



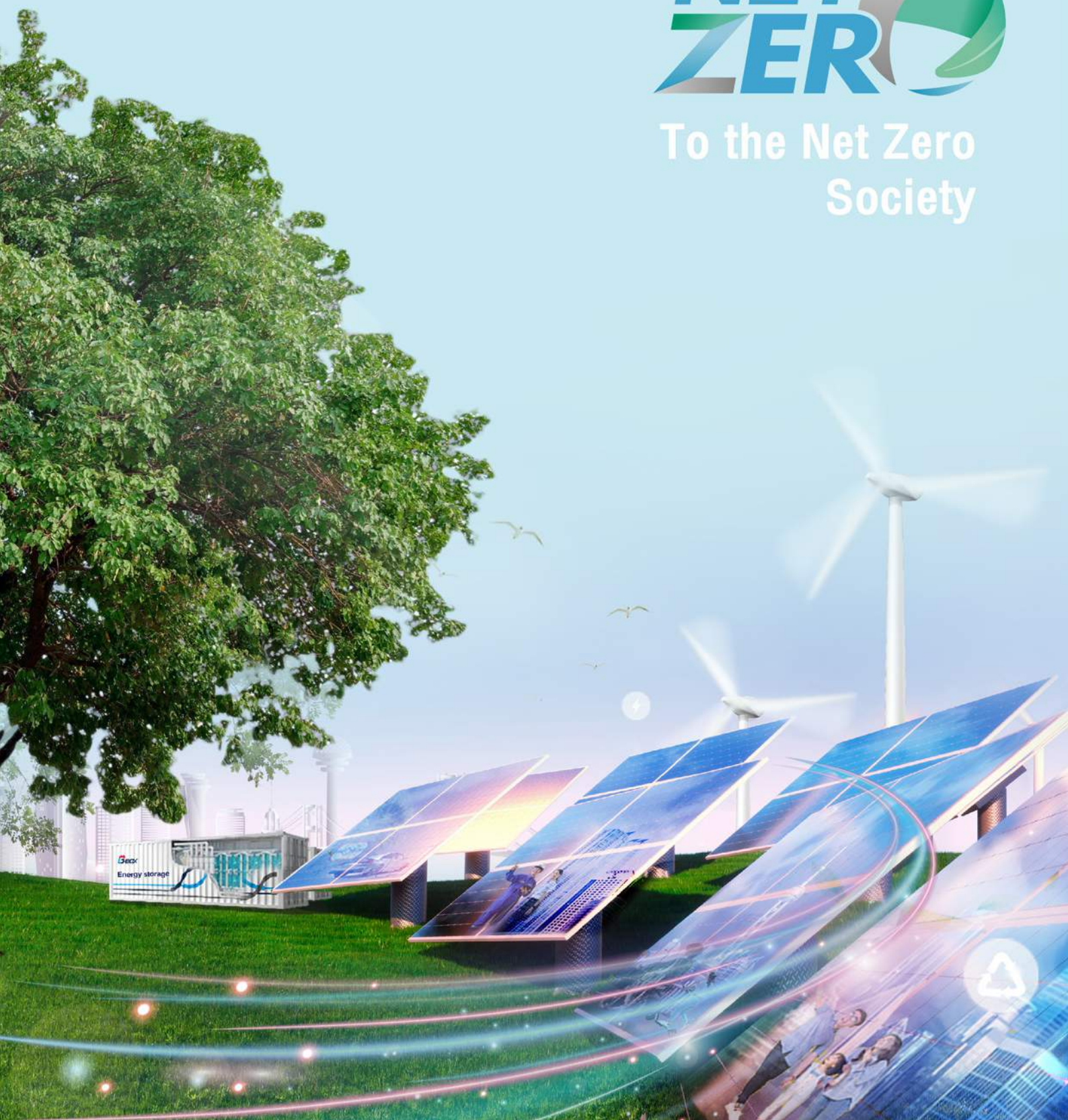
Member of
**Dow Jones
Sustainability Indices**
Powered by the S&P Global CSA

Global Power Synergy Public Company Limited

Annual Report 2022
(56-1 One Report)



To the Net Zero
Society





Vision:

The global leading innovative and sustainable power company



Aspiration:

To be top-three power company in Southeast Asia with more than half of MW from green portfolio



Mission:

To be a PTT Group power and smart-energy flagship that innovatively pursues operational excellence to create value for stakeholders by delivering reliable products to customers with responsibility to the planet



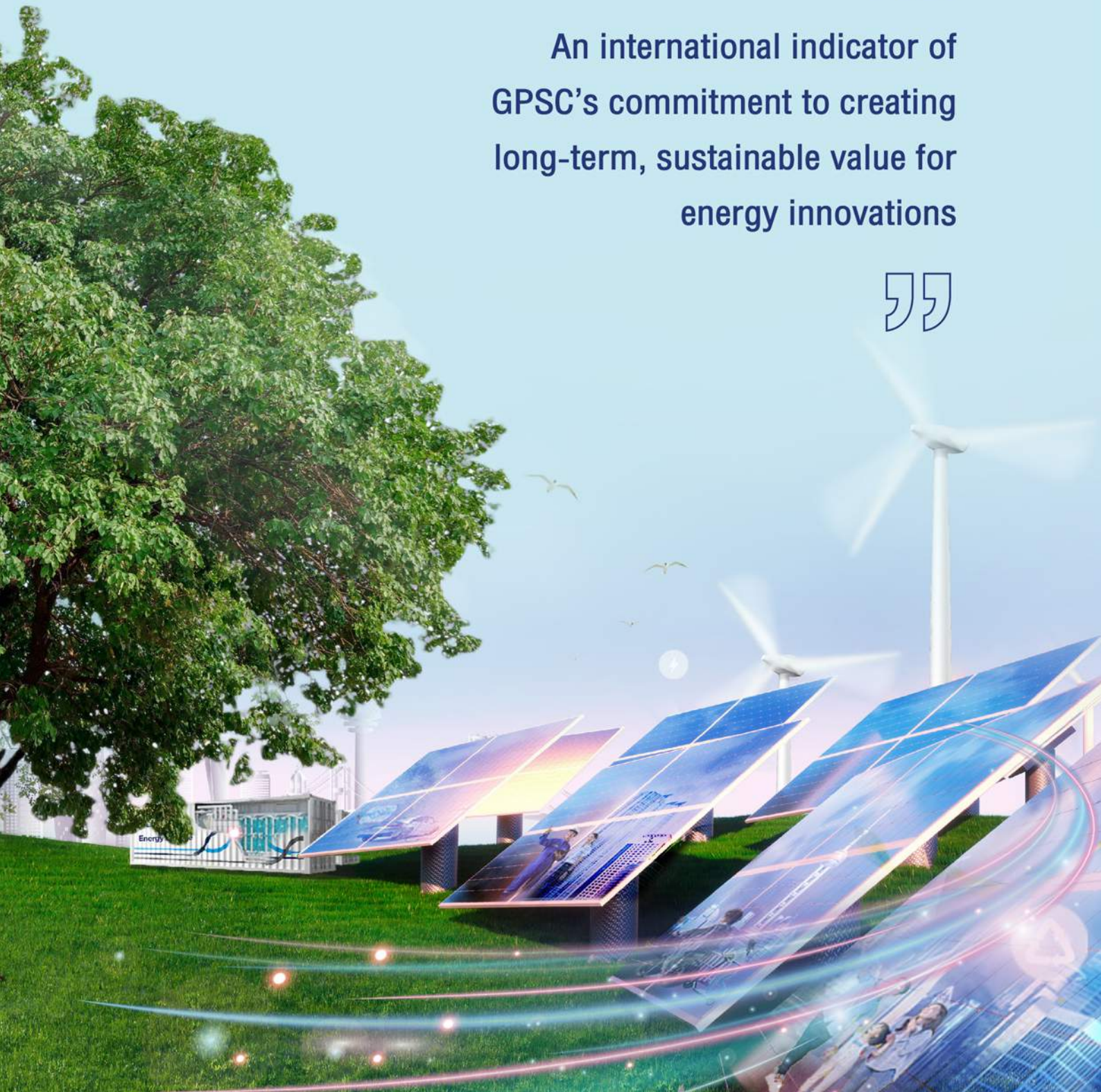


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DJSI

An international indicator of
GPSC's commitment to creating
long-term, sustainable value for
energy innovations



To the Net Zero Society

4S Corporate Strategies

S1



Strengthen and Expand the Core

Strengthen and grow services in our core businesses. Enhance production efficiency and refrain from investing in new coal-fired power plants.

S2



Scale up Green Energy

Grow the renewables portfolio to more than 50% by 2030.

S3



S-Curve & Batterie

Apply energy innovations and futuristic businesses, including advanced energy storage systems for EV batteries. Raise renewables power efficiency, catering to energy consumption models of a low-carbon society.

S4



Shift to Customer-centric Solutions

Provide solutions to customers' needs, including power and utility generation, by applying energy innovations derived from conventional and alternative-energy power plants.

GPSC: the Innovative Power and Smart Energy Flagship of PTT Group

As a leading innovative power and utility generator, GPSC relentlessly pursues clean-energy technology. We pioneered New S-Curve businesses, expertly carrying out the 4S Strategies while cooperating with business partners in scaling up green innovations for becoming a global innovative and sustainable power company. A company that efficiently applies smart energy for consumers, drives Thailand toward a low-carbon society, improve people's lives, and jointly provides better stewardship for the planet with readily accessible clean energy.

2030



Grow renewables
portfolio in power
generation to over 50%

2050



Achieve Carbon
Neutrality goal

2060



Achieve Net-Zero
GHG Emissions

Onward with clean energy, transforming our world ... To the Net Zero Society



Shrink fossil-fuel portfolio

**Strengthen the corporation, grow core-business services,
with a focus on enhancing production efficiency.**



NET ZER





Grow green portfolio

Maximize green portfolio by inventing
in renewable energy forms.



NET ZER





Apply energy innovations and futuristic businesses

Enhance efficiency for greater security in power and utility networks. Restructure business operations to sustain futuristic energy businesses underpinned by digital technology.



NET ZER





Engage in carbon-offsetting and trading

Operate green business by organizing greenhouse gas offsetting. Become a low-carbon organization in support of sustainable development.



NET ZER



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“ This Annual Report (56-1 One Report) referred to the information disclosed on the Company's website, which is an integral part of the 56-1 One Report. The Board of Directors certifies the correctness and completeness of such referred information. ”



Message from the Chairman & President and CEO



Dear Shareholders,

The year 2022 was a successful year for Global Power Synergy Plc (GPSC) as it was the first time we were included in the Dow Jones Sustainability Indices (DJSI) under the Electric Utilities category of the Emerging Markets Index Group with the highest score in the social aspect management among companies in the electric utilities industry group across the globe. This reflects our commitment to continuous business development for sustainability to be recognized a DJSI member.

It was, nevertheless, a tough year that challenged the knowledge, ability, and experience of the Board of Directors and management, particularly when prices of natural gas and coal took off while the variable tariff (Ft) of power supply could not be adjusted with such fuel costs. Still, our power generation was efficiently managed to win customers' trust and satisfaction and expand GPSC's customer base. Sales volumes of electricity and steam kept growing as

supported by synergy and cost management, resulting in our total revenue increasing to THB 123,685 million, up 65%, the highest growth recorded in ten years. GPSC, however, registered a net profit of THB 891 million, down 88%, caused by steep rises in fuel costs mentioned above.

Businesswise, we remained committed to driving business with a key strategy on clean energy as well as responding to the sustainable growth direction, as elaborated below:

1. **Focus on increasing power generation from renewable energy both at home and abroad** – In 2022 we increased our shareholding in Ayaada Energy Private Limited (AEPL) from 41.62% to 42.93% to develop a power plant in India and purchased 25% shares in CI Changfang Limited and CI Xidao Limited, both of which are offshore wind farms in Taiwan. These moves resulted in our power generation capacity from renewables to increase to 2,726 MW or 38% of the total capacity. In this regard, we won a ‘green loan’ with a credit limit of US\$185 million under a 10-year contract from Sumitomo Mitsui Banking Corporation (SMBC), considered PTT Group’s first green loan. The loan contributes to our stronger financial standing, thus enabling us to efficiently carry on with the plan to invest in renewable energy.
2. **Collaboration with key partners** – We joined the Bavnk of Agriculture and Agricultural Cooperatives (BAAC) in a study to turn potential agricultural areas into power generation sites using clean energy such as solar and wind in parallel with the promotion of clean farming technology, which is a way to raise the quality of life of Thai farmers by optimizing farmland. We also entered a joint venture to develop a wind farm project with Copenhagen Infrastructure Partners (CIP), a world-class expert in wind project development. The project spans site survey, potential area assessment, construction management, and application of modern technology to achieve leadership in wind power in Thailand.
3. **Raising efficiency of electricity generation plants powered by conventional fuels** – We constructed Glow Power Plant, Phase 2, with a capacity of 200 MW of electricity and 460 tons per hour of steam, and Glow SPP Power Plant, Phase 2, with a capacity of 98 MW of electricity and 230 tons per hour of steam under the SPP Replacement project in Map Ta Phut Industrial Estate to satisfy expanding demand for electricity and utilities under the Eastern Economic Corridor (EEC). This has also contributed to national energy security as a result. Both projects are equipped with high-efficiency technology that optimizes fuel for power generation while being environment-friendly. Commercial operations are slated for 2022-2024.
4. **Raising competitiveness of battery production and electric vehicle (EV) businesses** – We joined PTT in establishing Nuovo Plus Company Limited for development and distribution of, and investment in, the production of batteries for the future. We transferred our assets for the battery business

o Nuovo Plus, which comprised an energy storage production factory with an initial capacity of 30 MWh per year and 10.31% shares in Anhui Axxiva New Energy Technology Co., Ltd. in China, which runs a battery production facility with a capacity of 1 GWh per year. Nuovo Plus, moreover, co-invested with Gotion Singapore Pte. Ltd. (Gotion) in NV Gotion Co., Ltd. to import, assemble, and distribute battery modules and energy storage sets as well as EVs. The company will deliver its high-quality lithium-ion batteries to market by 2023 with an initial production capacity of 1 GWh per year, which will be doubled in 2025.

Besides pursuing these strategies, we aim to drive our business towards sustainability with scrupulous attention paid to environmental, social, and governance (ESG) management. Regarding environmental management, we were alert for new carbon capture, utilization, and storage (CCUS) technology and hydrogen technology to achieve more efficient combustion while reducing carbon. A study has been continuously carried out with

a target to become a 'net-zero organization'. In the social aspect, social and community development projects were launched under the sustainability management framework, established in line with our corporate strategies and business direction. Such framework contains four aspects, namely power accessibility, quality of life, eco-system, and sustainable innovation. In the governance aspect, the 2022 governance performance of listed companies was assessed and, for the seventh consecutive year, GPSC was rated 'excellent', having bagged a good governance award in the ASEAN Asset Class PLCs category under the 2021 ASEAN CG Scorecard project. The reward not only brought pride to the company, but also reflected our determination to establish a business on corporate governance and sustainable development.

Following the success, we were well accepted and earned several other awards at both national and international levels throughout 2022. At the international level, we were selected for the Best CEO

in Asia, Best CFO in Asia, and Best CSR in Asia awards at the 12th Asian Excellence Award 2022 on top of the Best Investor Relations Award for the third consecutive year. GPSC was also selected for an S&P Sustainability Award in the Bronze Class and was included in the Sustainability Yearbook 2022 for the second year, as assessed by S&P Global. Locally, GPSC garnered a Sustainability Excellence Award in the Highly Commended Sustainability Awards category at the SET Awards 2022 event, among many other accolades.

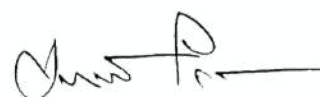
In 2022 we launched a strategy to particularly deal with fuel costs to approach sustainable growth and align with the support given by the government. We have relentlessly pursued energy innovation

along with technological energy development in collaboration with business partners to enhance the capacity of electricity and utilities. We aim to increase the share of renewables to over 50% of the total capacity by 2030 before tackling the target of carbon neutrality by 2050 and net-zero emissions by 2060. GPSC will then become a leading business entity in Southeast Asia for sustainable energy innovation.

The Board of Directors, management, and staff would like to express our gratitude to all shareholders for your continuous trust, confidence, and support. We assure you of our concerted efforts to operate the business and progress further to achieve the targets.



