

SET Digital Roadshow

Q1/2021

June 10, 2021

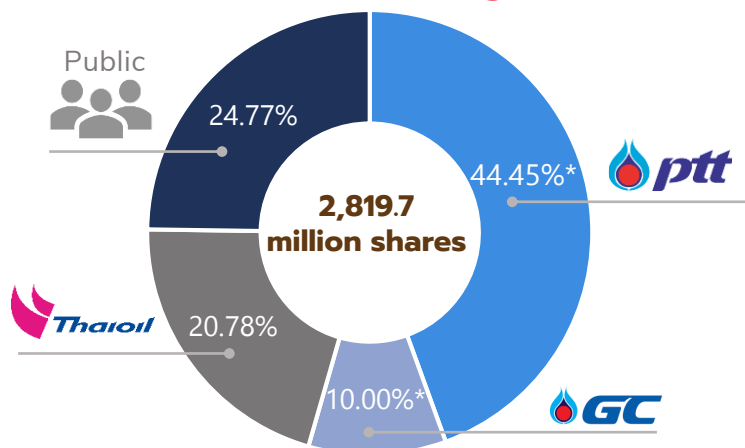




The power flagship of PTT Group

*"GPSC, The global leading innovative and sustainable power company, the core business is to **generate and supply electricity and utilities** to customers and also **developing new S-Curve business** to create value to stakeholders."*

GPSC's shareholding structure



* PTT stake includes 1.91% hold via SMH, a wholly-owned indirect subsidiary of PTT. The transaction was completed on June 8, 2021.

COMPANY INFORMATION (as of June 8, 2021)

Business Type | Energy & Utilities listed on SET

Paid-up Capital | THB 28,197 million

Market Cap. | THB 210,070 million

CREDIT RATINGS

BBB-

S&P Global

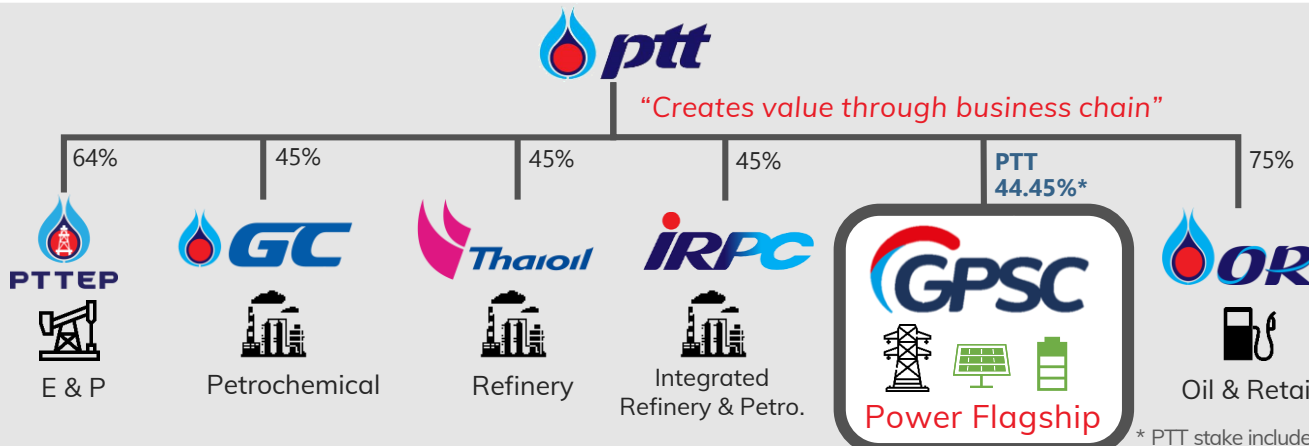
AA-

TRIS
RATING
A Strategic Partner of THAIPOWER

A+(tha)

FitchRatings

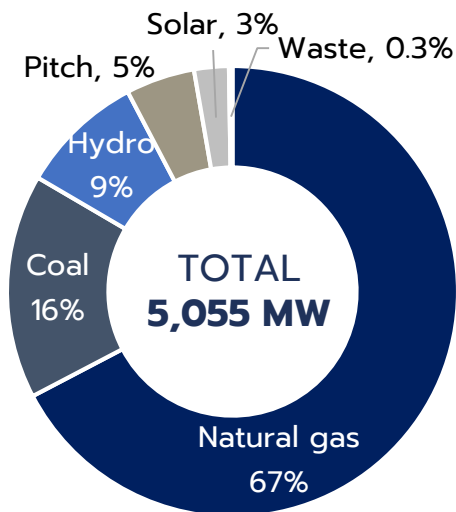
PTT Group's Business



* PTT stake includes 1.91% hold via SMH

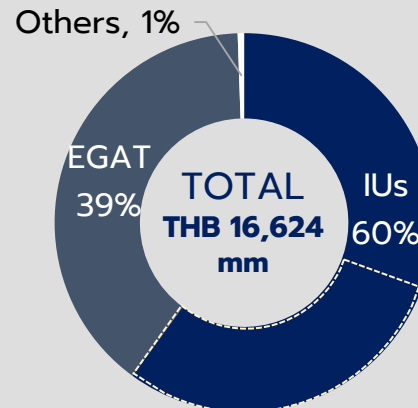
GPSC's Current business portfolio

Equity capacity (%)



Customer portfolio & services

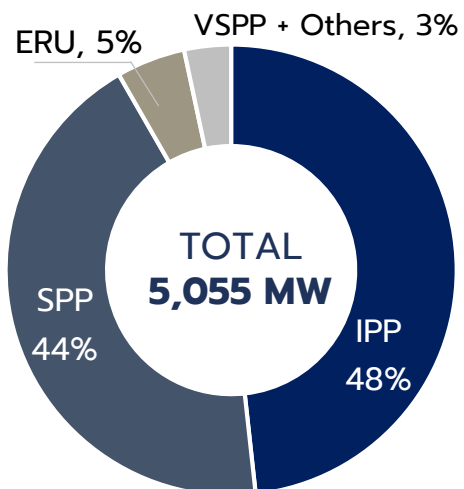
Q1/2021 Revenue by Customers | THB million, %



LT 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

PTT Group | 31% of Total Revenue



Product / Services



Electricity

4,467 MW



Steam

2,946 T/H



Industrial water

7,372 Cu.m./H



Renewable energy

588 MW



ESS battery

141 MWh



Chilled water

15,400 RT

GPSC milestones | transforming to “Utility of the Future”

2021 onwards

Utility of the future – growth driven by diversification



- ✓ Geographical expansion
- ✓ Building second home countries



- ✓ Diversified business (integrated utilities, energy management, renewable energy etc.)



- ✓ S-curve business (smart energy, future energy, battery value chain, etc.)

2019-2021

Consolidation & Innovation



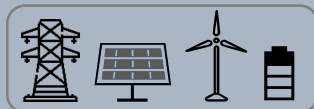
- Synergy & operational excellence with GLOW



- Scaling up of battery manufacturing business

2015-2018

Scale up organization



- Portfolio expansion in Thailand and overseas



- Merger and Acquisition of GLOW



- Investment in 24M

2013-2014

GPSC established



- Founded through merging of PTT Utility Company and Independent Power (Thailand)
- 8 of PTT's power assets were transformed to GPSC

GPSC : Q1/2021 Highlight & Outlook

Strategic Directions (3S)

- Synergy and Integration
- Selective Growth
- S-Curve

Sustainability at GPSC

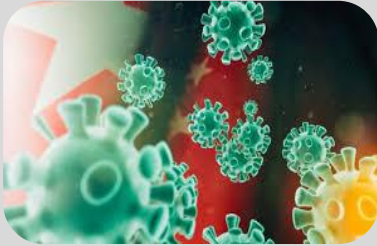
Q&A



Q1/2021 | Highlight

Challenges and Concerns

COVID-19



Energy Transition



Climate Change



Operational Excellence and Readiness to move forward

Strengthen the Core ➤ To ensure stability and continuity of utilities to supply IUs

- Measures against COVID-19 : The highest control measures have been implemented e.g. safe house for operators (Golden Man), refrain external parties to access the offices and operating areas.
- Business Continuity Plans (BCP) to give confidence that the company will be able to manage and continually operate production, without any interruption
- Operational Excellence : Best-in-class operation for reliability and security of the network and continuous Improvement

Growth ambitions ➤

- Follow the growth plan to invest in conventional and renewable
- Increased focus on renewables
- Increased presence outside of Thailand

