



The power and smart energy flagship of **PTT Group** 



The Global Leading Innovative and Sustainable Power Company

#### **ASPIRATION**



To be top 3 power company in Southeast Asia with more than half of MW from Green **Portfolio** 

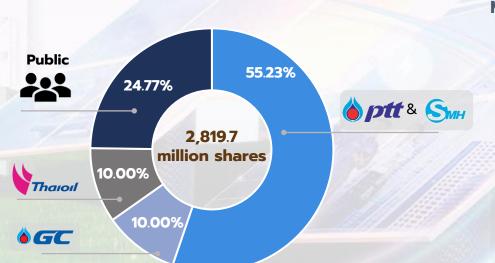
### GPSC's SHAREHOLDING **STRUCTURE**

#### **COMPANY INFORMATION** (as of 20 Nov 2023)

**Business Type** | Energy & Utilities listed on SET

Paid-up Capital | THB 28,197 million

Market Cap. | THB 133,232 million (3<sup>rd</sup> in power sector)



#### **CREDIT RATINGS**

AA+

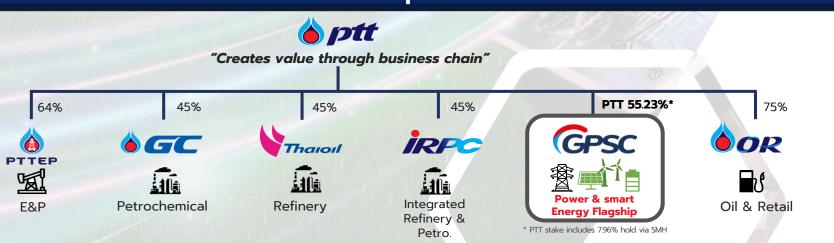


A+(tha) BBB-



Member of Dow Jones Sustainability Indices Powered by the S&P Global CSA

### **PTT Group's Business**



# Agenda

- 1 Q3/23 Key Highlight
- 2 Business Progress
- Financial Performance



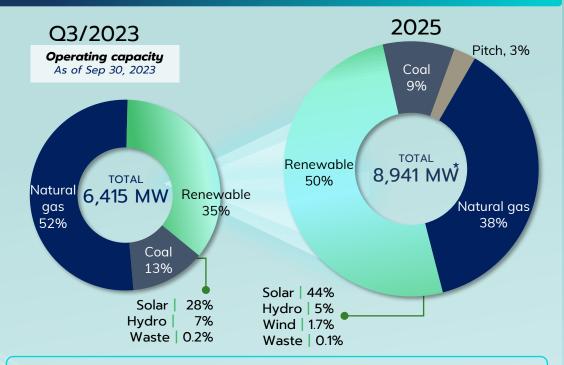
# Q3/23 Key Highlights





#### Achieving the 2030 RE target, exceeding RE MW >50% of portfolio by 2025

### **Total Committed Equity Capacity**; As of Nov 8, 2023



#### **Products/ Services**

#### **Electricity 8,941 MW**

- Conventional 4,431 MW
- Renewable Energy 4,510 MW

Steam 2,858 T/H

Industrial Water 7,026 Cu.m./H Chilled Water 15,400 RT

**ESS battery 64 MWh** 





GPSC DECLARES THE SUCCESSFUL INVESTMENT IN

GREEN PORTFOLIO GRABBING THE 1.4 GW SOLAR FARM PROJECT.

#### What's going on in the Ft in 2024?



## How to cope with uncertainty?

In 2023, the Ft has declined after peaking in early 2023.

>> To offer more stabilized margin and pricing to industrial customers enabling a resilient approach for long-term win-win solution.

"Gas link formula is introduced."

#### Note:

<sup>\*</sup> Total equity capacity includes Solar Power Platform (Avaada) 2,885 MW and Offshore wind farm (CFXD) 149 MW.

## Q3/23 Key Highlights I Financial Performance



Strengthening Financial Performance via Operational Excellence, Cost Management and Data-Driven Decision Making

### More operational efficiency with OEMS

- Performance improvement with best practice & Benchmarking
- Enable Digitalization via
   Control Command Center (CCC)
   Data-driven decision making for
   O&M and plant management
- Embedding synergy into BAU: Higher outcome: **THB 1,808 MM in 9M23** vs THB 1,592 MM in 9M22.