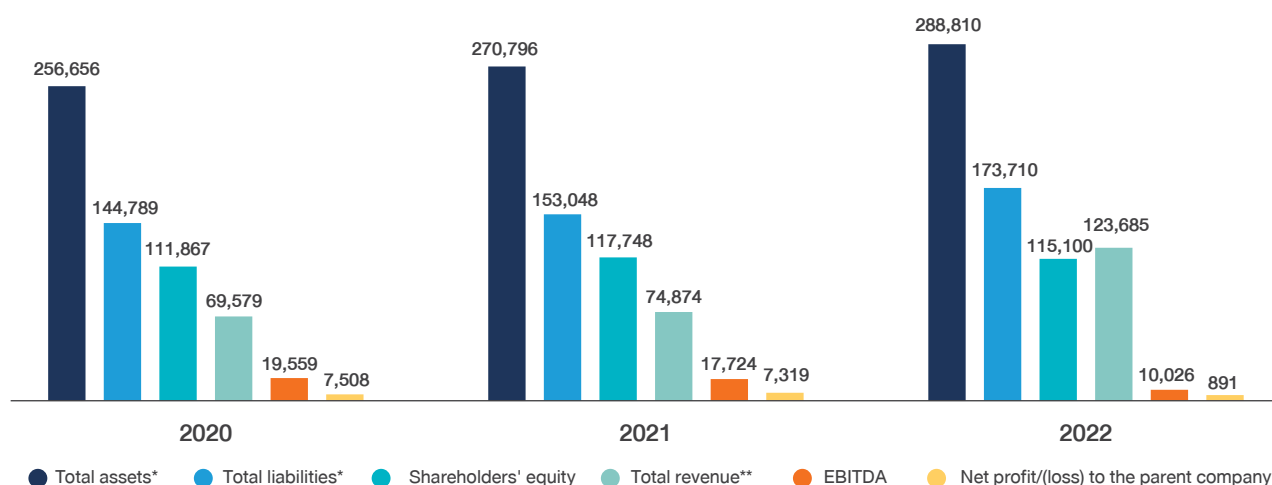
Mr. Pailin Chuchottaworn
Chairman



Mr. Worawat Pitayasiri
President & CEO

OPERATIONAL HIGHLIGHT

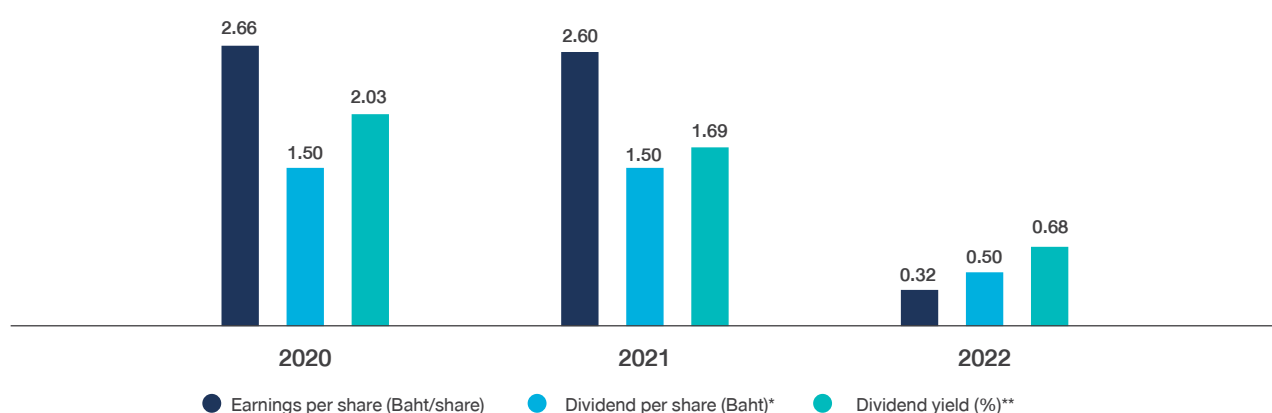
(THB Million)



Remarks:

* The statement of financial position was recategorized as of December 31, 2021, namely other account receivables, other current assets, other account payables, and other current liabilities

** Total revenue consists of selling, general & administrative expenses and revenue derived from financial leases



Remarks:

* Dividend for 2022 performance consisted of an interim dividend for first-half 2022 at 0.20 baht/share, already paid to shareholders, and dividend for second-half 2022 at 0.30 baht/share, subject to approval at the 2023 AGM.

** Calculation from share price at ending year

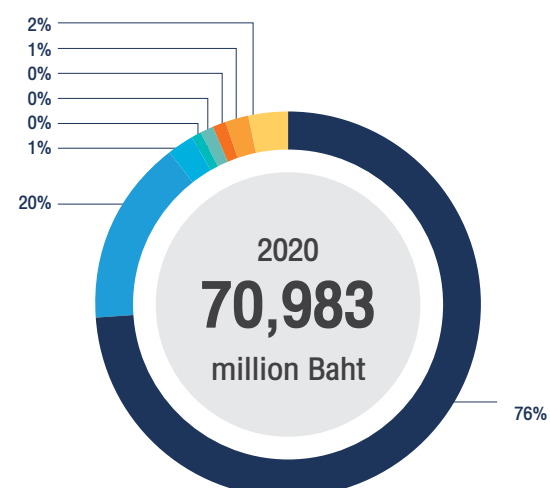
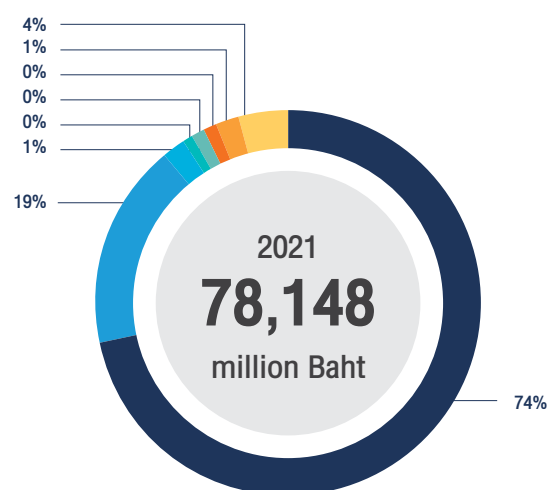
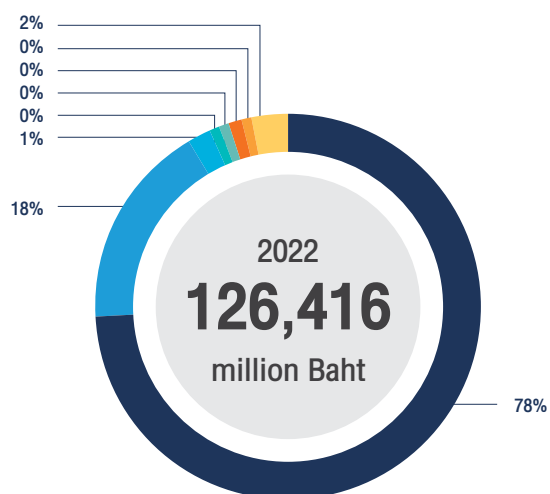
FINANCIAL RATIOS

FINANCIAL RATIOS	2020	2021	2022
EBITDA to Sales Revenue (%)	28.11	23.67	8.11
Interest Coverage Ratio (times)	2.78	2.36	0.33
Net Debt to Equity Ratio (times)	0.75	0.78	0.99
Return on Equity (%)	7.37	6.93	0.84
Return on Assets (%)*	2.95	2.78	0.32

Remarks:

* Return on assets is the ratio between the net profit/(loss) of the parent company inclusive of uncontrolled equity to total assets

REVENUE



- Electricity
- Steam
- Industrial water/chilled water
- Services
- RDF waste fuel
- Nitrogen
- Financial leases in power plants
- Other revenue

PRODUCTS

ELECTRICITY

2022

**21,531**

(Gigawatt-hour, GWh)

2020

19,684

2021

20,132

STEAM

2022

**14,510**

(kiloton)

2020

13,871

2021

15,090

CHILLED WATER

2022

**24,419**

(kilo-refrigeration ton)

2020

27,847

2021

25,228

WATER FOR INDUSTRIAL USE

2022

**14**

(million cubic meter)

2020

15

2021

15

REFUSE DERIVED FUEL

2022

**0***

(tonne)

2020

18,500

2021

0*

Remarks:

* No sales volume for refuse derived fuel due to feed as fuel to RDF Power Plant

AWARDS OF ACHIEVEMENTS 2022



Outstanding Executives

- 1 Asia's Best CEO, 2022
by Corporate Governance Asia
- 2 Asia's Best CFO, 2022
by Corporate Governance Asia



Anti-Corruption

- 1 Certificate of Membership of the Thai Private Sector Collective Action against Corruption, 2021-2023
by Thai Private Sector Collective Action against Corruption Council, CAC



Corporate Governance

- 1 Corporate Governance Report (CGR) survey rating, 2022
by Thai Institute of Directors
- 2 ASEAN CG Scorecard, 2022
by Thai Institute of Directors



Finance

- 1 Best Investor Relations Company, 2022
by Corporate Governance Asia



CSR

- 1 Asia's Best CSR, 2022
by Corporate

Sustainability

- 1 Dow Jones Sustainability Indices Award, 2022
by S&P Global
- 2 SET Awards 2021, Sustainability Excellence, Rising Star Sustainability Award, 2022
by SET
- 3 Thailand Sustainability Investment (THSI), 2022
by SET and Money & Banking
- 4 Low-Carbon and Sustainable Business (LCSB) rating of Excellence, 2022
by Thailand Greenhouse Gas Management Organization (Public Organization), TGO
- 5 Carbon Disclosure Project 2022, B Level, 2022
by Carbon Disclosure Project, CDP
- 6 Carbon-Neutral Event Label for the 2022 AGM
by Thailand Greenhouse Gas Management Organization (Public Organization), TGO



Others

- 1 Supporter of the 2022 Right Livelihood Model Award event
by Right Livelihood Foundation



Environment

- 1 Green Industry Level 4, 2020-2023
 - Central Utility Plants 1, 2, 3
- 2 Green Industry Level 3, 2020-2025
 - Central Utility Plant 4
 by Ministry of Industry
- 3 Low-Emission Support Scheme (LESS) Award, 2020-2023
 - Central Utility Plants 1, 2, 3, 4 and Sriracha Power Plant
 - GHECO-ONE Co., Ltd.
 - GLOW IPP Co., Ltd.
 - GLOW Energy Plc, Phase 2
 - GLOW SPP 3 Co., Ltd.
 - GLOW SPP 11 Co., Ltd.
 by Thailand Greenhouse Gas Management Organization (Public Organization), TGO
- 4 Corporate Carbon Footprint Label, 2022
 - GPSC Group
- 5 Carbon Footprint Product Label, 2021-2024
 - 1 cu.m. of demineralized water / 1 MWh of electricity / 1 GJ of steam
 - Central Utility Plant 1
 - 1 cu.m. of demineralized water / 1 cu.m. of industrial water / 1 MWh of electricity / 1 GJ of steam
 - Central Utility Plant 2
 - 1 cu.m. of demineralized water / 1 GJ of steam
 - Central Utility Plant 3
- 6 Carbon Footprint Product Label, 2022-2025
 - 1 cu.m. of demineralized water / 1 MWh of electricity / 1 GJ of steam
 - Central Utility Plant 4
- 7 Carbon Footprint Product Label, 2021-2024
 - 1 MWh of electricity / 1 GJ of steam
 - Central Utility Plants 1, 2
- 8 Carbon Footprint Product Label, 2021-2024
 - 1 cu.m. of demineralized water
 - Central Utility Plant 3
 by Thailand Greenhouse Gas Management Organization (Public Organization), TGO
- 9 Water Footprint Labels, 2021-2024
 - 1 cu.m. of demineralized water / 1 MWh of electricity / 1 GJ of steam
 - Central Utility Plant 1
 - 1 cu.m. of demineralized water / 1 cu.m. of industrial water / 1 MWh of electricity / 1 GJ of steam
 - Central Utility Plant 2
 - 1 cu.m. of demineralized water / 1 GJ of steam
 - Central Utility Plant 3
 by Water and Environment Institute for Sustainability, Federation of Thai Industries
- 10 Thailand Voluntary Emission Reduction Program (T-VER), 2021
 - Central Utility Plants 2, 3, 4
 by Thailand Greenhouse Gas Management Organization (Public Organization), TGO
- 11 3Rs Award (a 3Rs and KAIZEN application project for efficiency improvement of industrial waste management prone to unlawful disposal), 2022
 - Central Utility Plant 4
 by Department of Industrial Works, Ministry of Industry
- 12 3Rs+ Award (Economic Returns), Gold Level, 2022
 - Central Utility Plant 4
 by Department of Industrial Works, Ministry of Industry
- 13 ECO Factory Plus Social Value (Gold+ Awards)
 - Central Utility Plant 1 (72140000125481)
 - Central Utility Plant 2 (10210006625530)
 by Department of Industrial Works, Ministry of Industry
- 14 EIA Monitoring Awards 2021 (Outstanding), 2021
 - Central Utility Plants 1, 4
 by Office of the Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment
- 15 Project on Compliance with EIA Measures 2021 (honorable mention)
 - Central Utility Plants 2, 3
 by Ministry of Natural Resources and Environment
 Remark* awards received in 2022
- 16 Zero Waste Achievement Award 2022 for a 3Rs and KAIZEN application project for efficiency improvement of industrial waste management prone to unlawful disposal, 2022
 - Integrated Waste Management Center, Rayong
 - Solar Farm Project in Wang Chan Valley
 by Thailand Greenhouse Gas Management Organization (Public Organization), TGO
- 17 ECO Factory, 2021-2024
 - Glow Energy Public Company Limited
 by Industrial Estate Authority of Thailand
- 18 Thailand Voluntary Emission Reduction Program (T-VER), 2022
 - Integrated Waste Management Center, Rayong
 - Solar Farm Project in Wang Chan Valley
 by Thailand Greenhouse Gas Management Organization (Public Organization), TGO



Business and Operation Results

1

Structure and Operations of Global Power Synergy Plc (GPSC Group)

GPSC engages primarily in the production and distribution of electricity, steam, industrial water, and public utilities. As of December 31, 2022, its committed equity capacities are detailed below:
















Product ⁽¹⁾ As of December 31, 2022	Total Capacity	
	Total	Commercial Operation
Electricity (MW)	7,227	6,316
Steam (T/h)	3,064	2,657
Industrial Water (cu.m./h)	7,026	7,026
Chilled Water (RT)	15,400	15,400

Remark: ⁽¹⁾ Units of power in megawatts (MW), steam in tons per hour (T/h), industrial water in cubic meters per hour (cu.m./h), and chilled water in refrigerated tons (RT).







Business Overview

- 
1 Xayaburi, Lao PDR
 Xayaburi Power Company Limited (XPCL)
- 
2 Vientienne, Lao PDR
 Nam Lik 1 Power Company Limited (NL1PC)
- 
3 Attapeu, Lao PDR
 Houay Ho Power Company Limited (HHPC)
- 
4 Suphan Buri
 Siam Solar Energy 1 Company Limited (SSE1)
 N.P.S. Stargroup Company Limited (NPS2)
- 
5 Kanchanaburi
 Siam Solar Energy 1 Company Limited (SSE1)
- 
6 Ayutthaya
 Bang Pa-In Cogeneration Company Limited (BIC-1, BIC-2)
- 
7 Ratchaburi
 Ratchaburi Power Company Limited (RPCL)
- 
8 Pathum Thani
 Nava Nakorn Electricity Generating Company Limited (NNEG)
- 
9 Bangkok
 Combined Heat and Power Producing Company Limited (CHPP)
- 
10 Sara Buri
 Glow Energy Solar PV Rooftop (Phase 1)
- 
11 Chanthaburi
 Combined Heat and Power Producing Company Limited (CHPP)
 EurisPlus Company Limited***
- 
12 Chon Buri
 GPSC Sriracha Power Plant
 Glow IPP Power Plant
 ERU Chonburi Clean Energy Company Limited (CCE)
 Electricity Generating Unit ERU (SCOD: 2025)*
- 
13 Phichit
 N.P.S. Stargroup Company Limited (NPS1)
 World X Change Asia Company Limited (WXA1, WXA2, WXA3)
- 
14 Lop Buri
 N.P.S. Stargroup Company Limited (NPS3)
- 
15 Khon Kaen
 P.P. Solar Company Limited (PPS1, PPS2, PPS3)



- 
16 Rayong
 Rayong Central Utility Plant (CUP-1, 2, 3 & 4)
 IRPC Clean Power Company Limited (IRPC-CP)
 Refuse-Derived Fuel Power Plant (RDF)
 Refuse-Derived Fuel (RDF) Power Plant
 GHECO-One Power Plant
 Glow Energy Phase 1 Plant
 Glow Energy Phase 2 Power Plant**
 Glow Energy Phase 4 Power Plant
 Glow Energy Phase 5 Power Plant
 Glow SPP2 / Glow SPP3 Power Plant (Phase 3)**
 Glow Energy CFB3 Power Plant
 Glow SPP 11 Phase 1 & Phase 3 Power Plant
 Glow SPP 11 Phase 2 Power Plant
 Glow Energy Solar Power Plant
 Glow Energy Solar PV Rooftop (Phase 2)
 NUOVO Energy Storage Unit Factory
- 
17 Maha Sarakham
 BoreePlus Company Limited***



18 Nakhon Ratchasima

Helios 1 Company Limited***
 Helios 2 Company Limited***
 Helios 3 Company Limited***
 Helios 4 Company Limited***



19 Sa Kaeo

Helios 5 Company Limited***



20 USA

24M 24M Technologies, Inc. (24M)

21 Taiwan



Sheng Yang Energy Company Limited (SYE)



CI Changfang Limited

CI Xidao Limited



22 India

Avaada Energy Private limited (AEPL)*
 (Solar Power Platform: COD 2018-2023)



23 China (Battery Business)

Anhui Axxiva New Energy Technology Co., Ltd. (AXXIVA)*
 (Start of Production (SOP): 2023)

* Under construction

** SPP Replacement Project

*** Under power sales proposal process according to the announcement of the Energy Regulatory Commission

Details of other investment and joint ventures in the power and other businesses of GPSC appear below:

1) GPSC operated gas-fired and other power plants are already commercially generating and distributing electricity and/or other utilities such as steam and industrial water:

- Gas-fired power plants:
 - Sriracha combined-cycle power plant, located in Si Racha district, Chon Buri province
 - Co generation power plants: Central Utility Plants (CUP-1-4), located in WHA Eastern Industrial Estate (Map Ta Phut), R.I.L. Industrial Estate, and Asia Industrial Estate, Rayong province.
- Other energy forms:
 - Rayong Waste-to-Energy (WTE) plant, located in Rayong province, consisting of two projects:
 1. Refuse-Derived Fuel (RDF), producing 300 tons of RDF per day, construction completed since 2018
 2. RDF power plant with a capacity of 9.8 MW, fired by RDF, with a Power Purchase Agreement (PPA) with the Provincial Electricity Authority (PEA). Commercial operation began on May 28, 2021

2) GPSC holds 99.83% shares in Glow Energy Public Company Limited (GLOW), which engages in power, steam and utilities generation and distribution from other energy forms as detailed below:

- Gas-fired and coal-fired power plants:
 - Glow IPP, located in WHA Chonburi Industrial Estate 1
 - GHECO-One, located in Map Ta Phut Industrial Estate
 - Glow Energy Phase 1 and 2, located in Map Ta Phut Industrial Estate
 - Glow Energy Phase 4, located in Map Ta Phut Industrial Estate

- Glow Energy Phase 5, located in Map Ta Phut Industrial Estate
- Glow Energy CFB 3, located in Map Ta Phut Industrial Estate
- Glow SPP 2/Glow SPP 3, located in Map Ta Phut Industrial Estate
- Glow SPP 11 Phase 1, located in Siam Eastern Industrial Park
- Glow SPP 11 Phase 2, located in Siam Eastern Industrial Park
- Glow SPP 11 Phase 3, located in Siam Eastern Industrial Park

- Renewable energy (renewables) and other energy-based power plants:
 - Glow Energy Solar, located in Asia Industrial Estate
 - Glow Energy Solar, under a private PPA
 - Houay Ho power plant, located in Attapeu province, Lao PDR
 - Chonburi Clean Energy, industrial waste-fired, located in WHA Chonburi Industrial Estate 1

3) GPSC wholly owns Global Renewable Synergy Company Limited (GRSC), which engages in power generation and distribution from renewable energy, consisting of:

- Avaada Energy Private Limited (AEPL), in which GRSC holds 42.93%. AEPL operates a solar power plant to distribute power to industrial customers and India's government agencies. As of December 31, 2022, AEPL commanded a total committed capacity of 4,634 MW, including commercial operation of 3,842 MW and 792 MW under construction, with a target of 11,000 MW in 2025.
- GPSC holds 25% shares through GRSC and Global Renewable Synergy Taiwan (GRSC TW) in CI Changfang Company Limited and CI Xidao Company Limited, which engage in the offshore wind power plant. The operation started in 2022 with a target to distribute power in full capacity of 595 MW in 2024.