New Businesses ➤

- Battery value chain
- Expansion in S-curve and adjacent businesses

Q1/2021 | Highlight

Q1/21 Events & Highlights



Stable demand from industrial customers



Strong performance from affiliates



Sales of 50% shares in GRP (ownership 100% → 50%)



GLOW Energy Phase 5 resumed normal operation since 2-Apr-21



Focus on battery's value chain & Continue develop S-Curve business

GPSC and OR unveiled G-BOX

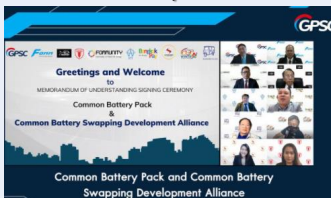


MOU with 9 companies

Collaboration with Swap & Go



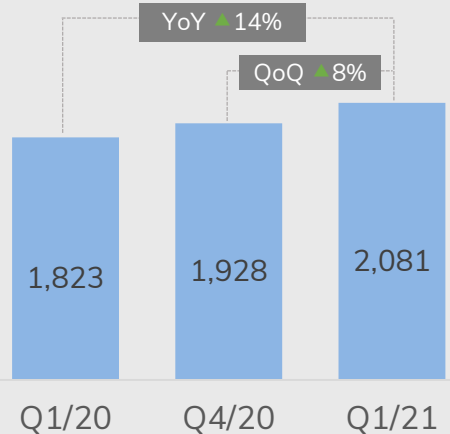
Partners up with Electrify



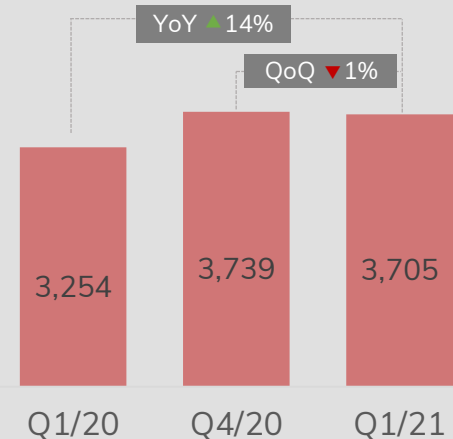
Q1/21 Performance

Sales Volume of Industrial Customers (IUs)

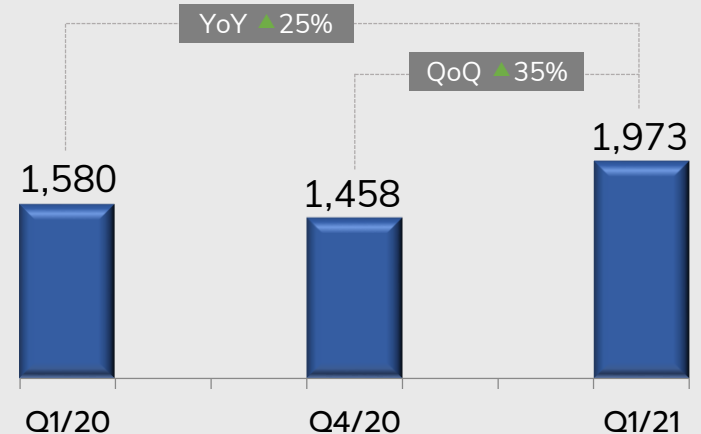
Electricity sales volume (GWh)



Steam sales volume ('000 tons)



Net Income (THB MM)



2021 Outlook

Performance Outlook

- ▲ Synergy value from acquisition of GLOW is expected to be THB >800 million (after tax) in 2021.
- ▲ Demand of electricity and steam in the MTP area increased by 4%, approximately.
- ▼ In 2021, average gas price is expected to be higher 5% from Q1/2021 and coal price is expected to go up from Q1/2021.
- GLOW Energy Phase 5 Plant resumed to normal operation in 2-Apr-2021. Insurance payment claim is ongoing.
- 🎯 GPSC is in the process of sharpening our strategic plan for responding and dealing with the challenges.

Project Closing and COD in 2021



Solar projects of 25 MW in Taiwan expected to closing in Q2/2021

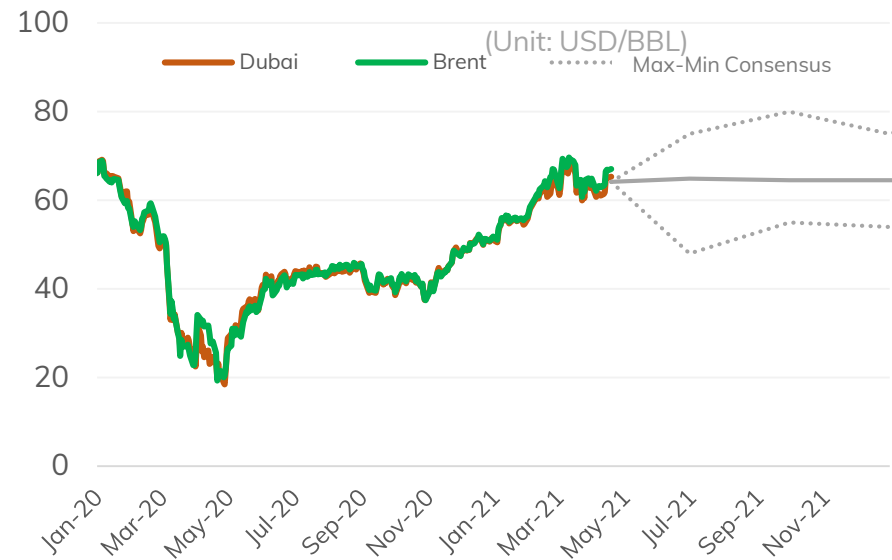


Rayong Waste to Energy Project has COD on 28-May-2021



Energy Storage Unit 30 MWh p.a. expected Start of regular production in Q2/2021

Key Assumptions (Unit: USD/BBL)



- Natural gas price is forecasted to increase slightly in the same direction with crude oil with lag time 6 – 12 months.
 - NG price increased slightly in Q1/2021.
 - Blended gas cost of SPP portfolio is expected 10% increase at year-end.
- Coal price
 - Coal price spiked in Q2/2021.
 - Coal price range is expected about US\$ 95-100 per ton (NewCastle) at year-end.

GPSC : Q1/2021 Highlight & Outlook

Strategic Directions (3S)

- Synergy and Integration
- Selective Growth
- S-Curve

Sustainability at GPSC

Q&A



Strategic Directions and Growth Strategy | 3S Strategy



SYNERGY & INTEGRATION

 Synergy Capture

 Customer Centric

 ROE Uplift



SELECTIVE GROWTH

 Thailand Business Development

 International Business Development

 Co-investment with PTT

 New Businesses



S-CURVE BUSINESS

 Battery manufacturer with own R&D

 System Integrator

 Digital Energy

S1 Synergy and Integration

Synergy and Integration

Q1/2021, the recognized synergy value is approx. **THB 224 mm** (After tax)

mainly from operation and maintenance, the management of power and steam network integration and coal ash management

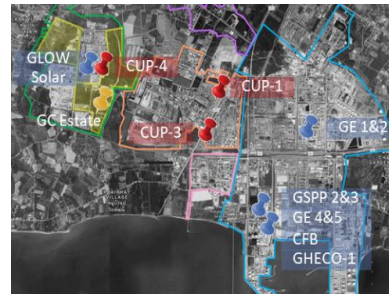


THB >1.6 bn per year recurring synergy from



Ramp up with full synergy value contribution by 2024

Key Synergy Initiatives



- Enhance reliability in Maptaput via Power and Steam Integration
- Aligning best practice to increase maintenance and procurement productivity and cost saving
- Corporate Function & IT Synergy

Operational Excellence (OpEx)



“To be **Top of Operational Excellence** in power and utilities business”

Strengthen the core = Foundation for future

- Best-in-class operation
- Customer-centric utility service provider

Explore & Innovate

- Build capabilities
- Setup and scale up S-curve and new business



S1 Synergy and Integration

To drive “Operational Excellence” across all assets of GPSC

Shareholder satisfaction

Customer satisfaction and engagement

Safety



- Align LOTO and Permit to Work procedures
- Quality Job Safety Analysis
- Introduce “Hold Point” in Permit to Work
- Standardize Behavioral Based Safety KPIs across all plants

Reliability



- GPSC-Glow Inter-connection (power& Steam)
- Predictive Maintenance
- Classify critical equipment and replace obsolete equipment
- Replace Obsolete Relay Protections
- Gen/Load Shedding
- “Go Live” Mgmt. of Change
- Cascade Reliability KPI to all O&M Staff

