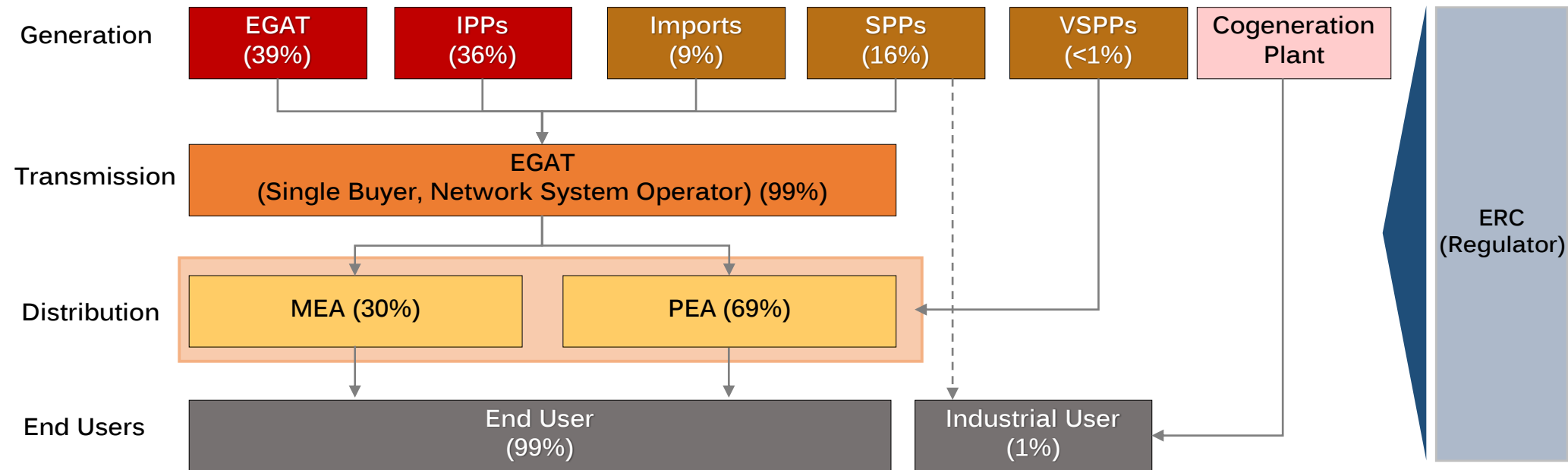


- Several senior executives have long experience working within the PTT Group and have expertise in power generating business
- Rotation policy of key staff within the PTT Group helps foster closer linkage with key shareholders in the company
- Succession planning encourage talented employees and to ensure continuity of strategies
- PTT Group regular meetings drive synergies between the key subsidiaries of the Group