4) GPSC holds 50% shares in Global Renewable Power Company Limited (GRP), which engages in renewable power generation and distribution, consisting of:

- N.P.S. Stargroup Company Limited (NPS), wholly owned by GRP, operating a ground-mounted solar farm with a total capacity of 18 MW.
- World X Change Asia Company Limited (WXA), wholly owned by GRP, operating a ground-mounted solar farm with a total capacity of 17.9 MW.
- P.P. Solar Company Limited (PPS), wholly owned by GRP, operating a ground-mounted solar farm with a total capacity of 3.6 MW.
- Global Renewable Power Operating Company Limited (GRPO), wholly owned by GRP, engaging in operation and maintenance of solar farms.
- Global Renewable Power One Company Limited (GRP1), wholly owned by GRP, as an investment arm in renewable energy in Taiwan. Today, GRP1 holds 90% shares in Sheng Yang Energy Company Limited, which engages in a solar power plant with a total capacity of 55.8 MW.

5) Domestic and overseas joint-venture power plants engaging in power generation and distribution, based on energy forms, consisting of:

- Gas-fueled power plants:
 - Ratchaburi Power Company Limited, in which GPSC holds 15% shares
 - IRPC Clean Power Company Limited (IRPC-CP), in which GPSC holds 51% shares
 - Nava Nakorn Electricity Generating Company Limited (NNEG), in which GPSC holds 30% shares
 - Bang Pa-In Cogeneration Company Limited (BIC), in which GPSC holds 25% shares
 - Combined Heat and Power Producing Company Limited (CHPP), wholly owned by GPSC
- Renewable power plants:
 - Thai Solar Renewable Company Limited (TSR), in which GPSC holds 40% shares. TSR wholly owns Siam Solar Energy 1 Company Limited (SSE1)

- Combined Heat and Power Producing Company Limited (CHPP), wholly owned by GPSC, engaging in a ground-mounted solar farm in collaboration with Chanthaburi's Shrimp Farmers Cooperative Limited and a solar power plant under a Private Power Purchase Agreement (PPPA).
- BoreePlus Company Limited, in which GPSC holds 51% shares, engaging in a wind power plant
- EurusPlus Company Limited, in which GPSC holds 51% shares, engaging in a wind power plant
- Helios 1 Company Limited (Helios1), in which GPSC holds 50% shares, engaging in a ground-mounted solar farm
- Helios 2 Company Limited (Helios2), in which GPSC holds 50% shares, engaging in a ground-mounted solar farm
- Helios 3 Company Limited (Helios3), in which GPSC holds 50% shares, engaging in a ground-mounted solar farm
- Helios 4 Company Limited (Helios4), in which GPSC holds 50% shares, engaging in a ground-mounted solar farm
- Helios 5 Company Limited (Helios5), in which GPSC holds 50% shares, engaging in a ground-mounted solar farm
- BoreePlus, EurusPlus, Helios1, Helios2, Helios3, Helios4, and Helios5 are under power sales proposals to the Energy Regulatory Commission (ERC) in line with the 2022 Feed-in-Tariff (FiT) renewable power sourcing plan for 2022-2030 for those without fuel cost. Awarding of the agreements is expected in the first quarter of 2023.
- Hydro power plants:
 - Natee Synergy Company Limited (NSC), wholly owned by GPSC. NSC holds 25% shares in Xayaburi Power Company Limited (XPCL)
 - Nam Lik 1 Power Company Limited (NL1PC), in which GPSC holds 40% shares.

6) GPSC's projects under construction are detailed below:

- Energy Recovery Unit (ERU), designed to serve as a public utility support unit for processes under Thai Oil Plc's Clean Fuel Project (CFP), with a capacity of 250 MW. ERU's main fuel is the oily liquid by-product of CFP's distillation. GPSC invested through Energy Recovery Unit Company Limited, a wholly owned subsidiary of GPSC. ERU will be transferred when construction is completed and win a Provisional Acceptance Certificate (PAC), expected in the third quarter of 2025.
- Glow Energy Plc's SPP Replacement Project will replace expiring firm-SPP cogeneration power plants between 2019 and 2025 according to ERC. EGAT approved six PPAs under Glow's three projects. The new production capacities consist of:
 - Glow Energy Phase 2, under SPP Replacement Project, is a gas-fired cogeneration power plant. The first unit with an installed capacity of 100 MW started commercial operation in November 2022, and the second unit with a power generation capacity of 200 MW and 460 tons/hour of steam started in January 2023. Each unit holds a PPA with EGAT, totaling 60 MW, and distributes the remaining power and steam to industrial customers in Map Ta Phut Industrial Estate.
 - Glow SPP2, with a capacity of 98 MW and 230 tons/hour of steam, supplies a total 60 MW of electricity to EGAT under two PPAs. It is set to commence commercial operations in 2024. Amid shifting economic factors, business circumstances, and the industrial landscape, GPSC has decreased the capacity of the project and reduced the number of machines from two to one per PPA. However, due to cutting-edge technology, Glow SPP 2 will be able to produce power and steam efficiently, contribute to the stability of the power and steam production network, and meet the power demand of EGAT and industrial customers in a suitable and ecofriendly manner.

- Glow SPP3, with a capacity of 96-120 MW and 150-300 tons/hour of steam under two PPAs with EGAT for 60 MW. GPSC currently requests a change in fuel from coal to natural gas, following GPSC's strategy and goal of carbon neutrality in 2050 and carbon net zero in 2060. ERC is expected to award the agreements by the first quarter of 2023.

7) Investment in the battery and related business, consisting of:

1. Operation and investment by GPSC

- 24M Technologies, Inc. of the USA, in which GPSC holds 14.17% in preferred shares. 24M engages in research and development (R&D) of batteries for energy storage for the industrial sector, especially power generation, transmission, and distribution systems for the enhanced security of power users. R&D of batteries has also been expanded for EVs.

2. GPSC holds 49% in Nuovo Plus Company Limited (NUOVO PLUS), a joint-venture company with Arun Plus Company Limited (ARUN PLUS), a subsidiary of PTT Plc (PTT). The investment projects are detailed below:

- Energy Storage Unit (ESU) factory, a battery factory using SemiSolid technology of 24M Technologies, Inc. (24M). This is the first of its kind in Thailand with an ESU capacity of 30 MWh per year, located on 12 rai in Map Ta Phut Industrial Estate, Rayong province. Construction was completed in the third quarter of 2021.
- GPSC Singapore Private Company Limited (GPSCSG), a subsidiary company wholly owned by NUOVO PLUS and preparing for international investment in new energy businesses. GPSCSG invested through its 10.31% shareholding in Anhui Axxiva New Energy Technology Company Limited (AXXIVA), manufacturing battery cells with a capacity of 1 GWh per year for electric vehicles (EVs) in China. The factory is under construction, due to be completed in 2023.

8) Other businesses in Thailand and other countries, totaling five companies:

- GPSC Treasury Center (GPSCCTC) Company Limited, a wholly owned subsidiary of GPSC, engaging in managing a Treasure Center (TC) and an International Business Center (IBC) for the Group's financial efficiency and future investment in foreign currencies and liquidity.
- Business Services Alliance Company Limited, a joint-venture company among PTT Group, engaging in service and administration of human resources for PTT Group's outsourcing. GPSC holds 25% of the preferred shares.
- Sarn Palung Social Enterprise Company Limited (SPSE), formed to support PTT's and PTT Group's social enterprises joining in the resolution of problems facing communities, society, and the environment while advocating hiring of local labor for sustainability. GPSC holds 10% shares here.
- GPSC International Holdings Limited (GPSCIH), wholly owned by GPSC, is located in Hong Kong SAR, People's Republic of China. GPSCIH is under a liquidation process.
- Eastern Fluid Transport Company Limited (EFT), in which Glow holds 15% shares, engaging in pipeline administration and services for product transmission through pipeline in Map Ta Phut Industrial Estate for maximum efficiency and safety. EFT plans future expansion to meet demand of growing industries in Map Ta Phut Industrial Estate and its vicinity in Rayong province.

1.1 Policy and Business Overview

GPSC is the Innovative Power and Smart Energy Flagship of PTT Group, committed to establishing energy and public utility security in support of domestic industrial growth, a crucial foundation of national growth and sustainable national development. It also pursues opportunities for investment in power projects in domestic and international markets to grow sustainably while developing energy storage technology, battery business and other New S-Curve businesses.

Moreover, GPSC expands its businesses to new forms of energy through innovation to support customers' demand while pursuing the Carbon Net Zero goal to become a leading global power company in innovation and sustainability, equipped with the following vision and mission statements.

1.1.1 Vision, Mission, Objective, and Strategy

Vision

A global leading innovative and sustainable power company

Mission

- Be a leader of the power and smart power businesses of PTT Group
- Generate long-term value addition for shareholders together with steady profit growth
- Deliver to customers reliable power and utilities through operational excellence
- Conduct business with community, social, and environmental responsibility
- Seek innovation in power and utility efficiency management through smart power

Target

To become one of the top three power generation companies in Southeast Asia with more than 50% of power generation from the green portfolio and with a goal for carbon neutrality in 2050 and carbon net zero in 2060.

Business Strategies

GPSC's 2022 strategies (2022-2030) serve the energy transition to clean-energy innovation, consisting of four main strategies: S1: Strengthen and Expand the Core; S2: Scale-Up Green Energy; S3: S-Curve & Batteries; and S4: Shift to Customer-Centric Solutions. It focuses on domestic and second-home countries, including India, Vietnam, and Taiwan and enabling Business Partnership, Financial Discipline, Technology and Digitalization, Sustainability, Agile & Resilient Organization, and Operational Excellence to enhance its sustainable business growth while respecting the environment and stakeholders to become a leading power company in Southeast Asia. The strategies are detailed below:

S1: STRENGTHEN AND EXPAND THE CORE

Promote robustness, skills, and excellence of operation and business in parallel with GPSC's business growth with emphasis on maximum shareholders' satisfaction and appreciation of their needs while fostering customers' confidence with operational excellence to upgrade safety, reliability, profitability and sustainability at international standards. To this end, GPSC relentlessly upgrades its people development and application of management standards as well as digital technology to drive and upgrade various aspects of operations. Our actions consist of subplans to help us achieve strategic goals.

Enablers are in place to promote the success of strategic implementation, namely an HR management structure, an operational excellence management system (OEMS), and digitalization. The S1 strategy also embraces customer-centric utility and development of the core business and adjacent businesses worldwide to meet shifting customers' needs amid energy transition. Three key segments are described below:

- (1) Customer relationship management (CRM): CRM focuses on identifying customers' obstacles or pain points through ongoing engagement with them so that GPSC may propose solutions. Digital analytic tools may find application in assessment and analysis of these.
- (2) Solution-focused: This means GPSC's efforts to create value for products to establish differentiation from its competitors, including analysis and management of energy in its production efficiency and reliability together with product distribution.
- (3) Departmental design and assignment of responsibility: Suitability for CRM needs to be spelled out for thorough coverage and maximum satisfaction.

S2: SCALE-UP GREEN ENERGY

This key strategy raises the proportion of clean energy development (solar, wind, and integrated renewables) with energy storage systems (ESSs). GPSC focuses its investment on Thailand and target countries where ongoing growth is likely under acceptable returns on investment and manageable risks. GPSC may respond to today's energy transition, valued around the world. GPSC strives to lower its carbon intensity in parallel with fostering its own growth, with a Net Zero emission target in future years.

S3: S-CURVE & BATTERIES

During current and imminent energy transition, battery and ESSs are widely accepted as key drivers of such transition, whether across the manufacturing and power sectors' supply chains or other electricity-fueled industries, including electric vehicle (EV) and other transportation.

GPSC values the feasibility study of the battery business and its value chain investment to accommodate EV industries according to Thailand's automotive industry and the energy storage system promotion policy, to promote storage of power derived from renewable energy. GPSC also invests in related businesses for future battery business growth in domestic and other regions, including India. Besides the battery business,

other potential New S-Curve businesses include the digital-energy business, hydrogen energy business, and Carbon Capture, Utilization & Storage (CCUS). We will be cooperating with PTT Group and leveraging skills and resource capability across our supply chains to create shared values.

S4: SHIFT TO CUSTOMER CENTRIC SOLUTIONS

This means mobilizing new energy business models through energy innovations to provide energy service to meet customers' various needs, including expense reduction, greater energy reliability, and capital venture service proposals. Customers here are in the commercial and industrial industries. Our solutions consist of the following:

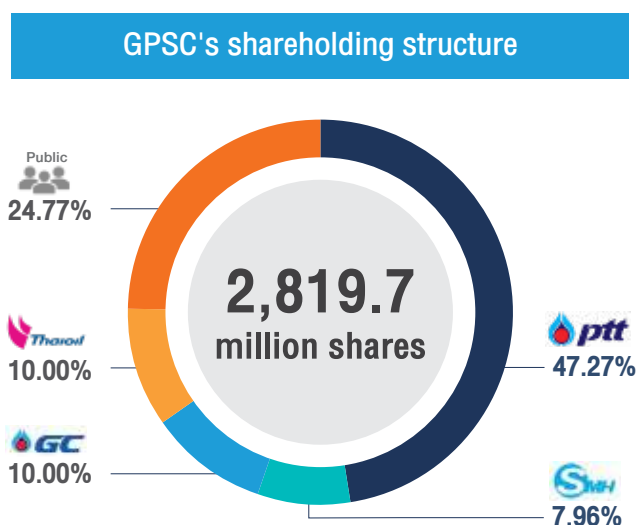
- (1) Distributed generation: This means installation of renewables power systems in customers' locations, including rooftops and microgrids, possibly by incorporating ESSs for greater reliability and efficiency. In addition, GPSC would look after their equipment and inspect energy consumption.
- (2) District cooling systems: Here, GPSC's services range from development, installation, management, to maintenance.
- (3) Energy management service: This means comprehensive energy management combining power generation from renewables, chilled water, ESS, and the application of digital systems to aid customers. Support could be provided remotely or through real-time monitoring to assure customers that they can always use energy most efficiently and problems can be promptly solved. This S4 strategy will be implemented in Thailand first.

1.1.2 Milestones

GPSC was registered on SET on May 18, 2015, with a registered capital of THB 14,983,008,000, comprising 1,498,300,800 shares at THB 10 per share. On October 9, 2019, GPSC completed allocation of newly issued common shares and completed the registration of the increase in paid-up capital to THB 28,197,293,670, representing 2,819,729,367 shares at THB 10 per share.

The shareholding structure after the increase is PTT Plc, 22.81%; PTT Global Chemical Plc, 22.73%; Thai Oil Plc, 8.91%; Thailoil Power Company Limited, 20.78%; and other shareholders, 24.77%. PTT's Board of Directors approved on August 20, 2020, the acquisition of 8.9% shares in GPSC from Thai Oil Plc and to restructure it for PTT's power business agility. The transaction was completed on December 3, 2020, giving PTT 31.70% shares in GPSC. Thai Oil Plc will hold the remaining shares of 20.78%. On April 22, 2021, PTT's Board approved a scheme by PTT and Siam Management Holding Company Limited (SMH), a PTT subsidiary, to acquire 358,936,756 shares or 12.73% of GPSC's shares from GC. After the transaction was completed on June 8, 2021, PTT and SMH held a total of 44.45% and GC held 10.00% of the shares.