Profitability



- GPSC-Glow Inter-connection (power& Steam)
- Enhance Linear Pro. Optimization Tool
- Performance Monitoring of Major Equipment
- IoT for Energy Savings
- Plant O&M Cost Management
- Outage Interval Optimization
- Successful New-Built Project hand Over

Sustainability



- Competency and Gap Closing
- Incident Management Process (P-D-C-A)
- Quality RCA
- End-Stage Operations Organization
- Best Practice Sharing
- Use Yammer for group communication
- Succession Planning
- Industries Benchmarking
- Develop HV Competence Center

Organization and people: ACT Spirit, Effective Communication, Qualifications, Analytical Skills, HV Competence Center



OEMS: SSHE, ORM, RAI, OPS, VCM, CPM, MOC



Digital Transformation: Lean Process, New ERP Implementation, Data Management, Robotic, Sensors



Enablers



Selective Growth

GPSC Selective Growth

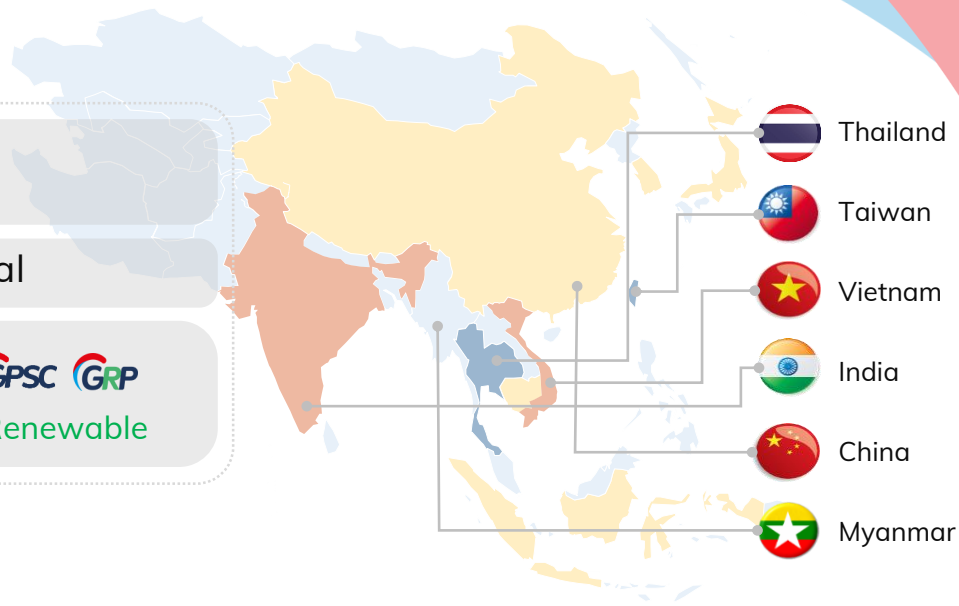
Thailand

 
Conventional & Renewable

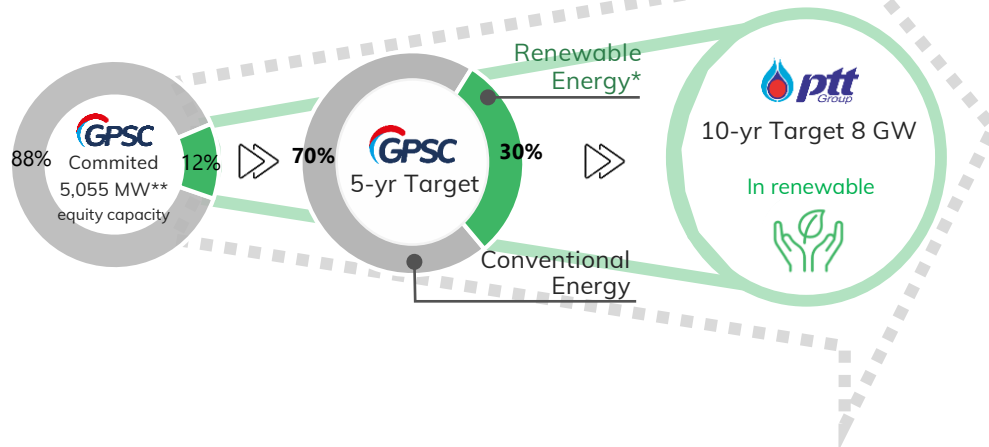
International


Conventional


 
Renewable



Way forward to sustainable growth



Focusing on power plant projects
by Leveraging PTT Group's Networking

 will be a “new energy platform”
for PTT Group Investing especially in
renewable energy businesses internationally
through:


Pooling assets,
resources & Expertise


Financial capability

Note: * Renewable energy mentioned on this page covers energy from solar, wind, waste, hydro, etc.

S3 S-Curve Business

Expansion with Business Ecosystems

Pilot projects and proof of concept

24m
R&D / Lab



GPSC Pilot Scale



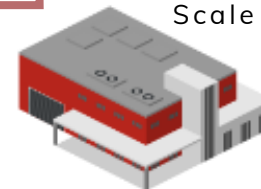
Manufacturing Scale-up



Business Collaboration

- Sharing of experience
- Joint procurement of Electrode Active Materials
- Right to offtake product to Thailand and etc.

GPSC
Commercial Scale



ESS Non-EV mobility EV mobility



Key enabler for GPSC's other s-curves with strong competitive advantage

One-stop service smart solution provider



Digital Energy and Expand business

Possible acceleration if market develops faster

Development and Achievements



24 February 2021 :
GPSC and OR unveiled G-BOX
150 kWh G-Box, a Battery Energy Storage System at PTT station



26 March 2021:
Collaboration with **Swap & Go** for swappable battery packs of motorcycles



29 April 2021 :
MOU with **9 companies** to develop a common battery pack and to develop a battery swapping platform for charging stations.



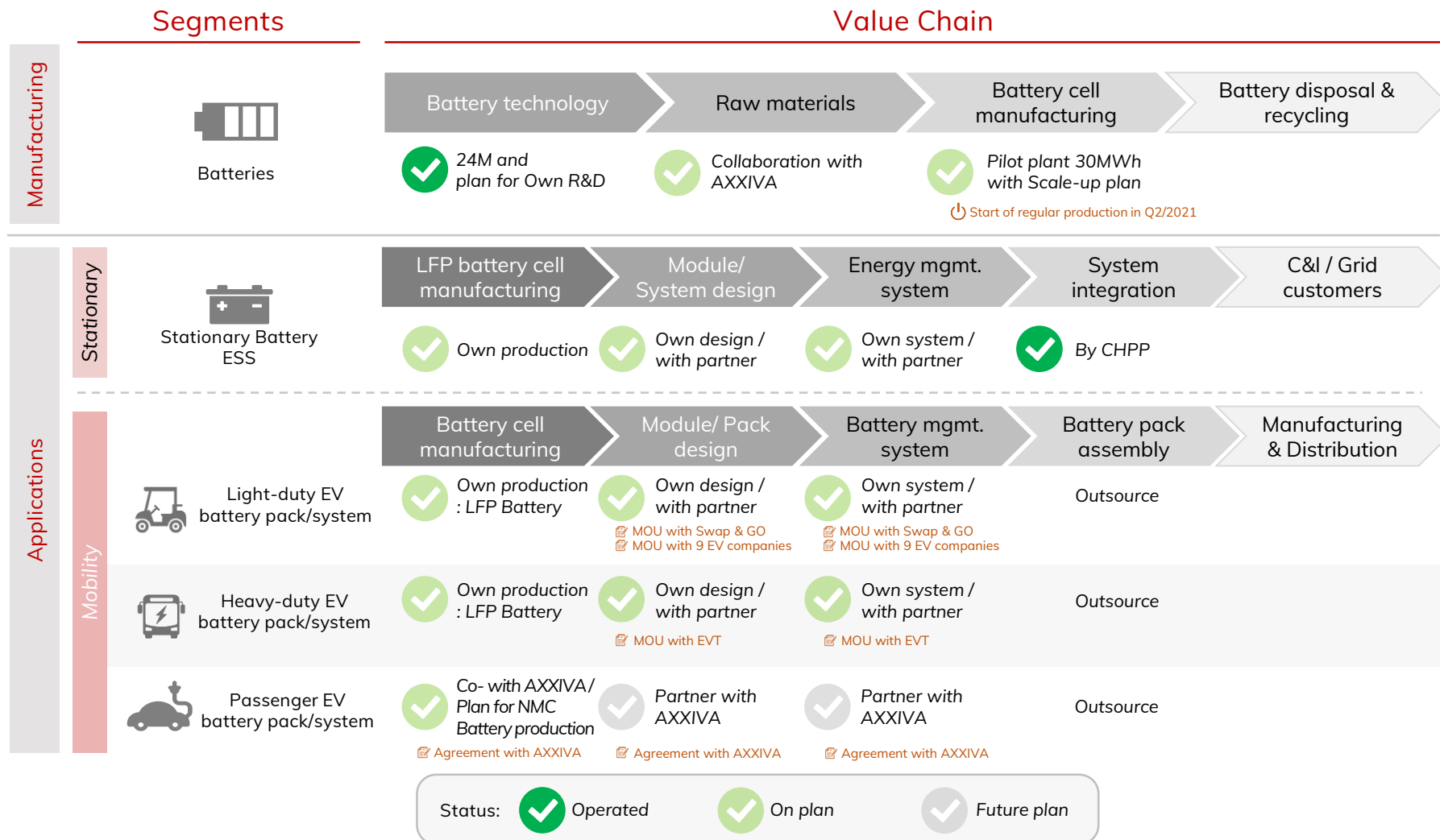
18 May 2021:
Partners up with **Electrify** to develop and implement a P2P energy trading platform