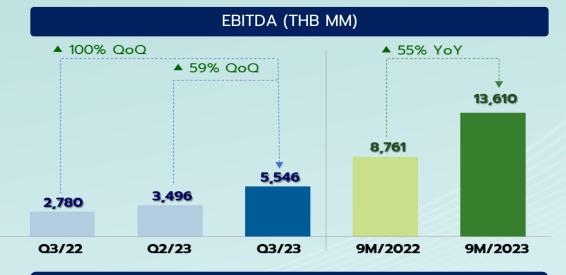




### More stringent cost control

Increased OPEX savings: THB 914 MM in 9M23 from the Annual Plan.

### Outstanding net profit growth (+441% YoY, +479% QoQ)





# Agenda

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- **2** Business Progress
- Financial Performance



# S1 & EXPAND THE CORE

**Operational** Excellence

Customer-centric utility

**Expansion** into adjacencies



PLANT EFFICIENCY
UPLIFT



**ENERGY CONSERVATION** 

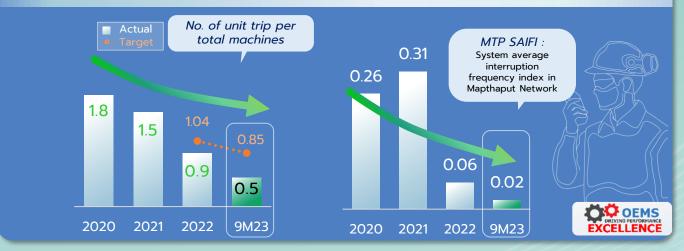


**SYNERGY PROJECTS** 

# **Q3/23 Business Progress**



- ✓ Strong Operational Availability & Reliability of SPP
- Number of unit trip & SAIFI have historically improved, being a reliable electricity source to connected loads



#### **GPSC CO2 Emission Reduction Plan**

- >> Achieving better-than-target GHG Emission 2023
- >> 59 on-going CO2e Reduction Initiatives

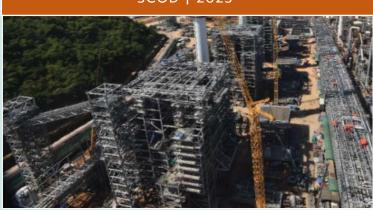


# **Business Progress** S1: Updates of Projects



#### Energy Recovery Unit (ERU)

### SCOD | 20251





Electricity (MW)	25	5 <b>C</b>
Steam		

(ton/hr.)

Overall, the project has reached 92.08% in detail;



Installation of the steel structure and equipment for the Circulating Fluidized Bed Boiler, Electrostatic Precipitator, SNOX, and Wet Sulfuric Acid Condenser of the three sets of boiler.

Installment of the Pitch Solidification structure, Acid Concentration.

The proceeding install equipment, Electrical cables and test equipment In the Substation 119 power station building.

Note: The ERU project has been affected by the COVID-19 pandemic and is expected to start commercial operation in 2025.



#### SCOD | Q2/2024

Unit1: Mar 2024 / Unit2: Apr 2024



Projects	Electricity Capacity (MW)	Steam Production Capacity (t/h)	Contracted PPA with EGAT (MW)
Glow SPP2	98	230	60 (2 PPAs x 30 MW)



The construction has reached 80.90%: the project is in the progress of installation of electrical equipment, machinery equipment, pipe structures and systems, boilers, gas turbines, electric generators and start testing the electrical system.

**GPSC** 

**Thailand** 

Target: Enhance Green portfolio with more than half of portfolio by 2030



### More focusing on platform growth



Establish

local base



Build and

maintain local

relationships





Separate Build on organization ground capabilities structure







#### Solar power scale-up

- Become a developer and operator of solar IPP assets in Thailand and target Markets
- · GPSC joins with AEPL to explore the potential of energy market in India



#### Wind power scale-up

 Achieve scale by becoming developer and operator of wind assets in target markets