PTT's Board of Directors approved on February 17, 2022, the acquisition of shares in GPSC to restructure PTT's power business. PTT and Siam Management Holding Company Limited (SMH), a PTT subsidiary, acquired 304,098,630 shares of 10.78% of GPSC's shares from Thailoil Power Company Limited (TOP). After the transaction was completed, PTT and SMH held a total of 55.23% shares, and TOP held 10.00% of the shares, as shown below:



Milestones, 2019-2022

Date	Milestones
2019	
April 1, 2019	GPSC purchased the Energy Recovery Unit (ERU), part of Clean Fuel Project (CFP) of Thai Oil Plc through Energy Recovery Unit Company Limited. The rights transfer over ERU will be achieved when the construction is completed and a Provisional Acceptance Certificate (PAC) is won, expected in 2025.
August 28, 2019	GPSC held an Extraordinary General Meeting of Shareholders (EGM) No. 1/2019 to request an approval to increase its registered capital of THB 13,214,285,710, made up of a new registered capital of THB 28,197,293,710 for common shares of up to 1,321,428,571 shares with a par value of THB 10 per share, totaling THB 13,214,285,710 in rights offering for existing shareholders. Each shareholder can subscribe to the newly issued shares over his/her rights at a ratio of one existing common share to 0.8819 new shares for an offered price of THB 56 per share. Later, GPSC completed its recapitalization plan for existing shareholders by THB 74,000 million on October, 9 2019. It allotted 1,321,428,567 common shares at THB 56 per share, resulting in a current total of 2,819,729,367 common shares.
November 8, 2019	GPSC issued six sets of bonds totaling THB 35,000 million to institutional investors and major investors at an average interest rate of 2.80% per annum. The rating given by TRIS Rating Company Limited (TRIS) of the bonds was AA-. The funds received, according to GPSC's financial restructuring plan, will repay short-term loans for the acquisition of Glow.
2020	
January 18, 2020	GPSC, with the cooperation of PTT Global Chemical Plc (GC), launched a smart energy storage system (ESS) with a capacity of 1.5 MWh. This storage is the largest system in the industrial sector of Thailand. It boosted security and stability of the power network system distributed to GC's Science & Technology Center building in Rayong province.
January 31, 2020	GPSC Treasury Center Company Limited (GPSC TC) was registered with the Ministry of Commerce with an initial paid-up capital of THB 20 million. GPSC wholly owns GPSC TC.
March 11, 2020	GPSC started construction of a prototype battery factory using the SemiSolid technology, the first ever in Thailand, located on 12 rai in Map Ta Phut Industrial Estate, Rayong province. The project value exceeded THB 1.1 billion.
March 26, 2020	GPSC successfully acquired all shares through Global Renewable Power Company Limited (GRP) in four companies: N.P.S. Stargroup Company Limited (N.P.S.), World X Change Asia Company Limited (World X Change Asia), P.P. Solar Company Limited (P.P. Solar), and TerraForm Global Operating (Thailand) Company Limited. Nine solar farm projects were developed by these companies with a total capacity of 39.5 MW.
June 1, 2020	Glow Hemaraj Wind Company Limited, in which GPSC held shares through Eastern Seaboard Clean Energy Company Limited, completed its liquidation.

Date	Milestones
July 14, 2020	Rayong Clean Energy Company Limited, in which GPSC held shares through Eastern Seaboard Clean Energy Company Limited, completed its liquidation.
August 7, 2020	GPSC offered environmental conservation bonds (Green Bonds), which are unsubordinated and unsecured debentures with specified holders, to institutional investors and major shareholders for a total of THB 5 billion. The funds received will be used on renewable-energy projects, including solar and waste-to-energy projects.
September 25, 2020	GPSC signed an MOU with Electric Vehicles (Thailand) Plc (EVT) to develop and experiment with prototype electric buses using SemiSolid technology battery to examine the efficiency of batteries used in these buses.
September 28, 2020	GPSC, through Combined Heat and Power Producing Company Limited (CHPP), entered an MOU with Suranaree University of Technology to build a solar power plant with a total capacity of about 6 MW at a budget of THB 150 million. The project aimed to create a low-carbon university to lower utility expenses of the university through a Private PPA. It is also intended to be a smart energy center of the Northeast for the public. Generation and distribution of power is expected from 2022 onward.
November 13, 2020	GPSC established Global Renewable Power One Co., Ltd. (GRP1) to accommodate its investment growth plan in a solar farm in Taiwan.
December 25, 2020	GPSC launched G-Cell batteries using SemiSolid technology, products of the Energy Storage Unit, Rayong province. Regular production started in the third quarter of 2021.
2021	
January 4, 2021	GPSC restructured its shareholding in Global Renewable Power Company Limited (GRP) by disposing of its 50% shares in GRP to PTT Global Management Company Limited (PTTGM), a PTT subsidiary. The transaction was completed on January 4, 2021, thus enabling GPSC to book GRP's performance as its share of profit from its investment in the associate.
February 9, 2021	GPSC established GPSC Singapore Pte. Ltd., Singapore, to invest in Anhui Axxiva New Energy Technology Company Limited (AXXIVA), People's Republic of China, with an investment value of about THB 500 million or 11.10% of AXXIVA's total equity interest. The fund mobilization was for its investment in a SemiSolid battery plant construction phase 1 in China with the knowhow of 24M Technologies Inc. (24M). Phase 1 plant commands 1 GWh per year to supply to its main customer group in the EV industry of that country, including Chery New Energy Automobile.
February 11, 2021	Through prestigious (S&P Global) assessment, GPSC was an outstanding business included in the Sustainability Yearbook 2021 with the second highest score of the Electric Utilities category in Thailand as a result of its maiden participation in the Dow Jones Sustainability Indices (DJSI).

Date	Milestones
February 24, 2021	In conjunction with PTT Oil and Retail Business Plc (OR), GPSC launched the G-Box Project, leveraging the 150-kWh Battery Energy Storage System (BESS) Project, which can scale up the G-Cell product of the SemiSolid technology in the future to improve energy management efficiency together with the EV station. Pilot-tested at PTT Station Nong Khaem, this energy innovation plays a key role in raising power consumption reliability, as it lowers energy costs and efficiently prevents brownouts or blackouts.
March 26, 2021	With Swap & Go Co., Ltd., GPSC signed an MOU on joint investigation and scaling-up of SemiSolid lithium-ion batteries (G-Cell). Production will start by the second quarter of 2021 from an ESS plant of GPSC in Map Ta Phut Industrial Estate, Rayong, for application to electric motorcycles through battery swapping (no need to wait for recharging).
April 29, 2021	GPSC signed an MOU with nine companies in the EV industry group to develop prototype batteries and a battery-swapping system that is a scaled-up version of GPSC's SemiSolid technology for installation in battery EVs (BEVs) of electric motorcycles, electric tuk-tuks, and EVs. Therefore, efficiency will improve in safety, heat exchange, and charging aspects. The technology will ease battery swapping in EV chargers at service stations.
May 18, 2021	GPSC signed an MOU on cooperation with Electrify Pte. Ltd. (Electrify) in development and installation of a peer-to-peer energy trading platform on the Cloud system in Thailand. The platform was installed together with GPSC's energy innovation solution, operated by CHPP (a wholly owned subsidiary) for customers in the energy technology trendsetter group. It was put to pilot tests in various areas. These represent energy innovation prototypes of decentralized energy, solar power generation, and ESSs that would expand to other potential areas.
May 25, 2021	Through CHPP, GPSC became a partner in the G-Float clean energy innovation development, pioneered in the New Normal model in Thailand. This floating solar PV innovation was ready for commercial implementation for industrial plants, customers in industrial estates, and government as well as private agencies. It was already successfully used in projects like the Smart City Project for VISTEC and installation of solar rooftops and floating solar PVs at Suranaree University of Technology. To elaborate, this is a combination of smart energy involving BESS, peer-to-peer energy trading, and AI for greater generating efficiency. Also included was cooperation with PTT Group in the installation of a 100-kW system floating solar-on-sea in a marine section of PTT Tank Terminal Company Limited in Rayong.
May 28, 2021	With a PPA secured with the Provincial Electricity Authority (PEA), the 9.8-MW RDF Project began commercial distribution as part of GPSC's integrated Rayong Waste to Energy Project.
May 28, 2021	Global Renewable Power One Company Limited (GRP1), an indirect associate where GPSC holds equal 50% shares with PTT Global Management Company Limited (PTTGM), fulfilled all its terms of the share trade agreement worth 90% of all shares in Sheng Yang Energy Company Limited. The value of the deal was THB 2.56 billion.

Date	Milestones
June 15, 2021	GPSC registered subsidiary Global Renewable Synergy Company Limited (GRSC) in Thailand, holding all of its shares in support of investment in renewables power plants in other countries.
June 16, 2021	Board Meeting No. 8/2021 approved GPSC TC's entry into a loan agreement with PTT Plc or PTT TCC, or both, for a long-term loan from shareholders under a limit of THB 20 billion in support of its investment in overseas renewables power plants. The deal was for up to three years with a market rate of up to 3% a year.
July 13, 2021	Through GRSC, a wholly owned subsidiary, GPSC reached an agreement to invest in Avaada Energy Pte. Ltd. (AEPL), a renewable energy business operator in India, with a total investment of about THB 14.825 billion, or about 41.6% of its capital. As of the acquisition date, AEPL had a total committed capacity of 3,744 MW, with a growth target of 11,000 MW by 2025. This investment was part of the plan to grow GPSC'S renewables portfolio.
July 14, 2021	GRSC, a wholly owned subsidiary, signed a joint-investment agreement with Copenhagen Infrastructures Partners (CIP) on behalf of the Copenhagen Infrastructure II K/S (CI-II) and Copenhagen Infrastructure III K/S (CI-III) for cooperation under an offshore wind power projects entitled Changfang and Xidao in Taiwan with a combined installed capacity of 595 MW. The project is expected to go entirely commercial by the first quarter of 2024, with investment worth USD 500 million to the end of the construction. GPSC subsequently formed Global Renewable Synergy Taiwan Co., Ltd. (GRSC TW) to assume 25% shares in this project. The share acquisition was completed on September 26, 2022.
July 19, 2021	GPSC inaugurated its SemiSolid G-Cell energy storage system plant, the first in Southeast Asia, with an initial capacity of 30 MWh/year under the US's 24M Technologies Incorporation's battery production innovation. GPSC had obtained a license for production and distribution of the system. The plant lies in Map Ta Phut Industrial Estate, Rayong.
October 18, 2021	GPSC signed an MOU with CHPP, EXIM BANK, Thailand Greenhouse Gas Management Organization (TGO), and Neoclean Energy Company Limited (NEO) to run a project supporting investment in solar rooftop systems together with carbon credit registration under the Solar Orchestra Project. The project supported Thai entrepreneurs' investment in solar rooftops and formalize them under the T-VER Project (Thailand's voluntary emission reduction) to obtain carbon credit for future trading.
October 21, 2021	GPSC proceeded with formal registration of a wholly owned subsidiary in Taiwan through GRSC, named Global Renewable Synergy Taiwan Company Limited (GRSC TW).

Date	Milestones
2022	
January 11, 2022	GPSC and Arun Plus Company Limited (ARUN PLUS) established Nuovo Plus Company Limited (NUOVO PLUS) for a feasibility study and investment supporting the battery value chain business with a registered capital THB 4.20 billion and a paid-up capital of THB 1.05 billion. GPSC holds 49% shares.
February 10, 2022	GPSC disposed of wholly-owned Ichinoseki Solar Power 1 GK (ISP1) to CES Iwate Taiyoko Hatsudensho GK, amounting to JPY 3,860 million or about THB 1,119 million.
February 28, 2022	GPSC transferred battery business-related assets currently operated by GPSC Group to NUOVO PLUS, consisting of assets, expenses, contracts, and obligations related to the Energy Storage Unit project, and 100% shares in a subsidiary company, GPSC-SG Holding Company, Singapore, which held 11.1% shares in Anhui Axxiva New Energy Technology Company Limited, People's Republic of China.
May 5, 2022	Nava Nakorn Electricity Generating Company Limited (NNEG), in which GPSC held 30% shares, plans to increase its power generation capacity by 30 MW and 5 tons/hour of steam with an investment fund of THB 1,724 million (70% from loans and 30% from shareholders). Construction will start in June 2023 and is expected to be completed for commercial operation by December 2024. By then, NNEG will command a total capacity of 215 MW and 45 tons/hour of steam.
August 24, 2022	GPSC established two subsidiary companies, namely UrusPlus Company Limited and BoreePlus Company Limited. Both companies will engage in feasibility studies and investment support for the renewable energy business in Thailand.
September 27, 2022	GPSC approved liquidation and close down two subsidiary companies, consisting of wholly-owned GPSC International Holdings Limited (GPSCIH) and Glow Energy Myanmar Company Limited, which GPSC directly and indirectly held 99.83% shares through GLOW.
November 22, 2022	GPSC approved establishment of NV Gotion Company Limited (NV Gotion), a joint-investment company in which NUOVO PLUS held 51% shares with Gotion Singapore Ptd. Ltd. (Gotion). This company imports, assembles, and sells battery modules, energy storage, and EVs. Premium lithium-ion battery will be on the market by 2023 with a production capacity of 1 GWh per year.
November 30, 2022	GPSC signed a joint-venture agreement with Copenhagen Infrastructure Partners (CIP) through CI NMF I Cooperatief U.A. (CI NMF I) to pursue wind power investment opportunities and set up a joint-investment company under the ERC invitation for those engaging in fuel cost-free operation in 2022, to bid for renewable energy Feed-in Tariff (FiT) 2022-2030. GPSC held 51% shares in the group.
December 13, 2022	GPSC established five subsidiary companies to propose for electricity sale according to an ERC announcement, namely Helios 1 Company Limited, Helios 2 Company Limited, Helios 3 Company Limited, Helios 4 Company Limited, Helios 5 Company Limited. GPSC held 50% shares in these.

1.1.3 Spending objectives of proceeds from fund mobilization

Funds derived from bond issuance

GPSC has developed a Green Finance Framework as guidance for Green Bond issuance for its environmental conservation. It also commissioned an external firm to provide a second-party opinion)

Green Finance Framework

1) Spending of Green Bond proceeds: GPSC will spend the proceeds as investment or refinancing, or both, in part of or the entire new or existing projects dealing with GPSC Group's environmental conservation, namely

- (a) Renewable energy: This includes investment in renewable-energy (renewables) businesses, either directly or indirectly (or both) by any entity of GPSC Group, including solar farms, wind power plants, and hydro power plants of the check weir type with up to 25 MW in capacity, domestic or overseas
- (b) Improved energy efficiency: This includes research and development, investment, and maintenance of assets to improve process efficiency and lower environmental impacts through technology. It also includes advocacy of the application of sustainable practices to upgrade and lower the impacts of operation across the value chain. Included are combined heat and power with district cooling power plants, energy storage systems (ESSs), waste to energy (WTE), development of energy management systems, which include energy management in buildings, smart grids, and smart meters.
- (c) Pollution prevention and control: This includes investment in development, operation, maintenance, and efficiency improvement to produce energy from biomass and waste, as

well as investment in the conversion of waste into energy, management of a circular economy, and efficient reduction of pollutant emission. Such reduction includes an integrated waste management (Waste to Energy, WTE), which consists of Refuse-Derived Fuel (RDF) and RDF power plant projects; investigation of battery recycling based on ESSs or EVs under the government's circular economy concept.

- (d) Clean energy-based transportation: This includes investment or expenditure, or both, for the production and usage of batteries strictly for EVs; investment and expenditure for EV charger stations, which embraces procurement, construction, development, or operation of an EV battery plant, or all of these.

2) Process for project evaluation and selection:

GPSC has formed a Green Finance Working Group to assess and select environmental conservation projects that are qualified under specifications for proceeds spending to ensure that these projects are duly qualified. On May 23, 2022, the Management Committee meeting endorsed the spending of proceeds derived from Green Bond issuance and sale on solar farm projects in India or wind power projects in Taiwan, or both.

3) Management of proceeds:

The net proceeds derived from Green Bond issuance under the Green Finance Framework will be managed with a portfolio approach under the oversight of the Green Finance Working Group and will be allocated to GPSC's qualified environmental conservation projects.

4) Reporting:

GPSC will report and disclose the spending data derived from Green Bond issuance within one year of the issuance and will prepare a report on fund mobilization for environmental conservation projects every year until the entire proceeds have been allocated. The reports will appear at <https://www.gpscgroup.com>.

GPSC issued the Green Bonds on June 10, 2022. The senior, unsecured debentures are proposed to institutional and/or major investors amounting to THB 12 billion as detailed below:

Application of Fund	Amount as of Dec. 31, 2022 (Unit: THB Million)	Period	Description
1. Investment capital	7,944	One month	Solar and wind power projects in India and Taiwan
2. Refinance	4,056	Within two years from the debentures' issuance date (or by June 2024)	
Total	12,000		

Governing Law

These bonds are governed and interpreted by Thai Law.

1.1.4 Obligations shown in the prospectus and/or conditions of the office (if any) and/or condition of securities receivable of SET (if any)

- None-

1.1.5 Company Information

COMPANY NAME	: Global Power Synergy Public Company Limited
SECURITY NAME	: GPSC
HEAD OFFICE ADDRESS	: 555/2 Energy Complex Building B, 5th Floor, Vibhavadi Rangsit Road, Chatuchak Sub-District, Chatuchak District, Bangkok 10900
TYPE OF BUSINESS	: Company operates as a power, steam, and utilities producer and distributor. In addition, the company invests in other companies that generate and distribute power, steam, utilities, and New S-Curve business: batteries and smart energy, including related businesses, both domestic and overseas.
BUSINESS REGISTRATION NUMBER	: 0107557000411
TELEPHONE	: 0-2140-4600
FAX	: 0-2140-4601
WEBSITE	: www.gpscgroup.com
REGISTERED CAPITAL	: THB 28,197,293,710 as of December 31, 2021, comprising 2,819,729,367 common shares, with a par value of THB 10 per share, paid-up capital at THB 28,197,293,670.