# 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

Peak demand 34,317 GW in 2018



## 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:

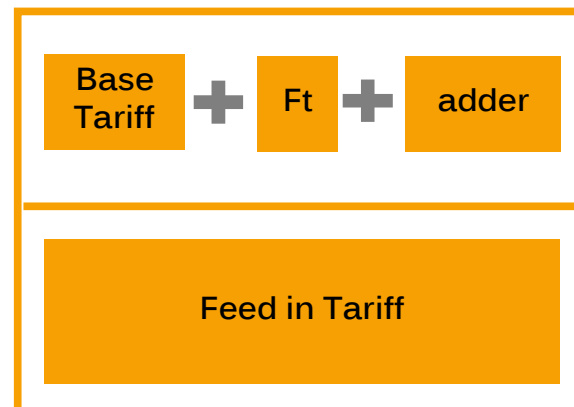
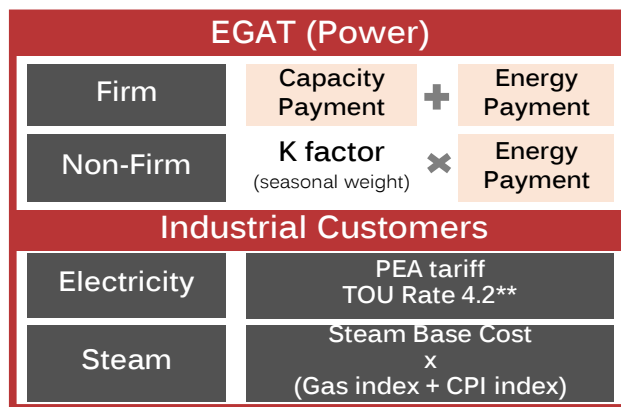
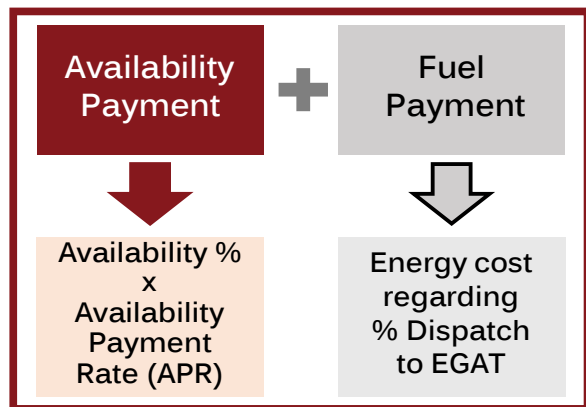
EGAT:

- Firm: Contract term > 5 years; CP + EP (+ FS)\*\*
  - Non-Firm: Contract term ≤ 5 Years; Only EP<sub>NF</sub>
- 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



\* Under various type of contracts.

\*\* Fuel Saving (FS)

\*\*\* Reference rate with conditions;

<https://www.pea.co.th/Documents/Rate2015.pdf>



# Summary of PDP 2018

## Thailand Power Statistic

as of September 2018

(Unit: MW)

54,617



Power capacity

34,317



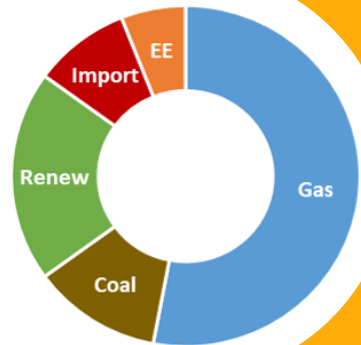
Peak demand

### Implication

- Consideration on new demand and reserve capacity by regions will create opportunities for new round IPP bidding. Western region should be the first lot within 2019.
- This PDP revision is possible to adjust due to new AEDP&EEDP, study on smart grid study, energy storage, SPP power pool, private PPA are not finished, therefore the next revision will be launched recent year.



ELECTRIC PLUS



### Demand

- System demand is not changed significantly.
- National demand (System demand plus Captive demand (IPS)) will be considered in PDP instead of only System demand as earlier.
- Supply will be considered by Regions.

### Fuel mix

- Natural gas returns to be a major roles but Coal is limited.
- Renewable portion is increased especially in Private Solar however, most of all will be moved to mid-end PDP's period.
- Import power is not changed significantly.

### Reserve Margin

- Change concept to determine safety margin of power supply, from Dependable capacity to Reliable capacity.
- Criteria of Reliable capacity shall be always higher than System demand



# Comparison of Power Generation by Source of Fuel

(Unit: %)

Source of Fuel	PDP 2015 (in 2036)	New PDP 2018 (in 2037)
Natural Gas	37	53
Coal / Lignite	23	12
Hydro Power	15	9
Renewable	20	20
Nuclear	5	-
Others	0.1	0.06
Energy efficiency	-	6

Source: Ministry of Energy

# 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
<b>IN OPERATION</b>									
<b>IPP</b>									
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
<b>Total IPP</b>		<b>4,910</b>	<b>2,439</b>	<b>2,439</b>	<b>-</b>	<b>80</b>			
<b>SPP</b>									
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