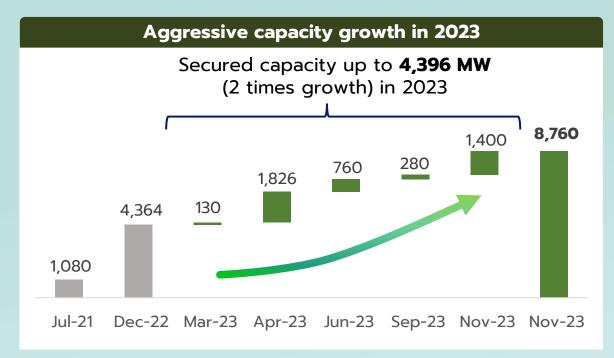


#### **ESS-RE** hybrid power entry

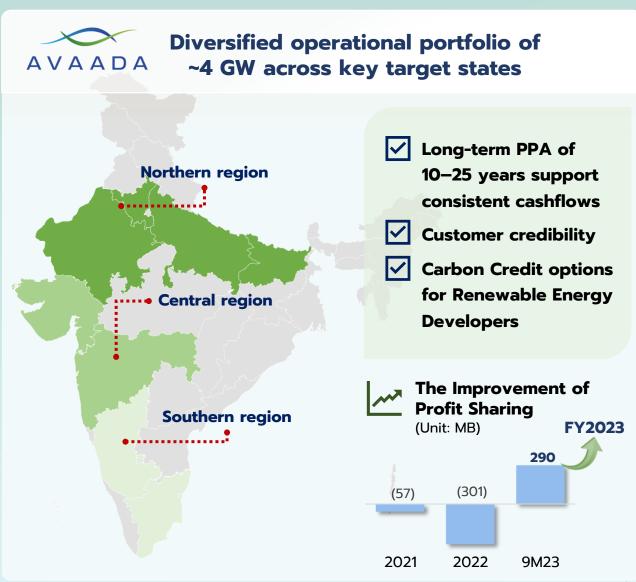
Become a developer and operator of RE hybrid plants to increase power system efficiency and ensure a greater balance in energy supply



Solar power scale-up: explore the potential of energy market in India



- ☐ AEPL won the 1.4 GW bid in November 2023 with strong competitiveness; it won **one of three of the total bids**.
- ☐ The Indian government's policy goal is to increase renewable capacity to 500 GW by 2030 and support rapid capacity expansion.





Solar power scale-up: Explore the potential of energy market in India



### **India Power Outlook 2024**

Ambitious Renewable-Energy Targets with Long-term PPA Secures Cashflows

The government plans to auction 50 gigawatts (GW) of renewable energy capacity annually, with at least 10GW coming from wind energy, during FY24-FY28.

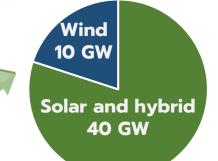


India's power demand was expected to increase by about 7.0% in the financial year ending March 2024, driven by robust industrial activity.

### >> Improved Receivables to Continue

Regular payments under the central government's late payment surcharge (LPS) rules

**MNRE Bidding 2024F** 





Wind power scale-up: Achieve wind assets in target markets



#### **CFXD: Offshore wind in Taiwan**



#### Construction progress





CI II and CI III Hold 75% of shares

**GRSC TW Holds** 25% of shares

**Contracted Capacity 595 MW** 

#### **Project updates:**

- ➤ The first power started in November 2022.
- ➤ Foundation installation completed 100%
- ➤ The project currently constructs the foundation and the laying of electrical wires for connections.
- > Wind Turbine Generator (WTG) installed more than 50%





New Clean Energy Bidding 2022-2030								
RE Bidding	PDP2018 Rev.1	PDP2018 Rev.1 (add)						
Solar farm	2,368	2,632						
Solar plus BESS	1,000	-						
Wind	1,500	1,000						
Biogas	335	6.5						
Industrial waste	100	30						
Total	5,303	3,668.5						



### Criteria for new auction with capacity 3.66 GW

- ☐ The project will be considered criteria by the previous auction
- ☐ The official bidding was expected to announced in Q1-Q2/2024

# **Business Progress** S3: S-Curve & Batteries



#### **Explore Opportunities In Battery Recycling**









Collaboration to seek and capture opportunities for establishina a recycling battery factory in Thailand

- **TES** is a company established in Thailand with a focus on business in ASEAN. It is a company under the TES amm Group. which is the global leading e-waste recycling business.
- **MOU with TES** to pursue opportunities for the development of technology and explore the possibilities of establishing a recycling battery factory in Thailand.
  - ☐ The potential collaboration for a full chain battery recycling business in Thailand
  - ☐ Exploring the possibility of integrating recycling technologies for the benefit of clean energy-related sectors.