1.2 NATURE OF BUSINESS OPERATIONS

GPSC business operations are detailed below:

1.2.1 Revenue Structure

The Company's bulk of revenue comprised revenue from sales of electricity, steam, industrial water, revenue from financial lease, and dividend income from Ratchaburi Power Co., Ltd.:

Product /Service	Operated by	For the period ending December 31					
		2020		2021		2022	
		Revenue (Million THB)	%	Revenue (Million THB)	%	Revenue (Million THB)	%
Sales and Service Revenue							
Electricity	IPPs	15,092	21%	17,558	22%	41,724	33%
	SPPs	38,100	54%	39,975	51%	56,918	45%
	VSPPs	615	1%	418	1%	244	0.2%
	Total	53,807	76%	57,951	74%	98,885	78%
Steam	SPPs	13,906	20%	15,032	19%	22,660	18%
	Total	13,906	20%	15,032	19%	22,660	18%
Industrial water/ chilled water	IPPs	20	0%	-	0%	(2)	0%
	SPPs	676	1%	725	1%	765	1%
	VSPPs	193	0%	182	0.2%	203	0.2%
	Total	889	1%	907	1%	966	1%
Services	SPPs	-	0%	-	0%	9	0%
	VSPPs	37	0%	89	0%	396	0.3%
	Total	37	0%	89	0.1%	405	0.3%
RDF waste fuel	RDF	6	0%	-	0%	-	0%
	Total	6	0%	-	0%	-	0%
Nitrogen	GPSC	112	0%	157	0.2%	167	0.1%
	Total	112	0%	157	0.2%	167	0.1%
Total Sales and Service Revenue		68,757	97%	74,136	95%	123,083	97%
Revenue from Financial Leases							
Financial leases in power plants	IPPs	821	1%	737	1%	602	0%
Total Revenue from Financial Leases		821	1%	737	1%	602	0%
Other Revenue							
Dividend	GPSC	396	1%	256	0.3%	192	0.2%
Other revenue	GPSC	1,009	1%	3,019	4%	2,539	2%
Total other revenue		1,405	2%	3,275	4%	2,731	2%
Total Revenue		70,983	100%	78,148	100%	126,416	100%

1.2.2 Product information

1) Characteristics of Products, Services and Innovation Development

Characteristics of Core Products

- **Electricity** is a form of energy derived from primary energy, such as natural gas to generate other types of energy, for instance, heat and mechanical energy for the manufacturing processes of industrial, commercial, and utilities. Electricity is distributed via transmission lines, which serve as conductors in bringing electricity to customers to different locations and different voltage levels, for example, 230 kV, 115 kV, and 22 kV. However, the quality and stability of power generation and transmission are crucial for product value, so GPSC designed production units, production administration, and connectivity of transmission systems for the flexibility of production management and transmission to serve all circumstances.
- **Steam** is a form of heat energy produced by using the residual heat from electricity generation to produce steam. Direct fuel combustion is sometimes used in steam production. In this regard, steam distributed to customers is of various pressure levels and temperatures, depending on customers' requirements. GPSC designed production units, production administration, and connectivity of the distribution system for the flexibility of production management and distribution for customers' satisfaction.
- **Chilled water** is the water used as a medium for exchanging cooling energy in air-conditioning systems or production processes. GPSC offers to serve customers' needs for technical, temperature and stability levels as well as business solutions.
- **Other utilities:** GPSC offers One-Stop Utility Services and is a solution provider to serve customers' various requirements. Other utilities consisted of:
 - Industrial water is the processed water of required standards, for instance, clarified water and demineralized water. Both are part of the electricity generation process and are distributed

to customers for manufacturing processes.

- Nitrogen is inert gas with the chemical formula 'N₂', in a liquid state at -196 degrees Celsius. GPSC procures and distributes nitrogen to industrial customers via transmission lines.

Innovation Development

Under its 4S strategies, GPSC relentlessly developed various innovations related to batteries through Nuovo Plus Company Limited (NUOVO PLUS). NUOVO PLUS scaled up the development with 24M Technology Inc. by investing in the construction of a battery factory with SemiSolid technology, the first of its kind in Southeast Asia. It also invested in Anhui Axxiva New Energy Technology Co., Ltd. in China and collaborated with PTT Group (PTTINI and VISTEC), as well as engaging in the development of the energy business and the future business model, gearing toward New S-Curve businesses to accommodate energy transition, especially for the battery and the energy storage system (ESS). Detailed strategies have been prepared for batteries under three main applications:

- (1) ESS, looking at opportunities in commercial and industrial customers, including grid connections in each location, particularly Thailand and India. In addition, GPSC plans to increase its capability of the system, software, and the source of battery supply for business potential.
- (2) Non-Electric Vehicle (non-EV Mobility), focusing on local customers using public transportation, for example, E-Buses, E-Tuk Tuks, and E-Forklift. Moreover, GPSC will improve its capability for assembling battery packs, while developing relationships with reliable suppliers.
- (3) EV passenger cars, focusing on battery production for private EVs. However, GPSC considers investing with experts and reliable partners while leveraging its own technology and knowhow as part of the production process or investing in other EV battery manufacturers, targeting those in Thailand and the People's Republic of China. Moreover, GPSC plans to improve its capability for technology, marketing, finance, and risk management. GPSC's projects related to battery innovation consist of:

- **Energy Storage Business:** ESS installation of 1.5 MWh for PTT Global Chemical Plc (GC) at GC's office in Rayong to facilitate production management and co-utilize electricity with gas engines to enhance effectiveness and reduce electricity expenses
- **Battery Manufacturing:** GPSC, through NUOVO PLUS, invested in the construction of a pilot plant to produce lithium-ion batteries, using the SemiSolid technology. The Company obtained a manufacturing license from 24M Technologies Inc. (24M) with an initial capacity of 30 MWh/Year. The plant is in Map Ta Phut Industrial Estate, Rayong. Construction was completed for battery production in the third quarter of 2021. Since GPSC is aware of the importance of R&D in battery technology, it has recruited research personnel and formed collaboration within PTT Group and with external parties to jointly develop research projects to enhance business potential for process improvement and product development. Meanwhile, GPSC, through NUOVO PLUS, has acquired shares in Anhui Axxiva New Energy Technology Co., Ltd., in the People's Republic of China. Under construction is a SemiSolid battery factory, phase 1, using 24M technology, with 1 GWh per year to accommodate EV industries in China.
- **New Energy:** GPSC's strategy is for CHPP, a wholly owned subsidiary, to be a leader in new-energy businesses through energy innovation by being a Smart Energy Solution Provider from the design, consultation and production administration to power storage to quickly respond to customers' needs. Several projects in the new energy of CHPP are successful, such as a PPA with Suranaree University of Technology, Nakhon Ratchasima, to install solar rooftops, floating solar panels and ESS to distribute electricity on the university's premises as well as installing energy management software to simulate peer-to-peer power purchase scenarios, which are the same technology and usage as the pilot model at Vidyasirimedhi Institute of Science and Technology (VISTEC), a PTT Group sandbox, to further develop into an electricity business model

of the future. Moreover, GPSC signed an MoU with SC Asset Corporation Public Company Limited (SC Asset) to develop clean energy innovation and a power management system, enhancing a new electricity business model. The modern energy technology and the electricity management system will be applied to developing areas to enhance energy management efficiency.

Investment Privileges

GPSC and subsidiaries earned investment promotion privileges under the Investment Promotion Act B.E. 2520 (1977) upon approval of the Board of Investment Office, with certain conditions. These privileges are described below:

- (A) A permission to take ownership in the land to operate the promoted business as the Board of Investment deems appropriate.
- (B) An exemption on import duty for machinery, raw materials or essential materials imported to produce goods for domestic distribution as the Board of Investment deems appropriate.
- (C) An exemption on the corporate income tax on the net profit from the commencement of revenue recognition. If an entity incurs a loss during such period, the amount can be deducted from the net profit incurred for no less than five years after the passing of such time limit.
- (C)*An exemption on the corporate income tax for the net profit generated from operating promoted businesses for the proportion of 50% of the investment capital to improve production efficiency, not including land and three-year working capital, from the commencement of revenue generation after obtaining the promotion certificate. If an entity incurs a loss during such period, the amount can be deducted from the net profit incurred for no less than five years after the passing of such time limit.
- (D) An exemption on using the dividend received from the promoted business to calculate income tax during the period that the corporate income tax exemption takes effect.

- (E) An exemption on the corporate income tax for the net profit of 50% of the normal rate for five years after the passing of the corporate income tax exemption period as stated in (C).
- (F) A permission to deduct two times of the transportation costs, electricity and water expenses for a period of 10 years, from the commencement of revenue recognition in such business.
- (G) A permission to deduct 25% of the investment capital in the installation or construction of facilities, apart from the depreciation expense as usual.
- (H) An exemption on import duty for goods imported for re-export, or production for export for a period of one year from the first import.

GPSC companies that earned these investment privileges are:

Company	Permit Grant Date	Commencement of Revenue Recognition	Number of Years for Income Tax Exemption	Privilege Eligibility
Global Power Synergy Plc				
Central Utility Plant - 1 Phase 1-2	February 2005	June 2006	8	(B) to (G)
Central Utility Plant - 1 Phase 3	October 2006	June 2007	8	(B) to (G)
Central Utility Plant - 1 Phase 4	January 2008	May 2008	8	(B) to (G)
Central Utility Plant - 1 Phase 5	September 2008	July 2009	8	(B) to (G)
Central Utility Plant - 1 Phase 6	January 2009	December 2009	8	(B) to (G)
Central Utility Plant - 2	September 2007	May 2008	8	(B) to (D)
Central Utility Plant - 3	January 2009	July 2009	8	(B) to (G)
Central Utility Plant - 4	August 2018	September 2019	4	(B) to (D)
RDF Fuel Production Plant	October 2017	May 2018	8	(B) to (E)
RDF Waste Power Plant	June 2019	Not yet redeemed	8	(B) to (E)
Sri Racha Power Plant	December 2010	May 2011	8	(B) to (D)
Battery Plant (Transferred to Nuovo Plus)	August 2018	Not yet redeemed	8	(B) to (E), (H)
Solar Rooftop Project - GC Glycol	July 2020	Not yet redeemed	8	(B) to (D)
EECi Solar Farm	July 2021	Not yet redeemed	8	(B) to (D)
GC5 Floating Solar Farm	September 2021	Not yet redeemed	8	(B) to (D)
EECi microgrid	February 2022	Not yet redeemed	8	(B) to (D)
Combined Heat & Power Producing Co., Ltd.				
Solar Farm Project	September 2016	December 2016	8	(B) to (D)
Solar Rooftop Project – Thai Oil	December 2019	Not yet redeemed	8	(B) to (D)
Solar Rooftop Project – VISTEC	December 2019	May 2020	8	(B) to (D)
Solar Rooftop Project and Floating Solar – VISTEC	May 2020	Not yet redeemed	8	(B) to (D)
IRPC Clean Power Co., Ltd.	April 2014	June 2015	8	(B) to (G)

Company	Permit Grant Date	Commencement of Revenue Recognition	Number of Years for Income Tax Exemption	Privilege Eligibility
Glow Energy Plc				
Phase 1 Project	July 1994	May 1995	8	(A) to (G)
Phase 2 Project	June 1995	January 1996	8	(A) to (G)
Phase 2 Project (SPP Replacement)	September 2021	November 2022	4	(B) to (D)
Extended Project Phase 1	March 2004	July 2004	8	(A) to (G)
Extended Project Phase 2	August 2004	September 2005	8	(A) to (G)
CFB 3	June 2007	November 2010	8	(A) to (G)
Phase 1 Project	November 2007	-	-	(A) to (B)
Phase 5 Project	February 2009	March 2011	8	(A) to (G)
Glow Solar	August 2012	August 2012	8	(B) to (G)
Glow Solar Rooftop – Michelin	May 2018	November 2018	8	(B) to (D)
Glow Solar Rooftop – Continental	May 2018	February 2019	8	(B) to (D)
Glow Solar Rooftop – Holiday Inn	June 2019	December 2019	8	(B) to (D)
Glow Solar Rooftop – Indorama	July 2020	June 2022	8	(B) to (D)
Glow Solar Rooftop – NSP	June 2020	July 2021	8	(B) to (D)
Glow Solar Rooftop – Suez	July 2020	September 2021	8	(B) to (D)
Glow Co., Ltd.	September 2003	-	-	(A)
Glow SPP 2 Co., Ltd.	November 1996	August 1997	8	(A) to (G)
Glow SPP 2 (SPP Replacement)	October 2022	Not yet redeemed		(B) to (D)
Glow SPP 3 Co., Ltd.	August 1997	August 1999	8	(A) to (G)
Glow IPP Co., Ltd.	November 1999	January 2003	8	(A) to (D)
Solar Rooftop Project - GIPP Remarks: Promotion Certificate No. 1525/2542 was terminated and replaced by Promotion Certificate No.63-0111-1-04-1-0	January 2020	August 2021	3	(B), (C)*, (D)
GHECO-1 Co., Ltd.	July 2008	November 2011	8	(B) to (G)
Glow SPP 11 Co., Ltd.				
Phase 1	March 1999	September 2000	8	(A) to (G)
Phase 2	July 2013	November 2012	8	(B) to (G)
Phase 3	July 2013	October 2006	8	(B) to (G)
Phase 3 (extended)	September 2014	April 2015	8	(B) to (G)

2) Market and Competition

Distribution and Target Customers

Distribution

Electricity and steam are core products which must be distributed immediately to customers, so the distribution system is critical. The system must be equipped with readiness and high reliability for distribution. And because we value this matter, our electricity transmission system has been designed separately for each customer to control the usage and safety system for individual customers for electricity distribution from the generators with the same standard voltage level as regulated by EGAT, PEA and MEA with transformers at substations. The electric current will then be transmitted through transmission lines via trading meters to the electric current systems of EGAT, PEA, MEA and industrial customers. Furthermore, the locations of our power plants are critical to the product distribution system since they must be located in the industrial estate where customers' plants are located and where steam, chilled water and industrial water are in demand for processes. We therefore distribute the products via the pipeline system that has been designed with extra insulation to minimize energy loss to the external environment.

Our key customers fall into two main groups by product utilization:

1) Distribution to EGAT, PEA and MEA

Under Thailand's electricity system structure, EGAT is the accountable party for generating, procuring and distributing electricity to PEA and MEA, which in turn distribute electricity to the industrial sector and the public. The three entities need to ensure sufficient procurement to accommodate the domestic demand. Electricity generation by EGAT alone is not sufficient, so these entities need to purchase electricity from private power producers via these 3 types of PPAs:

- Independent Power Producer: IPP
- Small Power Producer: SPP
- Very Small Power Producer: VSPP.

GPSC and investment companies sell electricity to EGAT, PEA and MEA via the three types of PPAs. Selling power to EGAT has also granted the Company additional electricity via the backup PPA, which strengthens the reliability of the power generation system for power plants.

2) Direct Distribution to Industrial Customers

Apart from distributing electricity to EGAT, GPSC distributes electricity to industrial customers and producers of fundamental utilities: electricity, steam, chilled water and industrial water. GPSC values the reliability and continuity of distribution and determines standard pricing that can be benchmarked against other producers in the market. Most of our industrial customers are in the petrochemical sector. Besides, GPSC distributes nitrogen to companies in PTT Group as a fully integrated service provider.

Electricity Pricing

The National Energy Policy Council (NEPC) has specified an electricity pricing structure for Thailand to reflect costs at different times of the day, whereby the power purchase rate varies with the electricity rate structure, categorized by type of power producers:

1) Electricity Pricing of Independent Power Producer: IPP

The PPA of an IPP is generally governed by two parts of the pricing structure as follows:

The first part is the availability payment (AP), a premium that EGAT pays power plants monthly to maintain the availability level regardless of the actual electricity units purchased by EGAT. The AP is made up of:

- APR1: The compensation that EGAT pays the Company for the construction cost, as well as the debt burden and the capacity cost.
- APR2: The compensation that EGAT pays the Company for fixed costs in machine operation and maintenance (Fixed O&M).

The second part is the energy payment (EP) that IPPs use to determine the price by taking variable production costs into account.

2) Electricity Pricing of Small Power Producer: SPP

The electricity pricing for SPPs depends on the types of fuel and agreement:

2.1) Firm Agreement Pricing: The firm agreement is the PPA that specifies the amount of electricity capacity to supply to EGAT through the entire contract period, which is five years or more. The pricing structure of this agreement is made up of:

- Capacity Payment: CP, which is based on the investment cost for power plants that EGAT can avoid in the future (Long-Run Avoided Capacity Cost) by purchasing the capacity.
- Energy Payment: EP, based on the fuel cost used in electricity generation that EGAT can avoid in the future. (Long-Run Avoided Energy Cost)
- Fuel Saving: This revenue will be granted when fuel consumption falls below the standard amount regulated by EGAT. Moreover, EGAT will purchase electricity in the amount of capacity specified in the PPA and a fine will be applied if it fails to do so.

2.2) Non-firm Agreement Pricing: The non-firm agreement is the PPA that is valid for less than five years. This type of agreement will not be entitled to a capacity payment (CP) but only the energy payment (EP), based on the fuel cost used in electricity generation, operating cost and power plant maintenance cost that EGAT can avoid in the short-term period (Short-Run Avoided Energy Cost), which differs from season to season. Hence, the price in a non-firm agreement, specifically the EP, will be multiplied by a K factor as announced by EGAT. The pricing of a non-firm agreement is generally lower than that of a firm agreement. So in purchasing electricity from a renewable-energy power plant or for an FiT power purchase, an adder will be applied, according to the announcement of PEA or MEA.

3) Electricity Pricing of Very Small Power Producer: VSPP

Very small power producers (VSPPs) are electricity producers who supply no more than 10 MW of electricity to PEA or MEA as agreed, whereby the power purchase rate is equivalent to the cost of wholesale electricity at the voltage that VSPPs connect to the electricity system, combined with the electricity cost according to the average wholesale Ft rate. For the purchase of electricity from a renewable-energy power plant, or FiT power purchase, an adder will be applied, according to ERC's announcement.

Power Purchase Rate of Industrial Customers

Most industrial customers are industrial plants, with whom GPSC has entered a long-term PPA with reference to the selling price based on PEA's rates. The Ft rate is usually adjusted in line with fuel costs, while for some customers it has been agreed that the electricity cost is subject to fuel costs such as natural gas.

A long-term agreement will be signed between GPSC and the industrial customers who receive electricity from Rooftops or Floating Solar. Pricing is either fixed through the agreement period or referenced to PEA.

Pricing of Steam and Industrial Water

The selling prices of steam and industrial water to industrial customers are based on the energy raw materials used in production, as well as other production costs, with a margin added on top (cost-plus), to serve as the pricing formula that relies on a cost variable to reflect the actual production cost, including investment, variable cost, operation and maintenance cost. Regarding the investment in the distribution system that has been arranged for each individual customer, the energy loss in the distribution system will be calculated separately to account for differences in the quantity distributed and customers' locations, with different outcomes in the investment capital required for the system. For general pricing conditions, GPSC's Board of Directors has identified the criteria and principles for standard products' selling prices to ensure fairness and transparency in distributing products to both inter-related customers and other customers.