S-Curve Business

GPSC has built capabilities across different segments of the value chain, with focus on stationary battery ESS and light duty EV battery pack



S3 GPSC Battery : G-CELL and Applications

G-CELL Core Values



Safer

Greener

Reliable



Semi-Solid Battery Unique Design



Shorter
Process



Remove 40%
Inactive Material



No binder
Needed



Low Risk
of Contamination

Application and Target Market for Semi-Solid Energy Storage Unit (30 MWh p.a.)

Energy Storage



E-Mobility



Target applications

Commercial &
Industrial

- Charging station
- Industrial Estate

Micro-Grid

- Remote Area

Residential (RESS)
and others

- Property Development
- ESS Mobility and others

E-Mobility

- Battery for EVs
- Battery swapping

Target market



PTT Group network



Reputable commercial
& Industrial



Government offices,
University, Hospitals



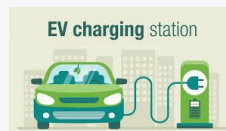
EVs Provider
(Bus, Motorcycle, Tuktuk)



Lead Acid Replacement



EV-Bus



ESS x EV Charger



Battery Swapping
& Car Charging



Battery Pack
for EV



Energy
Platform

S3 Applications and Achievement in Renewable & Smart Energy Projects



SMART ENERGY MANAGEMENT

- ✓ 1.39 MW renewable energy (solar roof + floating)
- ✓ 1.2 MWh ESS, Renewable optimization and Zero-import building
- ✓ Blockchain P2P energy trading, EV chargers and Artificial Intelligence



6 MW Smart Energy Project at Suranaree University To create a low carbon university

1.74 MW
Solar Rooftop

4.312 MW
Floating Solar

100-200 kWh
Lithium-ion BESS

AI &
Smart Energy
Platform

- ✓ High efficiency BESS with management of solar power generation
- ✓ Blockchain-based smart grid and AI
- ✓ Cutting-edge innovation and smart energy platform



@Wangchan Valley Smart Natural Innovation Platform



SMART Energy Management

- Clean Energy Generation
- Flexibility Distributed Generation
- Cost Efficient No Clean Energy Shedding



ESS FOR GC's INNOVATION CENTER (Launched: Feb 2020)



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



First offshore floating solar farm 100 kW installed capacity for seaside of PTT Tank



- ✓ PTT Tank : Cut the electricity cost and reduce carbon dioxide emission
- ✓ GC developed special plastic "InnoPlus HD8200B"
- ✓ CHPP designed and installed the floating solar system

GPSC : Q1/2021 Highlight & Outlook

Strategic Directions (3S)

- Synergy and Integration
- Selective Growth
- S-Curve

Sustainability at GPSC

Q&A



Q1/2021 | Move towards sustainability

Sustainability & Climate Change Strategy

Sustainability Management Framework

Power Accessibility



Enhance stability of access by investing in distributed energy technologies and infrastructure

Quality of Life



Empower better living by providing occupational training program, light for a better life program and zero-waste village

Eco - system



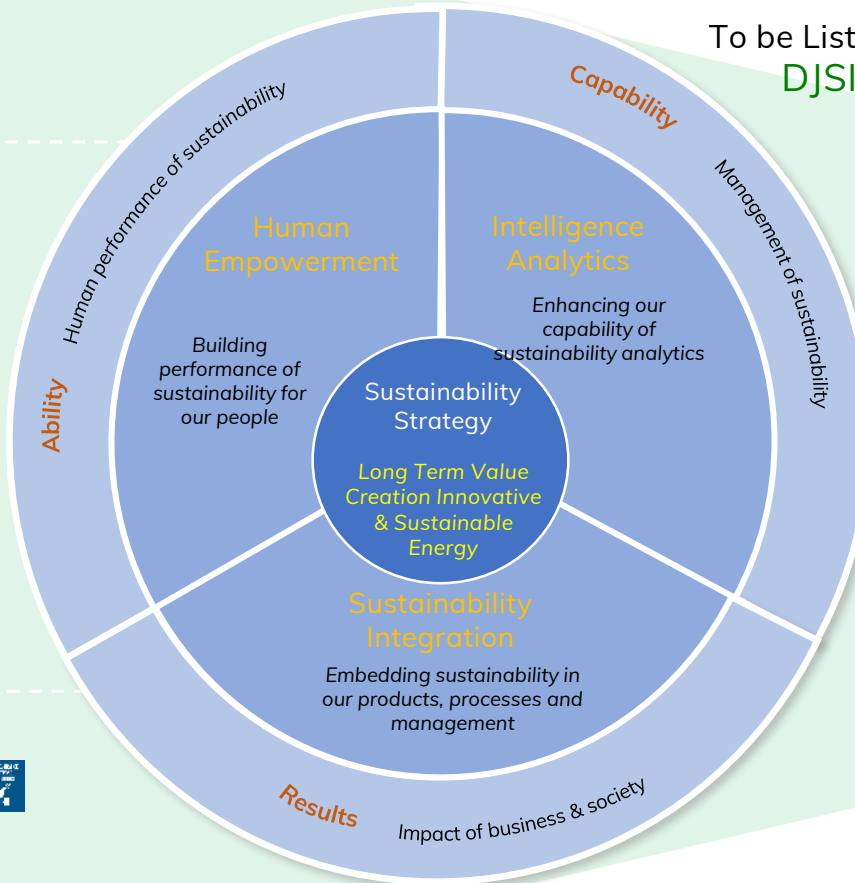
Eco-system of driving clean energy, cultivating the Circular Economy concept and easing environmental impacts

Sustainable Innovation



Sustainable Innovation for the corporation to drive improvement initiatives through Artificial Intelligence (AI) and Blockchain, innovation culture and youth social innovation

Long Term Values Creation Innovative & Sustainable Energy



To be Listed in
DJSI



Aim to
NET ZERO



Sustainability | Net Zero Framework

The route to net zero for utilities

INTERNAL



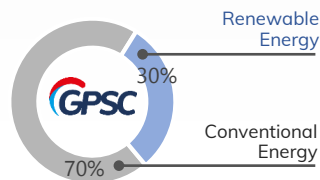
Reduce fossil fuel usage

- Adopt best practice operational excellence
- Retrofit non-renewable power plants, etc.



Grow renewables

- Execute the growth strategy as planned by
- Develop solar and wind power plants
 - Integrate distributed solar and Switch to microgrid, etc.



Enhance infrastructure

- ESS with renewable energy generation support and EMS
- Implement digital transformation
- Study and adopt CCUS, etc.



EXTERNAL



Trading / Offsets

- Study carbon credits, emissions trading schemes, shadow carbon pricing, etc.