#### Module and pack assembly plant business





Capacity: Module and pack assembly

- 1st Phase 1 GWh
- Available land for potential expansion to cell plant or new pack line



Focusing on serving battery for commercial EV, ESS etc. SOP in Q4/2023

#### **Next-Gen EV Battery Manufacturing**



#### AXXIVA

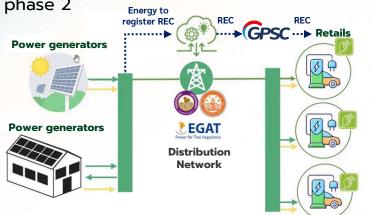
- The main construction is completed, and the facility installation is ongoing
- 1 GWh battery manufacturing plant for EV is expected to SOP in Q2/2024

# **Business Progress** S4: Shift to Customer – Centric Solution





- > To study and develop green energy trading platform and renewable energy certificate: REC
- > To study the business model of electricity trading for third party access (TPA) by connecting to the TPA electricity grid system under the new PPA
  - The qualified participant list will be announced by December 29, 2023.



#### **Smart utility system into the Smart Park Industrial Estate**

#### 6 modules for SMART Facilities





**Smart Data and** Communication









- The collaborative with **IEAT and partners**
- GPSC stands ready to craft forward-thinking solutions by harnessing technology and an efficient digital operating system to create modern network services.



# Agenda

- 1 Q3/23 Key Highlight
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### Q3/23 Financial Performance



### **Key Highlight**

- ✓ Strong operational availability and reliability of Cogen Business
- ✓ Lower gas and coal cost to improve SPP margin
- √ Higher IU demand QoQ

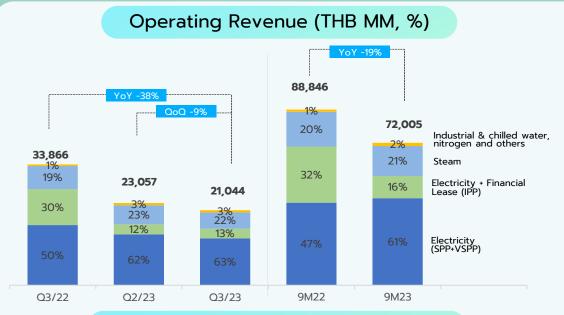
Q3/23	vs Q2/23	vs Q3/22
IU Power	+3%	(0.2%)
IU Steam	+3%	(8%)

✓ Dividend Income from RPCL THB +105 MM



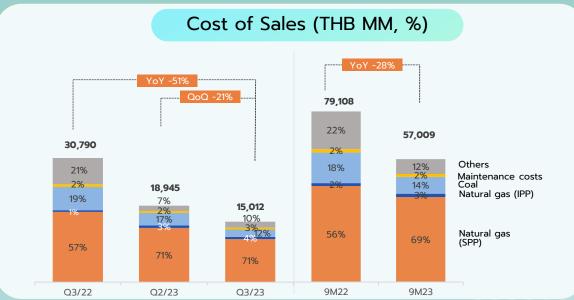
## Q3/23 Financial Performance I Comparison