Competition Landscape

GPSC commands long-standing proficiency and experience in power generation and steam production, enhanced by secure power transmission systems together with extensive grid systems and customer-centric management to deliver public utilities suiting customers' needs, customer stewardship, and guaranteed distribution security through agreement periods in parallel with GPSC's sustainable growth policy with emphasis on innovation development. In short, our strength and competitiveness remain even during greater market competition with a handful of players and GPSC's long-term agreements with customers.

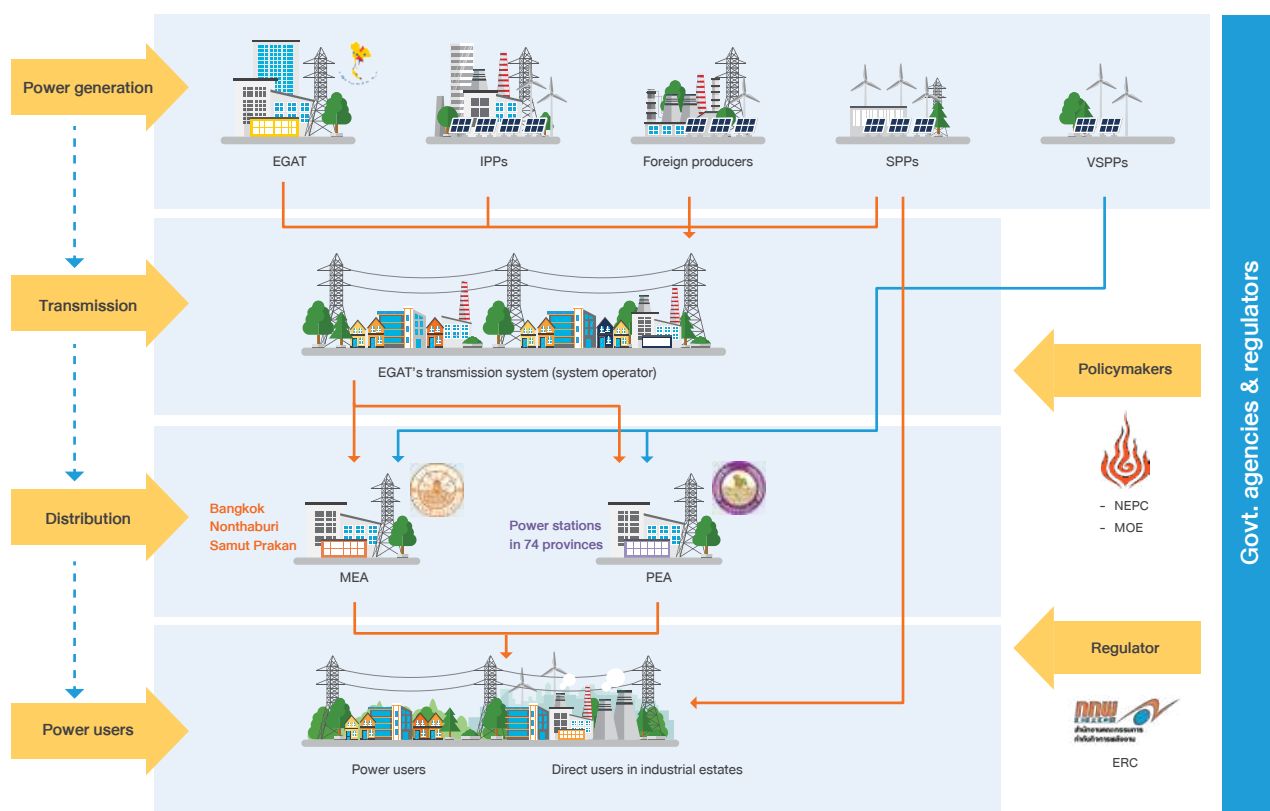
GPSC is blessed with lower costs than its competitors because of its economies of scale of power generation and steam production, aided by international-standard efficiency and reliability in addition to its ability to operate with multiple fuels. This advantage of ours also applies to the idea of customers in industrial estates producing their own public utilities.

Solar Rooftop and Floating Solar have become more competitive this year because players from both outside and inside industrial estates are allowed to bid. GPSC's strengths are its security of the power transmission system with extensive grid systems and customer stewardship.

Electricity Industries in Thailand

1. General

Thailand operates on the Enhanced Single-Buyer Model (ESB). To elaborate, EGAT is both the producer and the buyer of electricity supplied to the grid by independent power producers (IPPs, meaning those producing more than 90 MW), small power producers (SPPs, meaning those producing 10-90 MW), and imported electricity. EGAT owns the national transmission system, with the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA) distributing and purchasing electricity from very small power producers (VSPPs, meaning those producing less than 10 MW). Regulators consist of the National Energy Policy Council (NEPC, the policymakers) and ERC.

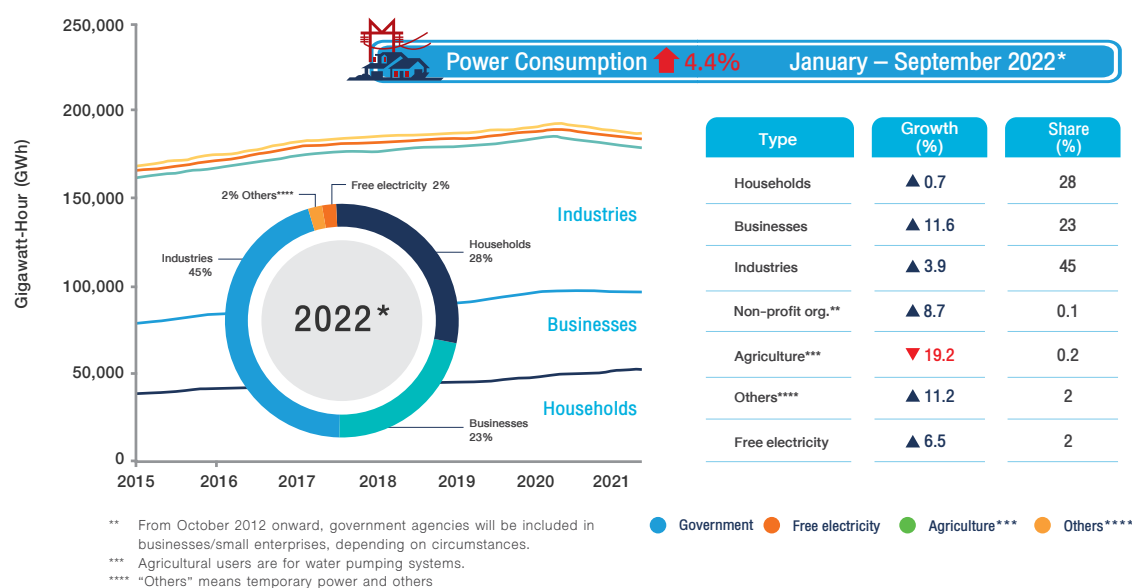


Source: Electricity Generating Authority of Thailand

2. Consumption overview 2022

As of September 2022, Thailand commanded a total generating capacity of 52,805 MW (excluding IPSs), with electrical power demand standing at 149,972 GWh, about 4.4% over the same month of 2021, 2020, and 2019. Accounting for this was the recovery of economy

in all sectors after Covid-19. The Thai economy grew 3.1% in the first nine months of 2022, resulting in the return of power demand. The 2022 system peak demand was seen on April 28 at 14.30 hours, registering 33,177 MW and eclipsing the previous high in 2021 by 6.9% (excluding IPSs).



Source: Energy Policy and Planning Office, Ministry of Energy

3. Outlook for the National Energy Plan and amendment to Thailand Power Development Plan (PDP 2022)

Today, the National Energy Policy and Planning Office (EPPO) is in the process of developing the National Energy Plan, which will combine five energy subplans (PDP, AEDP, EEP, Gas Plan, and Oil Plan), the enforcement of which should begin in 2023. The plan is to be made compatible with the energy transition from fossil fuels to clean energy as well as various innovations to sustain this transition and help Thailand achieve its targeted carbon neutrality by 2050 and finally the Net Zero Emissions by 2065 which reflects energy development policy direction, spelled out below:

- (1) Increase power generation and consumption from new sources of renewable energy to account for more than 50%, in parallel with the battery storage system, focusing on solar and wind energy.
- (2) Promote clean energy EVs.

- (3) Raise energy management efficiency by over 30% by applying modern energy management technology and management innovation.
- (4) Restructure the energy business to accommodate energy transition under the 4D1E approach: decarbonization, digitalization, decentralization, deregulation, and electrification.

In addition, the power sector faces challenges in the application of innovation and technology to develop renewables power plants to raise their production efficiency, environmental friendliness, and cost reduction to become competitive with fossil fuels in the long run. It is believed, therefore, that in the future the public policy will allow more private power generation. Private producers would manage private PPAs and promote prosumers (notably solar power generation, whose costs have now been slashed) and promote smart ESSs to grow the capability of renewable energy. With the anticipated greater role of renewable energy in the proportion of power generation, PDP 2022 is

likely to feature LOLE (a planning principle based on the likelihood of blackouts), replacing the reserve margin approach, which cannot analyze the uncertainty of renewable energy. Such replacement would lend greater accuracy to the assessment and planning for the security of Thailand's power system.

4. Calculation Guidelines for calculating gas prices for power generation under the Energy Pool Price (EPP) concept of ERC

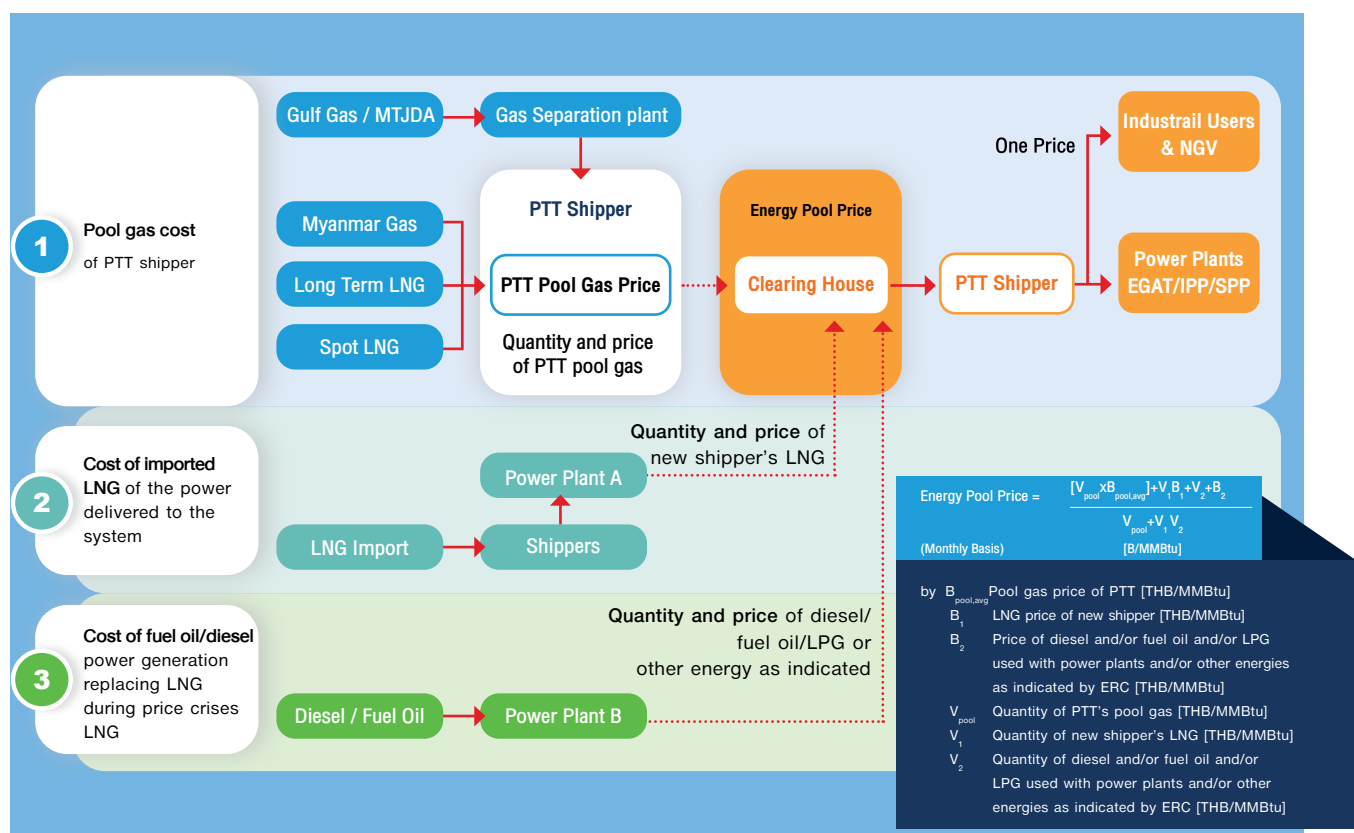
To promote long-term development and competitiveness of the natural gas business, ERC considered amending the regulations that pose problems and obstacles as detailed below:

- 1) Support fair competition between current and new shippers, justifiable for LNG sourcing efficiency while reflecting the same average pricing structure to accommodate rising demand for LNG accompanying the decline of gas fields in the Gulf of Thailand.

- 2) Natural gas price structure under the business competition guidelines phase 2:

- Inequality of gas pricing between current and new shippers, resulting in higher power prices once new shippers import LNG, which is more costly than Gulf gas (regulated market).
- Fuel oil/diesel prices rather than more costly LNG prices are used in calculating the power generation cost. Power consumers consequently bear the burden of gas users in other business sectors. Therefore, energy pricing should be introduced in the form of pool pricing during energy price crises in the best interests of the country and all users.

A new natural gas pricing mechanism (energy pool pricing) of the regulated market must be introduced, whereby the cost of overall energy in Thailand must be considered to avoid overburdening certain groups of users.



3) Procurement of Products and Services

GPSC commands production and distribution procedures for products and services, categorized by each subsidiary as follows:

Fossil Fuel Power Plants (Conventional Power Plants)

1. Global Power Synergy Plc (The Company)

GPSC generates and distributes electricity to EGAT and industrial customers, with a total capacity of 1,103 MW. It also provides utility services, producing and distributing steam and industrial water to industrial customers in nearby areas, with a total steam production capacity of about 1,480 tons per hour, industrial water production capacity of 2,080 cubic meters per hours and chilled water capacity of about 12,000 refrigerated tons. Our power plants and central utility plants are listed below.

1) Sri Racha Power Plant

Sri Racha Power Plant is under the power purchase project from a major IPP with a total capacity of 700 MW. It lies in Thung Sukhala sub-district, Si Racha district, Chon Buri. The total amount of electricity generated is sold to EGAT under a 25-year PPA, starting from its commercial operation on August 15, 2000. The agreement will end in 2025, and electricity generation for distribution varies with the conditions and demand by EGAT.

Production Processes

Sri Racha Power Plant is a combined-cycle power plant using gas as the main fuel and diesel as the secondary fuel, comprising two sets of gas turbine generators (GTGs) of 235 MW and two sets of heat recovery steam generators (HRSGs) and one set of steam turbine (ST) to drive a set of steam turbine generators (STGs) of 240 MW.

Raw-Material Sourcing

Sri Racha Power Plant uses gas as the main fuel in electricity generation. It entered a 25-year gas purchase agreement with PTT Plc, ending in 2025 for an IPP gas price, and a diesel purchase agreement with Thai Oil Plc (TOP) to use as a secondary fuel, as well as a 25-year raw water purchase agreement with Eastern Water Resources Development and Management Plc (EW), ending in 2025. Besides, Sri Racha Power Plant entered a PPA with EGAT for 10 MW on an annual basis and a 25-year backup PPA with Thai Oil Power (TP) for 1 MW, ending in 2025, for use as reserve power during maintenance.

Distribution

Sri Racha Power Plant generates and distributes the entire amount of electricity to EGAT under the IPP-PPA. With reference to conditions of this PPA, it is EGAT's right to determine the amount of electricity purchased through a long-term power purchase plan on an annual and a monthly basis, and a short-term power purchase plan on a daily basis. The plant must notify the availability in electricity generation to EGAT on a long-term and short-term basis, whereby the availability payment (AP) is the compensation that EGAT pays Sri Racha Power Plant for maintaining electricity generation availability regardless of the amount of electricity distributed to EGAT. The availability payment is made up of:

- APR1: The compensation that EGAT pays the Company for plant construction costs, debt burden and capacity cost.
- APR2: The compensation that EGAT pays the Company for fixed costs in machine operation and maintenance (Fixed O&M).

Sri Racha Power Plant will receive the AP revenue based upon the availability notified by the plant itself and under power purchase conditions. Besides, it is eligible for the energy payment (EP) from the actual electricity generation based on EGAT's dispatch instruction, whereby EGAT has the contractual right to call for a termination of electricity generation or not to produce at full capacity, while EGAT is still required to pay AP to Sri Racha Power Plant based on availability.

2) Rayong Central Utility Plant (CUP)

Rayong Central Utility Plant is a producer of electricity, steam and industrial water for industrial customers within PTT Group and industrial customers in general. It also distributes electricity to EGAT to maintain its balancing load between electricity and steam generation in case of industrial customers' high demand for steam, leading to the ramped-up electricity generation to yield enough steam to accommodate such demand. The excess electricity will then be distributed to EGAT under a non-firm SPP PPA. Therefore, distributing a portion of electricity to EGAT not only serves to enhance effectiveness, but also increases reliability for industrial customers and facilitates their business expansion in the future. Currently, there are four Central Utility Plants in Rayong:

2.1 Central Utility Plant 1: CUP-1

CUP-1 commands a generating capacity of about 226 MW, steam generating capacity of 890 tons per hour and industrial water production capacity of 720 cubic meters per hour. It is in WHA Eastern Industrial Estate (Map Ta Phut) in Rayong. It distributes electricity, steam and industrial water to industrial customers and EGAT, and it has begun commercial operation in 2006. CUP-1 has entered a Demineralized Water Purchase Agreement with WHA Eastern Industrial Estate (Map Ta Phut) No.1 in 2019 and No.2 in 2020 to enhance the potential and water resource reliability.