Note: ESS : Energy Storage System
 EMS : Energy Management System
 CCUS : Carbon Capture, Utilization and Storage

Q&A SESSION

IR Contact:

Pongsak Plaingam +662 140 4646

Suthathip Charoenkij +662 140 5318

ir@gpscgroup.com

www.gpscgroup.com



Update of Projects

Project under construction



Rayong Waste to Energy (WTE)



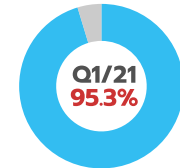
Electricity (MW) 9.8

COD | 28-May-2021

Semi-Solid Energy Storage Unit | 30 MWh



Start of regulation production | Q2/2021

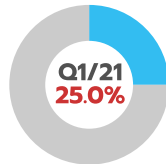


Capacity (MWh/yr.) 30

SPP Replacement - Stage 1 | Glow Energy Ph. 2



SCOD | Q4/2022



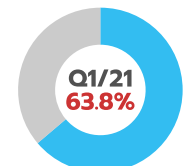
Electricity (MW) 192

Steam (ton/hr.) 300

Energy Recovery Unit (ERU)



SCOD | 2023

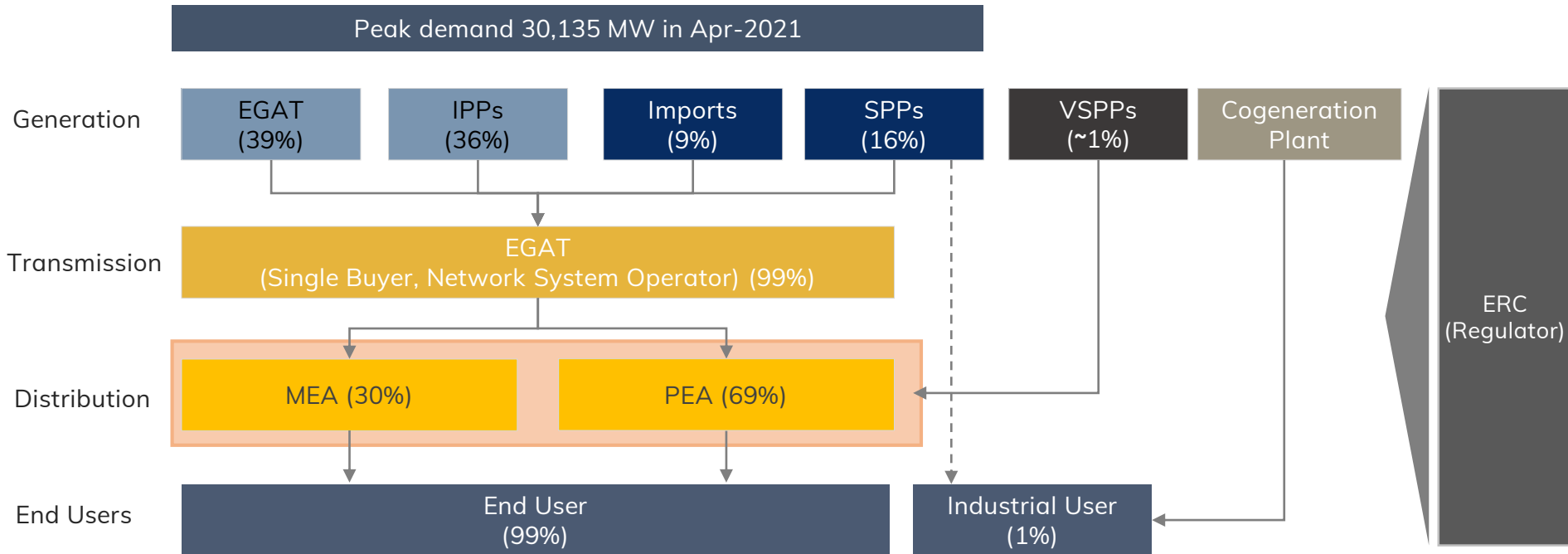


Electricity (MW) 250

Steam (ton/hr.) 175

Current power industry structure in Thailand

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



Definition

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

Power Plant Definition & 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:

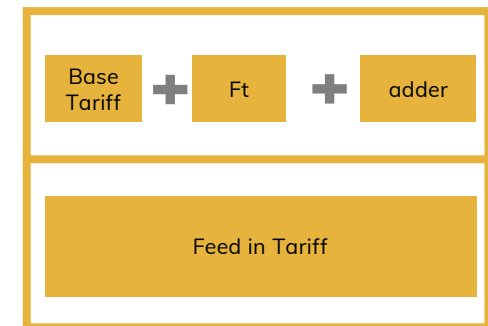
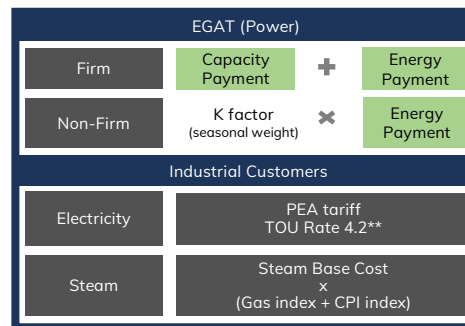
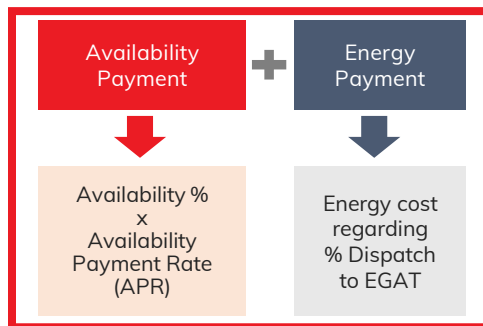
EGAT:

- 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



* Under various type of contracts.

** Fuel Saving (FS)

*** Reference rate with conditions:

<https://www.pea.co.th/>

Embedded sustainability to our strategy to build “Long Term Value Creation, Innovation & Sustainable Energy”

LIGHT FOR BETTER LIFE

Small-scale Solar PV in remote areas

Solar Rooftop to Schools in Rayong



- GPSC delivered Solar Rooftop System to 3 schools (25.9 kW) in Wangchan Valley in Rayong
- Lower emission of green house gas 93.5-187 tons of carbon/year

Solar Rooftop to Hospital in Koh Sichang



- GPSC and Thailoil delivered Solar Rooftop System (53.46 kW) to Koh Sichang Hospital to improve energy security of the hospital



Solar Rooftop to Hospital in Mae Hong Son



- GPSC and TOP delivered Solar Rooftop System (40.5 kW) to Thanyarak Hospital in Mae Hong Son

GPSC YOUNG SOCIAL INNOVATOR



2 golden prizes and 1 silver prize from 2020 The 6th World Invention Innovation Contest (WiC) in Seoul

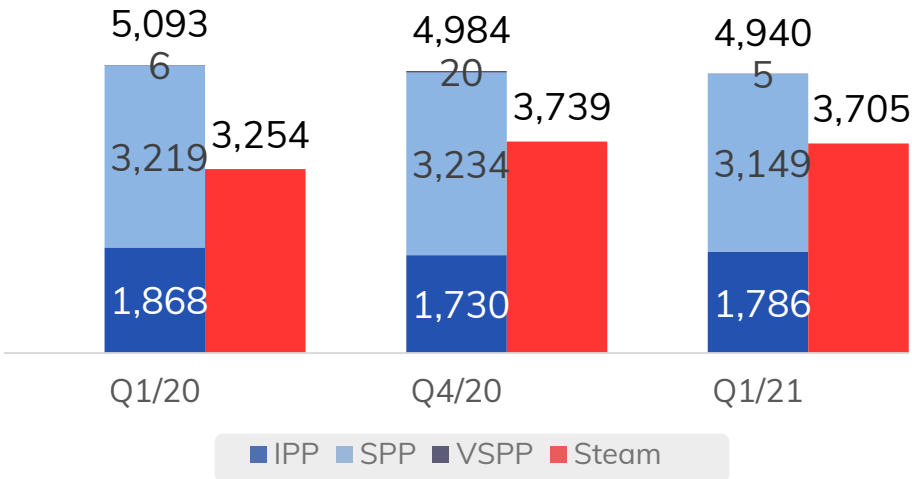
ZERO WASTE VILLAGE



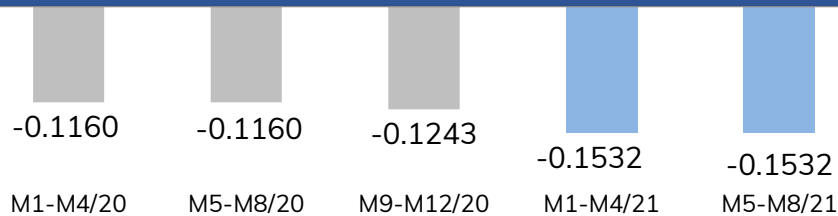
Delivering a waste management learning center to Baan Phai community in Rayong

Q1/2021 Key Drivers

Electricity Sales volume (GWh) & Steam Sales volume ('000 tons)