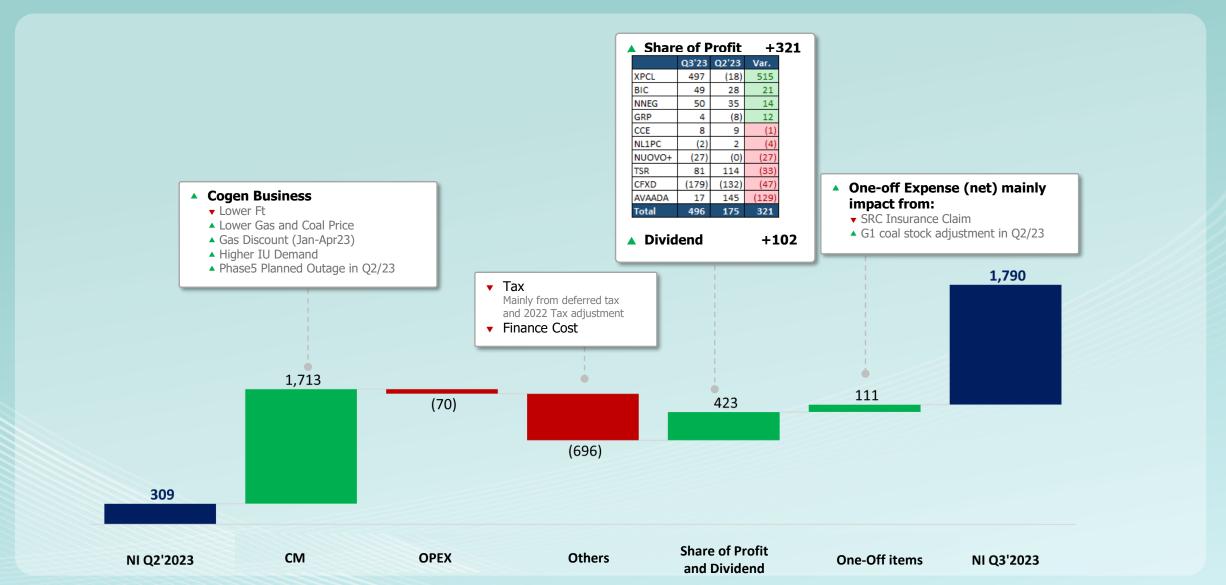


**Margin** in selling electricity to industrial customers **is significantly higher** (+YoY and +QoQ)

# Q3/23 Financial Performance I NI Comparison (QoQ)



Q3/23 NI = 1,790 MTHB : +1,481 MTHB (+479%) QoQ



### Q3/23 Financial Performance | Operating Results

Q3/22

Q2/23

Q3/23

Q3/22

Q2/23

Q3/23





# **Q&A SESSION**

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Appendix

# **Key Macro Factors**



### Electricity Sales volume (GWh)



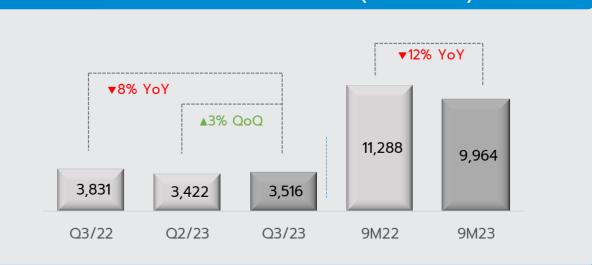


Q3/23	YoY	QoQ
Total	-31%	+5%
VSPP & Others	+89%	+32%
SPP	+1%	+6%
IPP	-88%	-5%
9M23	YoY	
Total	-28%	
VSPP & Others	+60%	
SPP	+0.8%	
IPP	-77%	

### IU Electricity Sales volume (GWh)

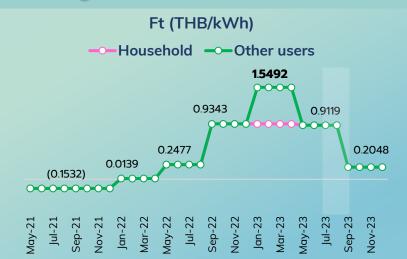


### IU Steam Sales volume ('000 tons)



As of SeP 30, 2023

# **Key Macro Factors**



#### IPP's Availability (%)

Availability Rate (%)	Q3/22	O2/23	Q3/23	Chang	ge +/(-)
(10)				YoY	QoQ
Sriracha	45%	100%	100%	55%	0%
GIPP	96%	97%	99%	3%	2%
GHECO-One	78%	100%	100%	22%	0%

#### End-month FX (THB/USD)

Q3/	/22	Q2/	23	Q3/	′23
Jul 22	36.82	Apr 23	34.14	Jul 23	34.25
Aug 22	36.50	May 23	34.73	Aug 23	34.96
Sep 22	37.92	Jun 23	35.59	Sep 23	36.56
Avg.	37.08		34.82		35.25