Production Processes

CUP-1 is a cogeneration power plant, using natural gas as its fuel, consisting of six GTGs of 37.6 MW and six HRSGs of 70 tons per hour. Each set of equipment also has a supplementary burner that can produce steam at 70 tons per hour and an auxiliary boiler with a capacity of 50 tons per hour.

Raw-Material Sourcing

CUP-1 uses natural gas as fuel, with a five-year gas purchase agreement with PTT ending in 2026, and the right to use water under a land purchase agreement with WHA Eastern Industrial Estate (Map Ta Phut). Furthermore, CUP-1 entered a one-year backup PPA of 57 MW with PEA with an automatic renewal if the contract is not terminated otherwise.

2.2 Central Utility Plant 2: CUP-2

CUP-2 is located near Rayong Industrial Land (RIL), Rayong province, with a total capacity of about 113 MW, steam generating capacity of 170 tons per hour and industrial water production capacity of about 510 cubic meters per hour. It distributes electricity, steam and industrial water mainly to industrial customers and distributes excess electricity to EGAT under a non-firm SPP PPA. CUP-2 began commercial operation in 2008.

Production Processes

CUP-2 is a cogeneration power plant using gas as its fuel, consisting of two GTGs of 37.6 MW and two HRSGs of 70 tons per hour each. Each set of equipment also has a supplementary burner that can produce additional steam of 70 tons per hour, which will be distributed to industrial customers. The remaining steam is passed through the steam turbines to drive a steam turbine generator (STG) of 38 MW to reduce the steam pressure to a medium level before distributing it to customers. Also, steam is produced from an auxiliary boiler of 50 tons per hour.

Raw-Material Sourcing

CUP-2 uses natural gas as fuel, with a 15-year gas purchase agreement with PTT ending in 2023. A 15-year raw water purchase agreement with RIL Industrial Estate, ending in 2022, is under extension. Moreover, the Company entered a one-year backup PPA of 37.5 MW with EGAT with an automatic renewal if the contract is not terminated otherwise.

2.3 Central Utility Plant 3: CUP-3

CUP-3 is in WHA Eastern Industrial Estate (Map Ta Phut), Rayong province, with a steam generating capacity of 280 tons per hour and industrial water production capacity of about 770 cubic meters per hour. The main equipment is made up of two auxiliary boilers of 70 tons per hour and one auxiliary boiler of 140 tons per hour, together with a demineralized water production system. CUP-3 has commercially operated since 2009 with the installation of an STG of 15 MW in 2019 to maintain steam and electricity generating reliability to allow maximum production optimization.

Raw-Material Sourcing

CUP-3 uses natural gas as steam generating fuel, with a 15-year gas purchase agreement with PTT ending in 2024 and a 15-year industrial water purchase agreement with WHA Eastern Industrial Estate (Map Ta Phut) ending in 2023.

2.4 Central Utility Plant 4: CUP-4

CUP-4 is in Asia Industrial Estate (AIE), Rayong province. This investment aligns with the Company's strategy for expanding its production capacity to accommodate industrial growth within Asia Industrial Estate and nearby industrial estates now and in the future. The investment also strengthens the potential of the production system and distribution network among all CUPs.

Production Processes

CUP-4 is a cogeneration power plant, consisting of a GTG of 49 MW and a HRSG of 70 tons per hour, with a supplementary burner that can produce additional steam of 70 tons per hour. CUP-4 has a network that connects electricity and steam distribution to customers and with CUP-1.

Raw-Material Sourcing

CUP-4 entered a 15-year natural gas purchase agreement with PTT ending in 2034 and a 15-year clarified water purchase agreement with GC Estate ending in 2034.

Distribution for CUP-1, CUP-3 and CUP-4

The Company has engaged in an electricity, steam and industrial water purchase agreement with industrial customers in WHA Eastern Industrial Estate (Map Ta Phut), Asia Industrial Estate (AIE) and nearby industrial estates. Besides, it entered a non-firm SPP PPA with EGAT of 40 MW with a contract period of five years, with an automatic renewal of five years for each renewal from the date when the Company started generating electricity for delivery to EGAT's system.

The electricity and steam distribution systems for CUP-1 and CUP-3, and CUP-1 and CUP-4, have been designed to connect with one another (Power and

Steam Distribution Tie-up) to enhance production effectiveness and maintain balance and backup capacity for one another. CUP-4 has undergone commercial operation since the third quarter of 2019, enabling the Company's electricity and steam network to be more reliable, leading to a more effective plant optimization.

2. Glow Energy Plc (GLOW)

GLOW operates as a major IPP and an SPP. Its core business is electricity generation for EGAT as well as production of steam, processed water and chilled water to supply to industrial customers in Map Ta Phut Industrial Estate, nearby industrial estates and Siam Eastern Industrial Park in Pluak Daeng, Rayong, and others. The total attributable electricity generating capacity is about 2,758 MW, steam generating capacity of 1,232 tons per hour, chilled water capacity of about 3,400 refrigerated tons and processed water capacity of about 4,946 cubic meters per hour. Industrial customers usually have utility purchase agreements with a contract period of 10-20 years whereas the PPA with EGAT is usually valid for 21-30 years. GLOW's power plants both in Thailand and overseas consist of:

1) Glow IPP Power Plant (GIPP)

Glow IPP Power Plant is a combined-cycle plant using natural gas as a principal fuel and diesel as a secondary fuel. It has the same generating procedure as that of Sri Racha Power Plant, and it has conducted commercial operation since January 2003. It operates as a major IPP, generating and distributing the entire production to EGAT, with an electricity generating capacity of 713 MW.

2) Glow Energy Power Plant Phase 2

Glow Energy Power Plant Phase 2 is a combined-cycle gas-fired cogeneration power plant. It commenced commercial operation in April 1996. The construction of SPP replacement power plant is completed with commercial operation of Unit 1 commencing on November 29, 2022 and that of Unit 2 is expected in

January 2023. The SPP replacement power plant has a capacity of 200 MW and a steam generating capacity of 460 tons per hour. Electricity of 60 MW capacity is distributed to EGAT, while the remaining capacity is distributed to industrial customers in Map Ta Phut Industrial Estate.

3) Glow Energy Power Plant Phase 4

Glow Energy Power Plant Phase 4 is a gas-fired cogeneration power plant located in Map Ta Phut Industrial Estate. It commenced commercial operation in January 2005 with a generating capacity of 77 MW and a steam generating capacity of 137 tons per hour, a clarified water and demineralized water production capacity of 1,500 and 550 cubic meters per hour. All electricity generated is distributed to EGAT while steam, clarified water and demineralized water are distributed to industrial customers in Map Ta Phut Industrial Estate and nearby industrial estates.

4) Glow Energy Power Plant Phase 5

Glow Energy Power Plant Phase 5 is in the same area as Glow SPP 3 Power Plant in Map Ta Phut Industrial Estate. This plant is equipped with a gas turbine, heat recovery steam generator and a steam turbine, with a maximum electricity generating capacity of 328 MW. The electricity and the steam generated are distributed through GLOW's transmission lines. This plant is considered a larger combined-cycle and steam power plant than GLOW's other combined-cycle and steam power plants. Given the scale and effectiveness of Glow Energy Power Plant Phase 5, this plant can operate its base load unit while other smaller combined-cycle and steam power plants operate only to generate electricity to EGAT, subsequently enabling balance in the amount of electricity and steam distributed to industrial customers. This power plant commenced commercial operation in September 2011.

5) GHECO-ONE Power Plant

GHECO-ONE Power Plant is in Map Ta Phut Industrial Estate. It is a coal-fired power plant with a total capacity of 660 MW.

Production Processes

GHECO-ONE Power Plant has been designed and operated under an international standard, using bituminous coal, which is a high-quality coal with low sulfur contents as the project's principal fuel. The coal is imported from Indonesia and will be conveyed from a coal pile yard using a closed system conveyor to temporarily store them before finely pulverizing it and then injecting it to combine with air in the pulverized coal-fired boiler (PC boiler) that generates steam with a temperature of 566 degrees Celsius and a pressure of 242 bars. The coal is then transmitted into the steam turbine generator to generate electricity.

Distribution

GHECO-ONE Power Plant operates as an IPP, generating and distributing electricity to EGAT. It commenced commercial operation in July 2012.

6) Glow Energy CFB3 Power Plant

Glow Energy CFB3 Power Plant is a coal-fired power plant that commenced commercial operation in November 2010. It is equipped with a circulating fluidized bed boiler and a steam turbine generator. It is in the same area as Glow SPP3 Power Plant in Map Ta Phut Industrial Estate. This plant has been designed for an electricity generating capacity of 85 MW, steam generating capacity of 79 tons per hour, or an electricity generating capacity of 115 MW without steam generation. Electricity and steam are distributed to industrial customers in Map Ta Phut Industrial Estate.

7) Glow SPP2 / Glow SPP3 Power Plant (Phase 3)

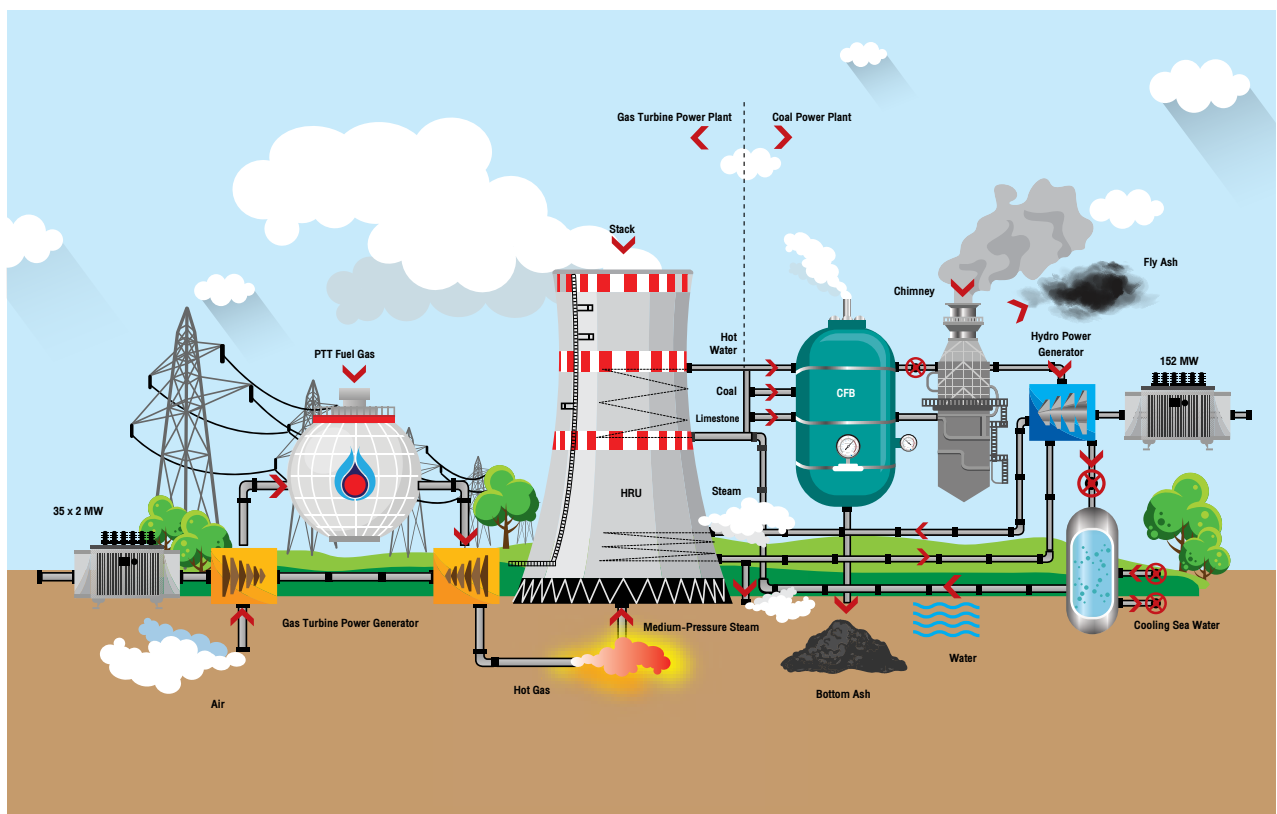
Glow SPP2 and Glow SPP3 Power Plants are hybrid natural gas and coal-fired combined-cycle cogeneration facilities located in Map Ta Phut Industrial Estate. They commenced commercial operation in March 1999. Glow SPP2 and Glow SPP3 Power Plants are considered the same facility. Now, SPP Replacement is under construction.

Production Processes

Glow SPP2 and Glow SPP3 Power Plants are separated into (1) Glow SPP2 Co., Ltd. with two gas turbines and a capacity of about 35 MW and two heat recovery units and (2) Glow SPP3 Co., Ltd., a coal-fired power plant with two units of combined-cycle gas and coal-fired generators (hybrid cycle unit) of 222 MW. Each unit is made up of a steam turbine, two gas turbines with a capacity of about 35 MW, two heat recovery units and a circulating fluidized bed boiler. Glow SPP2 and Glow SPP3 Power Plants have a combined generating capacity of 513 MW, steam generating capacity of 190 tons per hour and demineralized water production capacity of 150 cubic meters per hour.

Glow SPP2 and Glow SPP3 are combined-cycle gas and coal-fired power plants (hybrid cycle cogeneration). They use a gas turbine and a steam turbine in generating electricity and use a CFB boiler (Circulating Fluidized Bed Boiler) to generate steam, which is different from the Company's other power plants that mainly use natural gas. Instead, Glow SPP2 / Glow SPP3 Power Plants use both coal and natural gas as fuels. Even though the electricity-generating cycle at these plants is different from those at general power plants, the machinery and equipment used are of international standards for leading electricity generating firms. The Company has incorporated hybrid facility technology to increase the use of coal fuel, which is less costly, and to reduce the use of natural gas as the principal fuel in production.

The following diagram illustrates the combined-cycle natural gas and coal-fired electricity generation (Hybrid Electricity Generation Process) of Glow SPP2 / Glow SPP3 Power Plants.



Distribution

The electricity generated from Glow SPP2 / Glow SPP3 Power Plants is distributed to EGAT and industrial customers in Map Ta Phut Industrial Estate, while steam and processed water are also distributed to industrial customers in the estate and nearby industrial estates.

8) Glow SPP11 Power Plant Project 1

Glow SPP11 Power Plant Project 1 is a gas-fired cogeneration power plant located in Siam Eastern Industrial Park. It commenced commercial operation in October 2000

Production Processes

This power plant is equipped with two gas turbines, one steam turbine, one absorption chiller and one backup electric chiller, with an electricity generating capacity of 120 MW and a chilled-water capacity of 2,200 tons of refrigeration.

Distribution

The electricity generated from this power plant is distributed to EGAT, while the electricity and chilled water are distributed to industrial customers in Siam Eastern Industrial Park via the Company's transmission lines and chilled-water pipeline network.

9) Glow SPP11 Power Plant Project 2

Glow SPP11 Power Plant Project 2 is a gas-fired cogeneration power plant located in Siam Eastern Industrial Park. The power plant commenced commercial operation in December 2012

Production Processes

This power plant is equipped with two gas turbines, one absorption chiller and one electric chiller to enhance the production capacity and increase the effectiveness of gas turbines. The plant's electricity generating capacity is 110 MW, with a chilled water production capacity of 1,200 tons of refrigeration.

Distribution

The power plant distributes electricity to EGAT and the remaining capacity (both electricity and chilled water) to industrial customers in Siam Eastern Industrial Park via power transmission lines and chilled-water pipelines.

10) Glow SPP11 Power Plant Project 3

Glow SPP11 Power Plant Project 3 is equipped with four gas-fired engines. It is located near Glow SPP11, with a total production capacity of 23 MW. The four generators were installed, and the power plant commenced commercial operation in October 2006.

11) Glow SPP11 Power Plant Project 3 (Extension)

Glow SPP11 Power Plant Project 3 (Extension) is equipped with two gas-fired engines. It is located near Glow SPP11 with a total capacity of 19 MW. The two generators were installed, and the power plant commenced commercial operation in April 2015.

Glow's Raw-Material Sourcing

Key raw materials for electricity and steam generation for Glow are natural gas and coal, except for Houay Ho Power Plant, a hydro power plant; a solar power plant in Asia Industrial Estate; and Chonburi Clean Energy Power Plant, an industrial waste power plant.

Natural Gas

Glow has entered 10 gas purchase agreements with PTT, grouped into:

- A gas purchase agreement for an IPP
- A gas purchase agreement for an SPP
- A gas purchase agreement for a cogeneration power plant
- A gas purchase agreement for an industrial customer.

Power Plant	Period (Year)	Ending
1. Glow IPP	25	2028
2. Glow Energy Power Plant Phase 2 (Replacement)	25	2047
3. Glow Energy Power Plant Phase 4	25	2037
4. Glow Energy Power Plant Phase 5	5	2026
5. Glow SPP2 / Glow SPP3 Power Plant (Phase 3)	25	2024
6. Glow SPP2 (Replacement)	25	2049
7. Glow SPP 11 Phase 1	25	2025
8. Glow SPP 11 Phase 2	25	2037
9. Glow SPP 11 Phase 3	4	2025
10. Glow SPP 11 Phase 3 (Extension)	4	2025

Coal

Coal is used as fuel for CFB1, CFB2 Power Plants of Glow SPP3 Co., Ltd., CFB3 Power Plant of Glow and GHECO-ONE Power Plant, with a total coal purchase volume (measured by total mass) of 3.6, 3.2, and 3.7 million tons (data as of December 2022) in 2020, 2021 and 2022. In 2023, the Company purchases coal through a medium-term and long-term coal purchase agreements with domestic and international coal suppliers.

Coal is priced in US dollars, comprising the coal price (FOB) and freight rate. The coal cost for GHECO-ONE Power Plant is passed on to EGAT at an agreed heat rate. However, for cogeneration plants, Glow's product prices partially reflect the coal cost, so changes in the coal price affect Glow's profitability, since Glow cannot push its freight cost burden to EGAT under the PPA and to industrial customers purchasing electricity and steam.