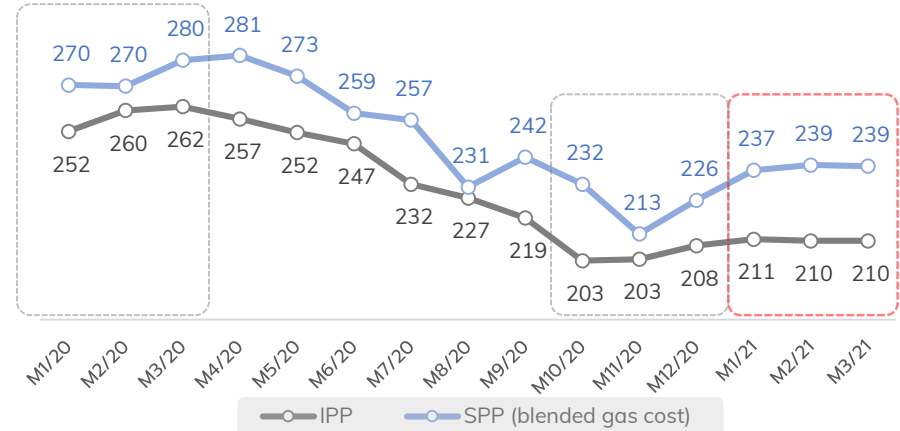
Ft (THB/kWh)



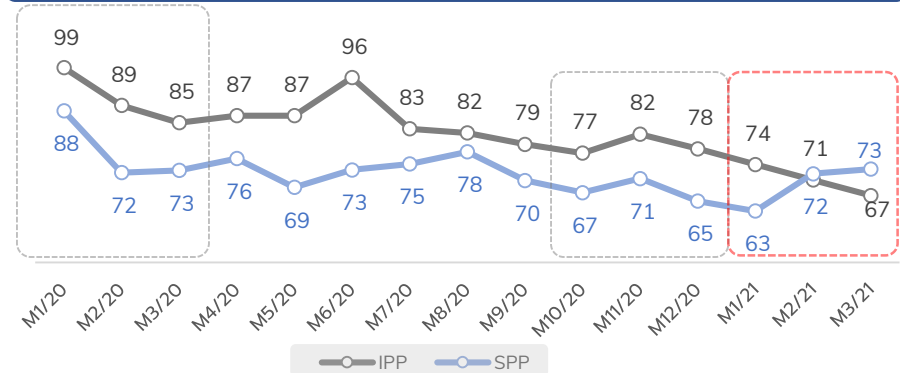
Ft for M1-M8/2021 is -15.32 Satang/unit.

IPP's Availability Rate (%)	Q1/20	Q4/20	Q1/21	Change +/-	
				YoY	QoQ
Sriracha Power Plant	95%	90%	99.8%	5%	10%
GIPP	100%	90%	76%	(24%)	(14%)
GHECO-One	96%	94%	59%	(37%)	(35%)

Natural Gas Cost 2020 - Q1'2021 (THB/MMBTU)



Coal Cost 2020 - Q1'2021 (USD/Ton JPU)



End-month FX (THB/USD)

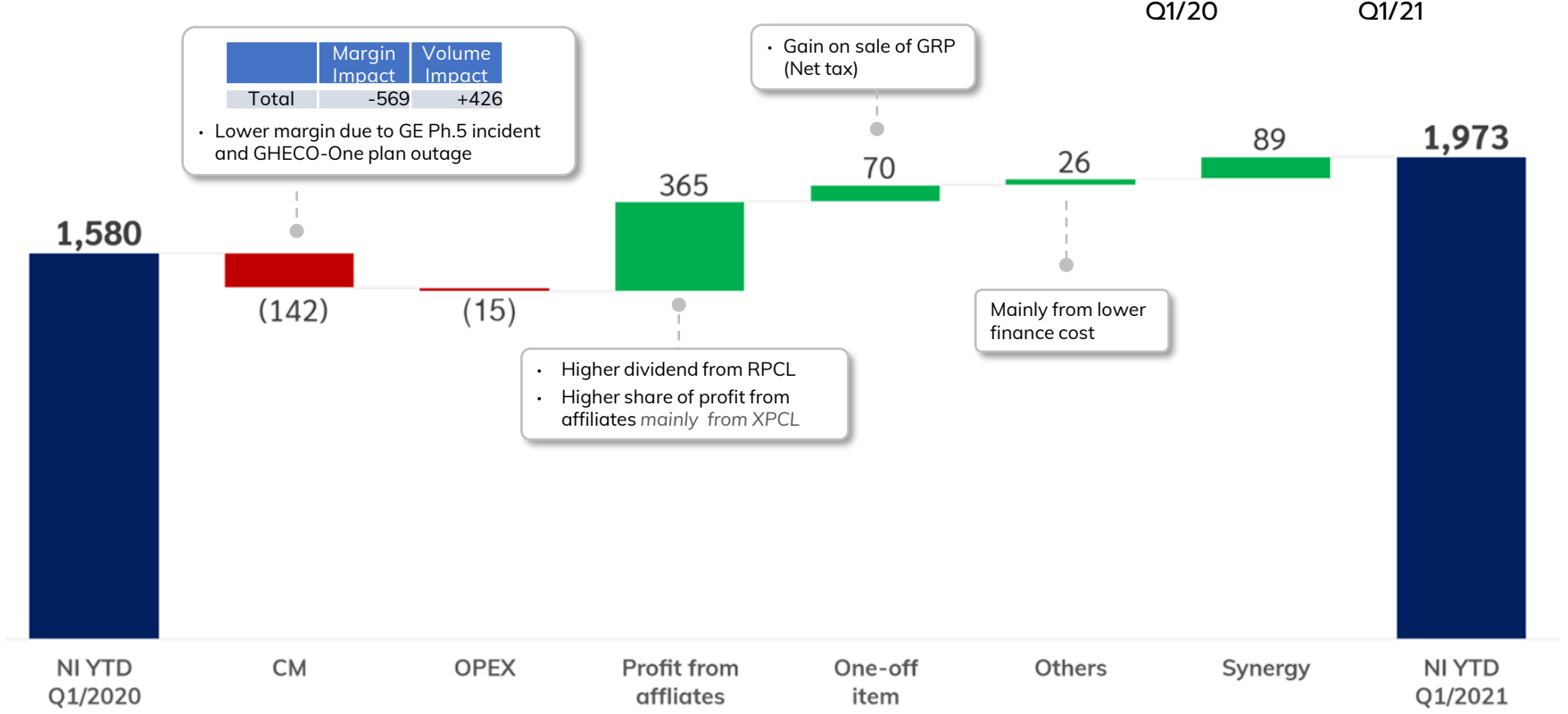
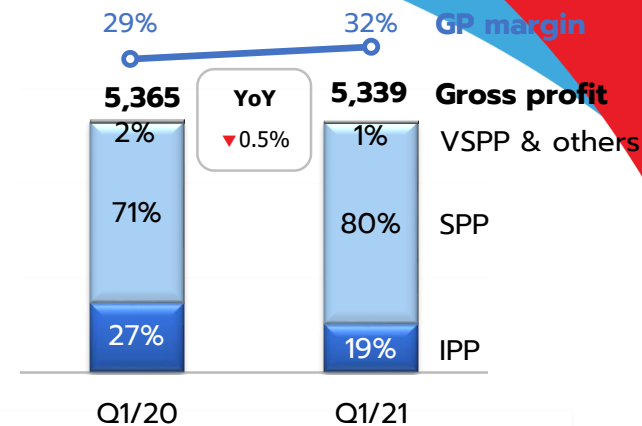
M1/20	31.30	M10/20	31.37	M1/21	30.17
M2/20	31.78	M11/20	30.45	M2/21	30.21
M3/20	32.83	M12/20	30.21	M3/21	31.51
Average	31.97		30.68		30.63

Q1/2021 vs Q1/2020 (YoY) Net Profit

(Unit : THB million)