# Q3/2023 Operating Results

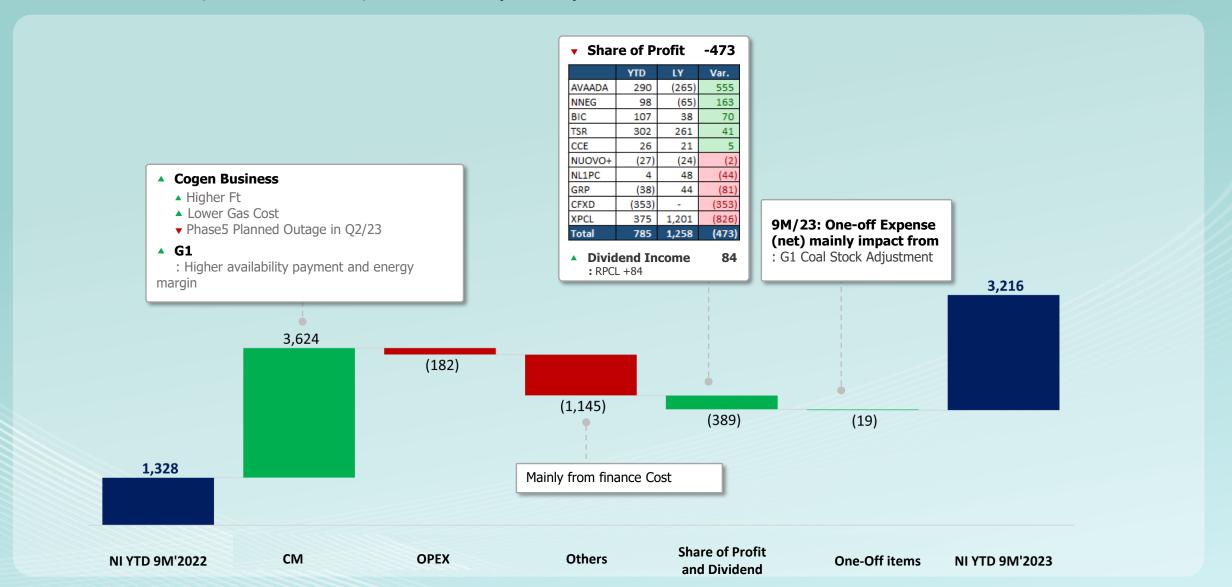


Overall operating results of the Company and its subsidiaries	Q3/22	Q2/23	Q3/23	change	+/(-)	9M/22	9M/23	change +/(-)
(unit: THB MM)	(Revised)	Q2/25	Q3/23	YoY	QoQ	(Revised)	31417 23	YoY
Operating revenue	33,866	23,056	21,044	(38%)	(9%)	88,846	72,005	(19%)
Cost of sales (excluding depreciation and amortization)	(30,790)	(18,945)	(15,012)	(51%)	(21%)	(79,108)	(57,009)	(28%)
Gross profit	3,076	4,111	6,033	96%	47%	9,738	14,998	54%
Selling and administrative expenses	(401)	(596)	(504)	26%	(15%)	(1,228)	(1,469)	20%
Other operating income	105	(19)	18	(83%)	(195%)	250	83	(67%)
EBITDA	2,780	3,496	5,546	100%	59%	8,761	13,610	55%
Depreciation and amortization	(2,281)	(2,357)	(2,387)	5%	1%	(6,800)	(6,950)	2%
EBIT	499	1,139	3,160	533%	177%	1,961	6,661	240%
Finance costs	(1,068)	(1,342)	(1,359)	27%	1%	(3,090)	(3,943)	28%
Other non-operating income and expenses	109	277	140	29%	(49%)	1,518	444	(71%)
Dividend received and shares of profit of associates and joint ventures	764	178	601	(21%)	238%	1,372	982	(28%)
Income tax expenses	158	233	(500)	(416%)	(315%)	138	(372)	(369%)
Profit before FX and extraordinary items	462	<b>484</b>	2,041	342%	322%	1,899	3,770	99%
Net foreign exchange gain (loss)	(61)	33	66	208%	(100%)	(313)	172	(155%)
Net profit	401	517	2,107	426%	308%	1,586	3,942	149%
Non-controlling interests	(70)	(207)	(318)	356%	54%	(258)	(726)	182%
Net profit for the Company	331	309	1,790	441%	479%	1,328	3,217	142%
Adjusted Net Income	784	670	2,243	186%	235%	2,758	4,484	63%
Gross profit margin (%)	9%	18%	29%	20%	11%	11%	21%	10%
Net profit margin (%)	1%	2%	9%	8%	8%	1%	4%	3%
Adjusted Net Income margin (%)	2%	3%	11%	9%	8%	3%	6%	3%