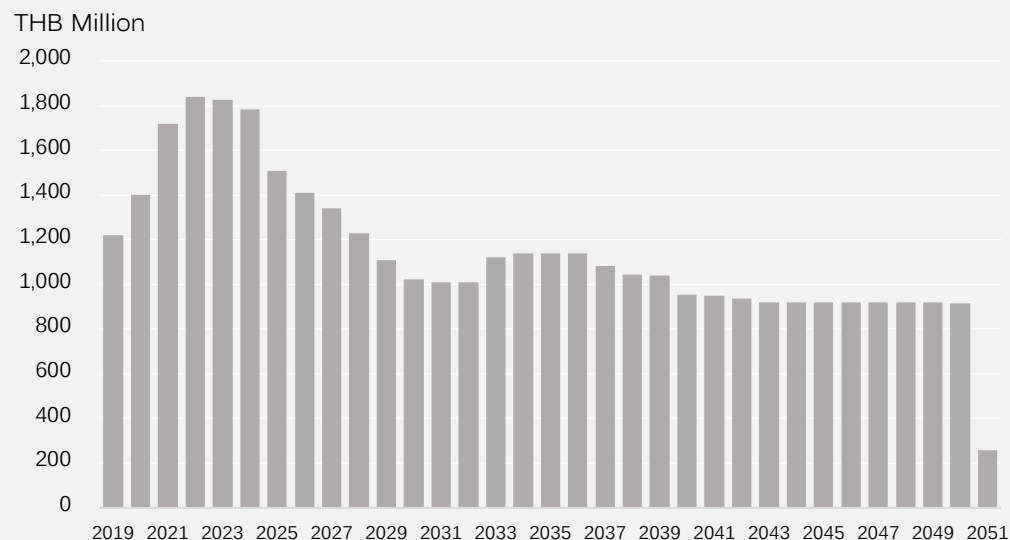
Name	Type	Total capacity (MW)	Equity Power capacity (MW)	Equity Operating Power capacity (MW)	Steam (T/H)	Industrial water (Cu.m/H)	Direct shareholding (%)	COD	Tenor
<b>IN OPERATION</b>									
NNEG	SPP	125	38	38	9	-	GPSC (30%)	2016	25/2041
NNEG Expansion	SPP	60	18	-	3	-	GPSC (30%)	2020	25/2041
Rayong Expansion (CUP-3)	SPP	15	15	15	-	-	GPSC (100%)	2019	n/a
Rayong Expansion (CUP-4)	SPP	45	45	45	70	-	GPSC (100%)	2019	-
<b>Total SPP</b>		<b>2,614</b>	<b>2,192</b>	<b>2,174</b>	<b>2,701</b>	<b>7,292</b>			
<b>VSPP and others</b>									
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
Solar Project	VSPP	39.5	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
<b>Total VSPP and others</b>		<b>237</b>	<b>145</b>	<b>135</b>	<b>-</b>	<b>-</b>			
<b>ERU</b>									
ERU	Cogen	250	250	-	175	-	GPSC (100%)	2023	25/2048
<b>Total ERU</b>		<b>250</b>	<b>250</b>	<b>-</b>	<b>175</b>	<b>-</b>			
<b>Total capacity</b>		<b>8,011</b>	<b>5,026</b>	<b>4,748</b>	<b>2,876</b>	<b>7,372</b>			

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

# 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)
<b>Net Assets of GLOW at 14 March 2019</b>	<b>51,409</b>	<b>89,003</b>	<b>37,594</b> (USD 1,219 mm)
Non-Controlling interests at 30.89%		(32,092)	
<b>Total Net Asset obtained GLOW at 69.11%</b>		<b>56,911</b> (USD 1,845 mm)	
<b>Goodwill</b>		<b>36,090</b> (USD 1,170 mm)	
<b>Proportion of acquisition cost 69.11%</b>		<b>93,001</b> (USD 3,015 mm)	

**Amortization of Fair Value Measured from Net Assets acquired from GLOW during 2019 - 2051**  
(Computed based on 100% of GLOW shares)



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.

Note: Use FX = 30.846 THB/USD ; the w.a. selling rate announced by the BOT on 15 Aug 2019

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