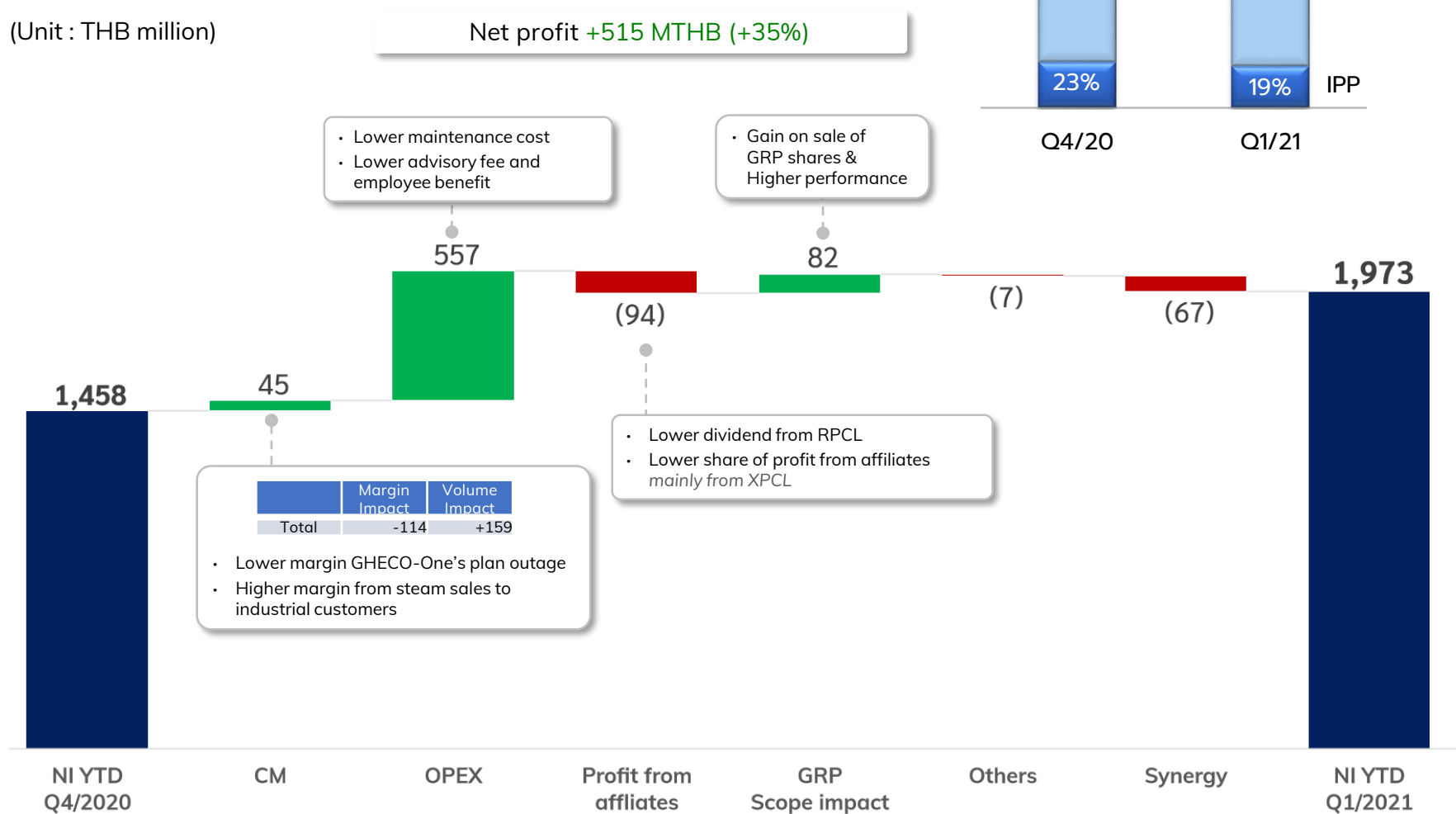
Net profit **+393 MTHB (+25%)**

Gross profit & GP margin



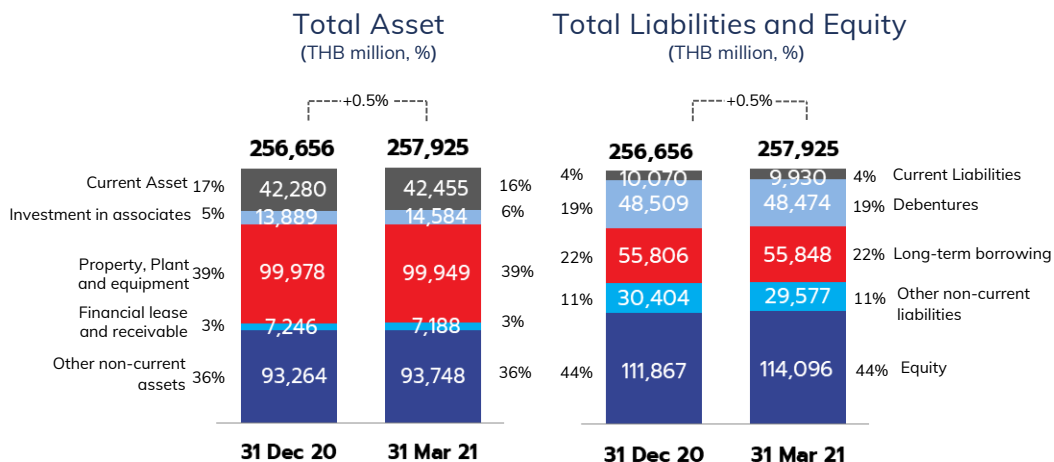
Q1/2021 vs Q4/2020 (QoQ) Net Profit

(Unit : THB million)

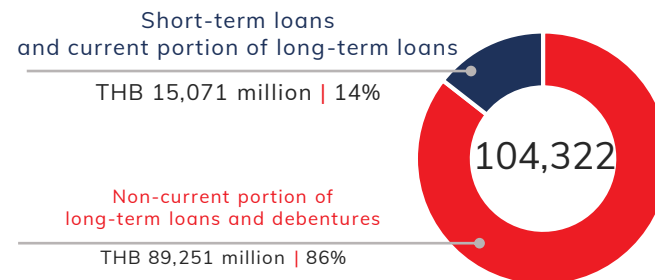


Financial Positions and Debt Profile

Summary of Financial Position



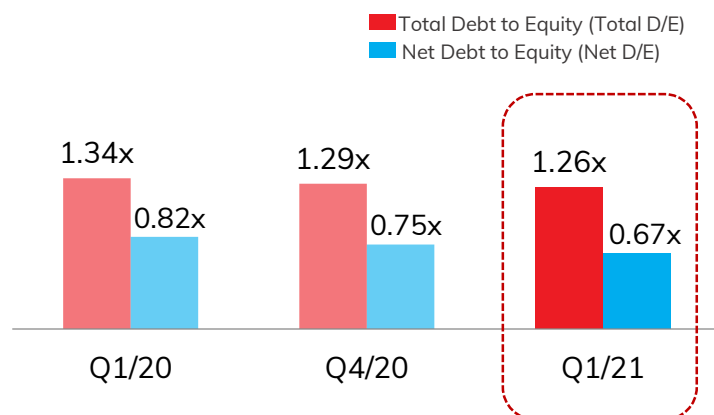
Total Interest-Bearing Debt | THB million



As of Q1/2021:

- Average cost of debt: 3.06%
- Average remaining tenor: 5.3 year

Total debt to equity and net debt to equity ratio | times



Credit ratings

BBB-

S&P Global

AA-

TRIS RATING
A Strategic Partner of S&P Global

A+(tha)

FitchRatings

Q1/2021 Operating Results

Overall operating results of the Company and its subsidiaries (unit: THB million)	Q1/20	Q4/20	Q1/21	change +/-	
				YoY	QoQ
Operating revenue	18,308	16,532	16,624	(9%)	1%
Cost of sales (excluding depreciation and amortization)	(12,943)	(11,601)	(11,285)	(13%)	(3%)
Gross profit	5,365	4,931	5,339	(0.5%)	8%
Selling and administrative expenses	(418)	(528)	(434)	4%	(18%)
Other operating income	4	5	5	25%	(8%)
EBITDA	4,951	4,409	4,910	(1%)	11%
Depreciation and amortization	(2,074)	(2,046)	(2,053)	(1%)	0%
EBIT	2,877	2,362	2,856	(1%)	21%
Finance costs	(1,041)	(965)	(974)	(6%)	1%
Other non-operating income and expenses	174	133	264	52%	98%
Dividend received and shares of profit of associates and joint ventures	(68)	367	297	537%	(19%)
Income tax expenses	(254)	(141)	(453)	78%	222%
Profit before FX and extraordinary items	1,688	1,757	1,990	18%	13%
Net foreign exchange gain (loss)	(30)	12	2	106%	(85%)
Net profit	1,658	1,769	1,992	20%	13%
Non-controlling interests	(78)	(311)	(19)	(76%)	(94%)
Net profit for the Company	1,580	1,458	1,973	25%	35%
Adjusted Net Income	1,948	1,813	2,359	21%	30%
Gross profit margin (%)	29%	30%	32%	3%	2%
Net profit margin (%)	9%	9%	12%	3%	3%
Adjusted Net Income margin (%)	11%	11%	14%	3%	3%