# 9M23 Financial Performance I NI Comparison (YTD)



9M/2023 NI = 3,216 MTHB : +1,888 MTHB (+142%) YTD



# **GPSC** | Power Plant Portfolio (1/2)



Name	Туре	Shareholding (%)	Total capacity (MW)	Equity Power capacity (MW)	Equity Operating Power capacity (MW)	Steam (T/H)	Industrial water (Cu.m/H)	COD	Tenor
IPP									
Sriracha	IPP	GPSC (100%)	700	700	700	-	80	2000	25
Glow IPP	IPP	GLOW (95%)	713	677	677	-	-	2003	25
Huay Ho	IPP	GLOW (67%)	152	102	102	-	-	1999	30
GHECO-One	IPP	GLOW (65%)	660	429	429	-	-	2012	25
XPCL	IPP	GPSC (25%)	1,285	321	321	-	-	2019	29
RPCL	IPP	GPSC (15%)	1,400	210	210	-	-	2008	25
Total IPP			4,910	2,439	2,439	-	80		
SPP									
CUP-1	SPP	GPSC (100%)	226	226	226	890	720	2006	10-15
CUP-2	SPP	GPSC (100%)	113	113	113	170	510	2008	15
CUP-3	SPP	GPSC (100%)	-	-	-	280	770	2009	15
Rayong Expansion (CUP-3)	SPP	GPSC (100%)	15	15	15	-	-	2019	n/a
CUP-4	SPP	GPSC (100%)	49	49	49	140	-	2019	Long-term
Glow Energy Phase 1	SPP	GLOW (100%)	-	-	-	-	1,240	1994	-
Glow Energy Phase 2 (SPP replacement)	SPP	GLOW (100%)	200	200	200	460	934	2022-23	25
Glow Energy Phase 4	SPP	GLOW (100%)	77	77	77	137	2,050	2005	25
Glow Energy Phase 5	SPP	GLOW (100%)	328	328	328	160	-	2011	10-20
Glow SPP 2	SPP	GLOW (100%)	213	213	213	190	-	1999	25
Glow SPP 3	SPP	GLOW (100%)	300	300	300	-	150	1999	25
Glow SPP 11 Phase 1	SPP	GLOW (100%)	120	120	120	-	360	2000	25
Glow SPP 11 Phase 3	SPP	GLOW (100%)	42	42	42	-	-	2006	10-20
Glow SPP 11 Phase 2	SPP	GLOW (100%)	110	110	110	-	212	2012	25
Glow Energy CFB 3	SPP	GLOW (100%)	85	85	85	79	-	2010	10-20
IRPC-CP Phase 1	SPP	GPSC (51%)	45	23	23	86.7	-	2015	25-27
IRPC-CP Phase 2	SPP	GPSC (51%)	195	99.4	99.4	66.3	-	2017	25
IRPC-CP Phase 3	SPP	GPSC (51%)	70	35.7	-	-	-	2024	-
NNEG	SPP	GPSC (30%)	125	38	38	9	-	2016	25
NNEG Expansion	SPP	GPSC (30%)	60	18	18	3	-	2020	21
NNEG Expansion 2	SPP	GPSC (30%)	30	9	-	1.59	-	2024	-
BIC-1	SPP	GPSC (25%)	117	29.25	29.25	5	-	2013	25
BIC-2	SPP	GPSC (25%)	117	29.25	29.25	5	-	2017	25
Total SPP			2,637	2,160	2,115	2,683	6,946		

# GPSC | Power Plant Portfolio (2/2)

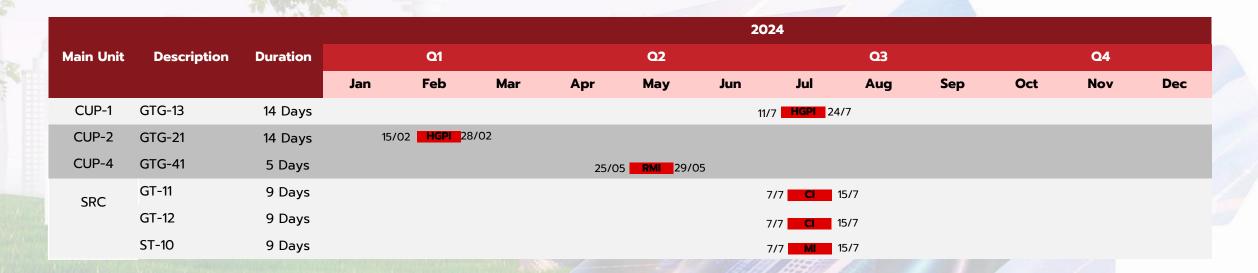


	3000								
Name	Туре	Shareholding (%)	Total capacity (MW)	Equity Power capacity (MW)	Equity Operating Power capacity (MW)	Steam (T/H)	Industrial water (Cu.m/H)	COD	Tenor (year)
VSPP and others									
Rayong Waste to Energy (WTE)	VSPP	GPSC (100%)	9.8	9.8	9.8	-	-	2021	18
CHPP	VSPP	GPSC (100%)	5	5	5	-	-	2008	30
CHPP (Solar)	VSPP	GPSC (100%)	5	5	5	-	-	2016	25
GRP (NPS, WXA, PPS)	VSPP	GPSC (50%)	39.5	19.75	19.75	-	-	2014-15	25
GRP1 (Sheng Yang)	Solar	GPSC (45%)	55.8	25.11	25.11	-	-	2016-21	20
AEPL (Solar Power Platform)	Solar	GPSC (43%)	8,760	3,761	1,713	-	-	2018-25	10-25
TSR (SSE1)	VSPP	GPSC (40%)	80	32	32	-	-	2013	25
NL1PC	Hydro	GPSC (40%)	65	26	26	-	-	2019	24
Chonburi Clean Energy (CCE)	VSPP	GLOW (33%)	8.6	2.87	2.87	-	-	2019	20
CFXD (Offshore wind farm)	Wind	GPSC (25%)	595	149	-	-	-	2022-24	20
Helios 3 – 4	Solar	GPSC (50%)	16	8	-	-	-	2030	25
Private PPA	Solar	GPSC Gr. (100%)	49.31	49.31	22.18	-	-	2012-24	Long-term
Total VSPP and others			9,689	4,092	1,861	-	-		
ERU									
ERU (Under construction)	Petroleum Pitch	GPSC (100%)	250	250	-	175	-	2025	25
	Total ERU		250	250	-	175	-		
Total capacity			17,486	8,941	6,415	2,858	7,026		

Note: - Total committed equity capacity as of November 8, 2023.
- Equity capacity includes 100% stake in GLOW, CFXD, Private PPA and ERU

# 2024 Maintenance Schedule | Sriracha and Rayong Plants





# 2024 Maintenance Schedule | GLOW's Main Units





# 2024 Maintenance Schedule | IRPC-CP



		Maria Contraction												
								202	24					
Main Unit	Description	Duration		Q1			Q2			Q3			<b>Q</b> 4	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Block 1														
CTG 21	С	27 days						27						
HRSG 21	С	27 days						27						
CTG 22	С	27 days						27						
HRSG 22	С	27 days						27						
STG 23	Major	27 days						27						
Block 2														
CTG 31	С	27 days							11	16				
HRSG 31	С	27 days							11	16				
CTG 32	В	22 days							11	11				
HRSG 32	В	22 days							11	11				
STG 33	Major	22 days							11	11				
Aux. Boiler														

#### Notes:

- Major: Major Inspection, B: Inspection Level B, C: Inspection Level C
- · The duration of maintenance above does not include inspection by law.

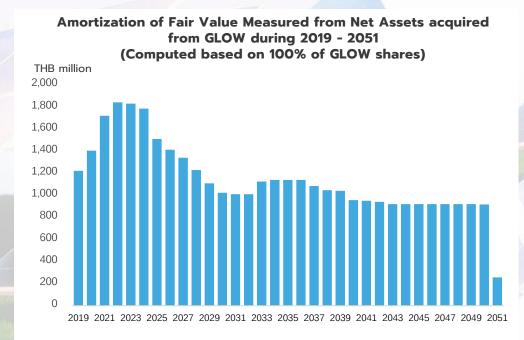
# Fair Value Measurement | Net Assets from Acquisition of Glow



unit: THB million

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Items	Book Value of GLOW	Fair Value of GLOW	Differential Value
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	

Energy s



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 follows:

- 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.



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