GPSC's FINANCIAL POLICY

- 1 Net Debt to Equity $\leq 1.0x$
- 2 Net Debt to EBITDA $\leq 4.0x$
- 3 Dividend Policy | Minimum dividend at the rate of not less than 30% 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 Power Plant Portfolio (1/2)

Name	Type	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%)	1285	321	321	-	-	2019	29
RPCL	IPP	GPSC (15%)	1400	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%)	-	-	-	250	1,340	1994	-
Glow Energy Phase 2	SPP	GLOW (100%)	281	281	281	300	1,180	1996	(extension)
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/ GLOW SPP 3	SPP	GLOW (100%)	513	513	513	190	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

Note: Equity capacity includes 100% stake in GLOW, ERU and GRP1

GPSC Power Plant Portfolio (2/2)

Name	Type	Shareholding (%)	Total capacity (MW)	Equity Power capacity (MW)	Equity Operating Power capacity (MW)	Steam (T/H)	Industrial water (Cu.m/H)	COD	Tenor
NNEG	SPP	GPSC (30%)	125	38	38	9	-	2016	25
NNEG Expansion	SPP	GPSC (30%)	60	18	18	3	-	2020	21
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			2,618	2,196	2,196	2,771	7,292		
VSPP and others									
Rayong WTE	VSPP	GPSC (100%)	9.8	9.8	-	-	-	2021	18
Glow Energy Solar Plant	VSPP	GLOW (100%)	1.55	1.55	1.55	-	-	2012	25
CHPP	VSPP	GPSC (100%)	5	5	5	-	-	2008	30
CHPP (Solar)	VSPP	GPSC (100%)	5	5	5	-	-	2016	25
ISP1	Solar	GPSC (99%)	20.8	20.59	20.59	-	-	2017	20
GRP (NPS, WXA, PPS)	VSPP	GPSC (50%)	39.5	19.75	19.75	-	-	2014-15	25
GRP1 (Solar in Taiwan) (Under closing process)	Solar	GRP (90%)	55.8	25.11	-	-	-	2016-21	20
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
Private PPA	Solar	GPSC Gr. (100%)	21.90	21.90	4.08			2018-21	Long-term
Total VSPP and others			313	170	127	-	-		
ERU									
ERU (under construction)	Cogen	GPSC (100%)	250	250	-	175	-	2023	25
Total ERU			250	250	-	175	-		
Total capacity			8,091	5,055	4,762	2,946	7,372		

Note: Equity capacity includes 100% stake in GLOW, ERU and GRP1

2021 Maintenance Schedule | Sriracha and Rayong Plants

Site	Description	Duration	2021											
			Q1			Q2			Q3			Q4		
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CUP-1	GTG-13	22 Days							12/7	MI	2/8			
	HRS-13	22 Days							12/7	3Y	2/8			
CUP-2	GTG-21	22 Days		9	MI	30								
	HRS-21	22 Days		9	3Y	30								
CUP-4	GTG-41	5 Days											15/11	RMI 9/12
	HRS-41	11 Days						27/6	1Y	7/7				
SRC	HRS#1	14 Days											15/11	3Y 28/11
	HRS#2	14 Days											15/11	3Y 28/11
	Steam Turbine.10	25 Days												
	GT-11	8.33 Days											15/11	CI 23/11
RDF	BMH Machine	7 Days									7	MNI	13	

Notes: Rayong Site

GTG	Hot Gas Path Inspection for Gas Turbine	14 days	HRS	One Year Inspection HRS	11 days
HGPI	Major Inspection for Gas Turbine	22 days	3Y	Three Year Inspection HRS	14 days
MI			Others		
STG	Minor Inspection for Steam Turbine	15 days	1Y	One Year Inspection NG Station Test	Online
1MO	2nd Major Overhaul for Steam Turbine	23 days	5Y	Five Year Inspection NG Station (NDT)	Online
2MO	2nd Major Overhaul for Steam Turbine	27 days	FO	Forced Outage	Depending on physical damage
AB					
1Y	One Year Inspection Aux. Boiler	11 days			
3Y	Three Year Inspection Aux. Boiler	13 days			

Notes: Sriracha Site

GTG	Combustion Inspection for Gas Turbine	8 days	HRS	One Year Inspection HRS	8 days
CI	Hot Gas Path Inspection for Gas Turbine	26	3Y	Three Year Inspection HRS	33 days
HGPI	Major Overhaul for Gas Turbine	33	Other		
MO			1Y	One Year Inspection NG Station Test	Online
days			5Y	Five Year Inspection NG Station (NDT)	Online
RCIE	Rotor and Casting Inspection Evaluation	49	FO	Forced Outage Depending on physical damage	
days					

2021 Maintenance Schedule | IRPC-CP

Main Unit	Description	Duration	2021											
			Q1			Q2			Q3			Q4		
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Block 1														
CTG 21	B	20 Days				20								
HRSG 21	B	20 Days				20								
CTG 22	B	20 Days				20								
HRSG 22	B	20 Days				20								
STG 23	MI	20 Days				20								
Block 2														
CTG 31	B	20 Days					20							
HRSG 31	B	20 Days					20							
CTG 32	C	22 Days							22					
HRSG 32	C	22 Days							22					
STG 33	MI	20 Days							20					
Aux. Boiler	YI	15 Days						15						

Notes:

MI Major Inspection

YI Yearly Inspection Aux Boiler 15 days

B CTG/HRSG Inspection Level B 20 days

C CTG /HRSG Inspection Level C 22 days

Excluded 1 Day maintenance

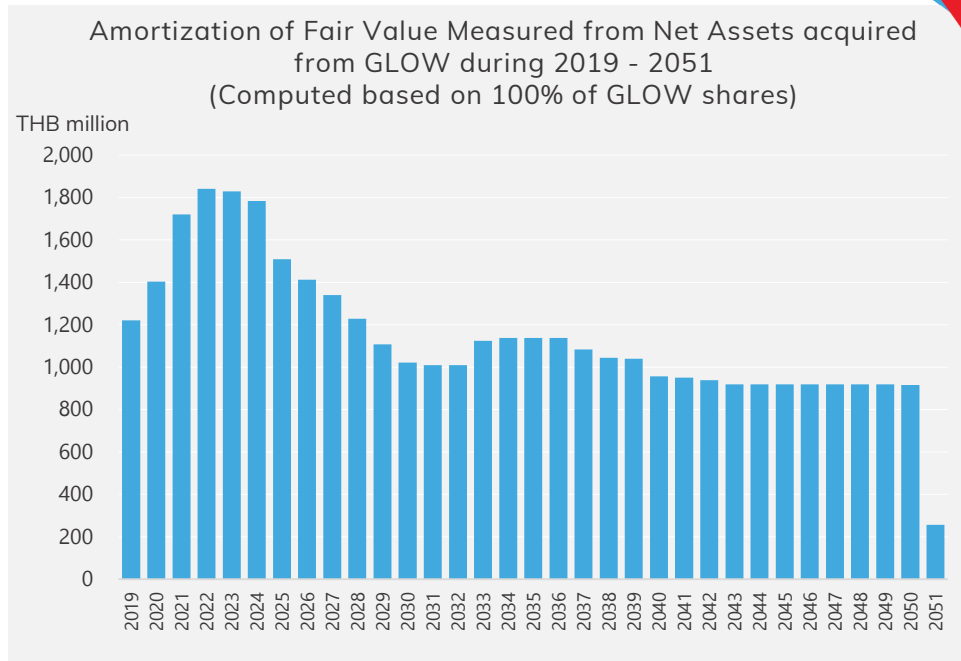
2021 Maintenance Schedule | GLOW's Main Units

Main Units	Description	Duration	2021											
			Q1			Q2			Q3			Q4		
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
GHECO-ONE	Minor Inspection	37 Days	1/1	2Y	6/2									
GIPP: UNIT 1	Minor Inspection	5 Days									27/9	3Y	1/10	
GIPP: UNIT 2	Minor Inspection	5 Days										10	3Y	14
CFB 3	Minor Inspection	7 Days				22/4	3Y	12/5						
Phase 5	Minor Inspection	5 Days			29/3	1.25	2/4							
GSPP11 (Plant 2)	Minor Inspection	14 Days							18	3Y	31			
GSPP11 (Plant 2)	Major Inspection	5 Days										10	5.7Y	14

Fair Value Measurement of Net Assets from Acquisition of Glow

unit: THB million

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	



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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