Diesel

Diesel is a secondary fuel for GTGs in generating electricity for an IPP. Glow does not have any issues in procuring diesel because its plants are located near Rayong Refinery and Star Refinery, both located in industrial estates, and near PTT's oil depot in Si Racha district, Chon Buri. Under a PPA with an IPP, Glow IPP Co., Ltd. is required to allocate sufficient diesel reserve for electricity generation for three days as specified in the agreement. For GHECO-ONE Power Plant, diesel is used only to get the machine up and running, so Glow does not need to prepare diesel reserve as required of an IPP.

Because of the world energy price crisis, LNG price is much higher than diesel. EGAT therefore ordered Sri Racha Power Plant and Glow IPP to run the machines on diesel to ease the country's electricity price impact under government policy.

Raw Water and Other Utilities

GHECO-ONE Power Plant, Glow Energy Power Plant and Glow SPP2/Glow SPP3 Power Plants are in Map Ta Phut Industrial Estate, owned and operated by the Industrial Estate Authority of Thailand (IEAT). IEAT is a state enterprise under the control and supervision of the Ministry of Industry, established under the Industrial Estate Authority of Thailand Act B.E.2522. IEAT as a government enterprise is responsible for acquiring infrastructure and utilities (raw water and waste treatment system, etc.) for entrepreneurs in Map Ta Phut Industrial Estate. Therefore, it is responsible for procuring water and utilities for Glow's power plants.

Seawater used as cooling water is transported via an underground pipeline from the port to the condenser for process use before getting transported back to the sea via a drainage canal. Meanwhile, clean and demineralized water used in production are produced by Glow's water treatment plant.

Glow IPP Power Plant is in an industrial estate, owned and operated by WHA, which is responsible for procuring key utilities such as raw water, a waste treatment system, telephone system, and other central utilities for Glow's power plants. Apart from the utility expenses, Glow pays WHA monthly fees for central utility management and maintenance within the industrial estate, which get adjusted occasionally.

Glow SPP11 Power Plant Project 1, Project 2, and Project 3 are in Siam Eastern Industrial Park, which has its own wastewater treatment system and other utilities, with Eastern Water Resources Development and Management Plc as the procurer of raw water.

Other Raw Materials

Glow uses a small amount of limestone (sourced domestically) in coal power plants and uses different chemicals in conditioning raw water to become clean and demineralized water. These chemicals include aluminum sulfate, sodium hydroxide, sodium hydrochloride, saline and trisodium phosphate.

3. Ratchaburi Power Co., Ltd. (RPCL)

RPCL is an IPP with a total capacity of 1,400 MW, with two production units of 700 MW capacity each. It lies in Damnoen Saduak district, Ratchaburi. It distributes the entire production to EGAT under a 25-year PPA from the date when the power plant commenced electricity generation for EGAT's system: March 1, 2008 for Unit 1 and June 1, 2008 for Unit 2. The agreement, whereby electricity generation complies with EGAT's conditions and operation orders, will remain valid until 2033.

Production Processes

RPCL is a combined-cycle power plant using natural gas as a principal fuel and diesel as a secondary fuel. It employs the same electricity generation procedures as Sri Racha Power Plant's. RPCL has two sets of GTGs of 245 MW for each production unit, an HRSG, and one set of STGs of 275 MW for each production unit.

Raw-Material Sourcing

RPCL uses natural gas as fuel under a 25-year PPA with PTT, ending in 2033, for an IPP gas price, whereby RPCL can pass on the energy payment to EGAT. In case PTT is unable to supply natural gas as agreed, and EGAT orders RPCL to operate with the secondary fuel, EGAT will compensate the increase in fuel cost for RPCL. RPCL has entered a high-speed diesel purchase agreement with SUSCO and PTT (Secondary Fuel Agreement: SFA) to use it as a secondary fuel if natural gas is unavailable. Both agreements are valid for five years, ending in 2026.

Distribution

RPCL generates and distributes its entire production to EGAT under a PPA for an IPP. The agreement empowers EGAT to determine the power purchase volume via a long-term (annual and monthly) power purchase plan and the short-term (daily) plan, whereby RPCL must notify its availability to EGAT both on the long-term and short-term bases. The AP is the compensation that EGAT pays RPCL for maintaining the generating availability regardless of the amount of electricity distributed to EGAT. In the meantime, RPCL will receive the AP revenue based on its availability

notified and under the PPA. Besides, RPCL will receive the EP revenue from the actual amount of electricity generated as commanded by EGAT although EGAT is contractually entitled to order a termination of electricity generation or withholding of the maximum capacity. EGAT is still required to pay AP to RPCL based on its availability.

4. Combined Heat and Power Producing Co., Ltd. (CHPP)

CHPP is a VSPP with an installed capacity of about 5 MW and a chilled-water capacity of about 12,000 tons of refrigeration. It is located at the Chaengwatthana Government Complex, Bangkok (The Government Complex). It has a non-firm PPA with MEA and distributes cooling energy for the air-conditioning system for the Government Complex buildings.

Production Processes

CHPP is a combined heat and power with a district cooling power plant. It commenced commercial operation in 2009. Its chilled-water production processes are described below:

1. Chilled-water production from heat obtained from power generation, with two units of absorption chillers of 1,500 tons of refrigeration.
2. Chilled-water production with electricity, with three units of electric chillers of 2,000 tons of refrigeration and three units of electric chillers of 1,000 tons of refrigeration.

Raw-Material Sourcing

CHPP uses electricity to produce chilled water due to the expiry of its natural gas purchase agreement with PTT.

Distribution

CHPP distributes electricity to MEA, and it entered a 5-year non-firm PPA on April 23, 2009. The agreement is renewed automatically every five years until the agreement is terminated. The remaining electricity generates the cooling energy to distribute to the Government Complex for its air-conditioning system. The Company entered a 30-year cooling energy purchase agreement with Dhanarak Asset Development Co., Ltd., ending in 2038.

5. Bang Pa-In Cogeneration Co., Ltd. Project 1 (BIC-1)

BIC-1 is an SPP with a power generating capacity of about 117 MW and a steam generating capacity of about 20 tons per hour. It is in Bang Pa-In Industrial Estate, Bang Pa-In district, Phra Nakhon Sri Ayutthaya. It distributes electricity under a firm-SPP PPA mainly to EGAT, amounting to 90 MW, and distributes a portion of electricity and steam to industrial customers in Bang Pa-In Industrial Estate.

Production Processes

BIC-1 is a cogeneration plant using natural gas as fuel. It is equipped with two sets of GTGs to run the generator, whereby the exhaust from the gas turbine will be used to transfer heat to the water to generate steam with two sets of HRSGs. It will then pass through the steam turbines and run the STGs. The remaining steam will then be distributed to industrial customers.

Raw-Material Sourcing

BIC-1 uses natural gas as its production fuel. It has entered a 25-year gas purchase agreement with PTT, ending in 2038.

Distribution

BIC-1 distributes electricity to EGAT under a 25-year firm-SPP PPA for 90 MW, from the commencement of electricity generation into EGAT's system in 2013. The agreement will remain valid until 2038, and the remaining electricity will be distributed to industrial customers in Bang Pa-In Industrial Estate on long-term PPAs, with contractual periods of about 15 years. The Company also entered steam and processed water purchase agreements with industrial customers in Bang Pa-In Industrial Estate.

6. Bang Pa-In Cogeneration Co., Ltd. Project 2 (BIC- 2)

BIC-2 is an SPP with an electricity generating capacity of 117 MW and a steam generating capacity of about 20 tons per hour. It is in Bang Pa-In Industrial Estate, Bang Pa-In, Phra Nakhon Sri Ayutthaya. It distributes electricity under the firm-SPP, mainly to EGAT for 90 MW, and a portion of electricity and steam to industrial customers in Bang Pa-In Industrial Estate.

Production Processes

BIC-2 is a cogeneration power plant using natural gas as production fuel. It is equipped with two sets of GTGs to run the generators, whereby the exhaust from the gas turbine transfers heat to the water to generate steam with two sets of HRSGs. It will then pass through steam turbines and run the STGs. The remaining steam is then distributed to industrial customers.

Raw-Material Sourcing

BIC-2 uses natural gas as its production fuel. It has entered a 25-year gas purchase agreement with PTT, ending in 2042.

Distribution

BIC-2 distributes electricity to EGAT under a 25-year firm-SPP PPA for 90 MW from the commencement of electricity generation into EGAT's system in 2017. The agreement will remain valid until 2042, and the remaining electricity is distributed to industrial customers in Bang Pa-In Industrial Estate on long-term PPAs, with a contractual period of about 15 years. The Company also entered a steam and processed-water agreement with industrial customers in Bang Pa-In Industrial Estate.

7. Nava Nakorn Electricity Generating Co., Ltd. (NNEG)

NNEG is an SPP with a total electricity generating capacity of about 215 MW and a steam generating capacity of about 45 tons per hour. The commercial operation power generating capacity is 185 MW with a steam generating capacity of 40 tons per hour. The investment plan of an expansion phase of the electricity generating capacity of 30 MW and the steam generating capacity of 5 tons per hour is under consideration. NNEG is in Nava Nakorn Industrial Promotion Zone, Pathum Thani. It distributes electricity under a firm-SPP PPA to EGAT for 90 MW, and the remaining capacity to industrial customers in Nava Nakorn Industrial Promotion Zone.

Production Processes

NNEG is a cogeneration power plant using natural gas as its production fuel. It is equipped with two sets of 45-MW GTGs and one set of 46-MW GTGs, three

sets of HRSGs and one set of 35-MW STGs and 1 set of 14-MW STGs. Furthermore, an inlet air cooling system by using electric chillers has been designed and installed to increase the electricity generation capacity at different time periods.

Raw-Material Sourcing

NNEG uses natural gas as its production fuel. It has entered a 25-year gas purchase agreement with PTT, ending in 2041.

Distribution

NNEG entered a firm-SPP PPA with EGAT for 90 MW as well as PPAs and steam purchase agreements with industrial customers in Nava Nakorn Industrial Promotion Zone.

8. IRPC Clean Power Co., Ltd. (IRPC-CP)

IRPC-CP is an SPP with an electricity generating capacity of 120 MW for each of its production unit, totaling 240 MW, and a steam generating capacity of about 180-300 tons per hour for on-peak periods and 300 tons per hour for off-peak periods. It is in IRPC Industrial Zone, Rayong. It distributes electricity under two firm-SPP PPAs to EGAT: each for 90 MW, totaling 180 MW. The agreements are valid for 25 years, and the remaining electricity and steam capacity is distributed to IRPC. Moreover, IRPC-CP is constructing the CHP III project with an installed capacity of 70 MW, to be distributed entirely to IRPC. Commercial operation is expected in March 2024.

Production Processes

IRPC-CP is a cogeneration plant using natural gas as its production fuel. It is equipped with two sets of GTGs for each production unit, two sets of HRSGs for each production unit and one set of STGs for each production unit. Furthermore, steam is generated via an auxiliary boiler and the inlet air cooling system by using electric chillers designed and installed to increase the electricity generation capacity at different periods. CHP III is combined-cycle power plant using gas as its production fuel. It is equipped with one set each of GTG, HRSG, and STG.

Raw-Material Sourcing

IRPC-CP uses natural gas as its production fuel. It has entered a 27-year gas purchase agreement with PTT from the commencement of commercial operation for Phase 1.

Distribution

IRPC-CP entered two firm-SPP PPAs with EGAT for 90 MW each, totaling 180 MW, on January 6, 2012. The agreements are valid for 25 years from the date when the Company started generating electricity for EGAT's system. Besides, IRPC-CP entered a PPA for the remaining capacity of 60 MW and a steam purchase agreement of 180-300 tons per hour, depending on the periods, with IRPC on December 16, 2013, which will end in 2042 or at the same time as that of the PPA with EGAT, whichever is later.

9. Energy Recovery Unit Co., Ltd. (ERU)

The Energy Recovery Unit (ERU) Project was established under the cooperation between GPSC and Thai Oil Plc (TOP), an energy production scheme under the Clean Fuel Project (CFP) of TOP. It is a co-generation plant with an electricity generating capacity of 250 MW (50 MW to be used in the project) and a steam generating capacity of 175 tons per hour for CFP. ERU is on sub-leased land from TOP in Si Racha district, Chon Buri. The project is under construction, expected to be completed and begin commercial operation in 2025.

Production Processes

ERU is a combined heat power plant using petroleum pitch as its fuel via a pitch solidification system which receives pitch from the residue hydrocracking unit of CFP and then injects it into the circulating fluidized bed boiler. The heat then generates high-pressure steam, which passes through steam turbines to generate electricity.

Raw-Material Sourcing

ERU uses as its main fuel petroleum pitch, a by-product of CFP's distillation with environment-friendly high technology. ERU will enter a 25-year agreement to purchase the pitch and other fuels with TOP after the rights transfer of the project.

Distribution

ERU will begin electricity distribution and deliver other products to TOP for revenue recognition after taking the transfer. The agreement is valid for 25 years, with a capacity of 180-200 MW.

Renewable Energy Power Plants in Thailand**1. Global Power Synergy Plc (GPSC), Rayong Waste-to-Energy Project (WTE)**

GPSC operates the Waste-to-Energy Project, located in Rayong, which consists of two projects, namely Refuse-Derived Fuel (RDF) Plant, producing 300 tons of RDF per day, with construction completed since 2018, and an RDF power plant with a capacity of 9.8 MW, which held a PPA with PEA and started commercial operation on May 28, 2021

Raw-Material Sourcing and Production Processes

GPSC cooperates with Rayong Provincial Administrative Organization (PAO Rayong), which manages community waste for over 67 local government organizations to feed community waste to the RDF plant. GPSC sorts 500 tons per day or 170,000 tons per year of waste from 1,000-1,200 tons per day of community waste, which is enough for power generation. Moving grate technology is used to incinerate the waste at 850-1,100 degree Celsius, and RDF waste is conveyed with a closed-system conveyor.

Distribution

Electricity is distributed to PEA under the waste to-energy feed-in-tariff project. The agreement is valid for 18 years.

2. Thai Solar Renewable Co., Ltd. (TSR)

TSR holds all shares in Siam Solar Energy 1 Co., Ltd. (SSE1), a VSPP designed to develop solar farms, which use a photovoltaic system on a ground-mounted solar farm. Each of its 10 projects has a capacity of 8 MW, totaling 80 MW of contractual capacity, which is distributed to PEA.

Project	Location		Proposed Capacity (MW)	Commercial Operation
	District	Province		
SSE1-PV01	Bo Ploy	Kanchanaburi	8.0	September 4, 2013
SSE1-PV02	Don Chedi	Suphan Buri	8.0	July 17, 2013
SSE1-PV03	Nong Yasai	Suphan Buri	8.0	October 28, 2013
SSE1-PV04	Doem Bang Nang Buat	Suphan Buri	8.0	November 21, 2013
SSE1-PV05	Doem Bang Nang Buat	Suphan Buri	8.0	November 21, 2013
SSE1-PV06	Dan Makham Tia	Kanchanaburi	8.0	July 6, 2014
SSE1-PV07	Tha Muang	Kanchanaburi	8.0	March 20, 2014
SSE1-PV08	Phanom Tuan	Kanchanaburi	8.0	June 6, 2014
SSE1-PV09	U-Thong	Suphan Buri	8.0	April 4, 2014
SSE1-PV10	Sam Chuk	Suphan Buri	8.0	May 30, 2014

Raw-Material Sourcing

The key raw material used in solar farms is sunlight, which depends largely on the location, topography and climatic condition. The Company has studied sunlight intensity before deciding on the location for its solar farm.

Distribution

SSE1 distributes the entire electricity generated to PEA's system, based on 10 PPAs for a VSPP, dated April 11, 2012 for SSE1-PV01 to SSE1-PV05 projects, and July 25, 2012 for SSE1-PV06 to SSE1-PV10 projects. The power purchase capacity for each agreement is 8 MW, which is valid for five years. The agreement is automatically renewed for five years upon each renewal. The adder is applied to these PPAs, whereby the revenue can be categorized into 1) the revenue according to the capacity payment wholesaled to PEA, which is subject to the changes in the fuel cost and the maximum power purchase not exceeding the capacity specified in the PPA, and 2) the adder, whereby SSE1-PV01 to SSE1-PV10 projects are eligible for an adder of THB 6.5 per kWh. They will be supported for 10 years from the start of commercial operation.

3. Ground-Mounted Solar Farm Project for Chanthaburi Shrimp Farmer Cooperative Limited (Solar 1), sponsored by CHPP

CHPP has taken part as sponsor of the ground-mounted solar farm project for selected agricultural cooperatives to generate and distribute electricity under the announcement of ERC on purchasing electricity from ground-mounted solar farms for government institutes and agricultural cooperatives B.E. 2558, dated September 17, 2015. The project is located on the premises, occupying about 75 rai of members' space in Chanthaburi Shrimp Farmer Cooperative Limited, Na Yai Am district, Chanthaburi. The capacity of 5 MW has been distributed to PEA since December 30, 2016, under a 25-year agreement.

Raw-Material Sourcing

The key raw material used in solar farms is sunlight, which depends largely on the location, topography and climatic condition.

Distribution

Solar 1 distributes electricity of about 5 MW to PEA over a 25-year PPA from the start of electricity distribution on December 30, 2016. The feed-in tariff (FiT) rate of 5.66 Baht per kWh is applied through the entire contract period.

4. Engineering, Procurement and Construction (EPC) Business for Solar Power Generation by CHPP

CHPP operates the engineering, procurement and construction (EPC) a solar power plant within and outside PTT Group since 2017. The total installed capacity as of the end of December 2022 was 49.93 MW.

5. Glow Energy Solar Plant under Glow Energy Plc (Glow)

Glow Energy Solar Plant (Solar Farm) leverages a photovoltaic technology. It is in Asia Industrial Estate and has begun commercial operation since August 2012. Glow Energy Solar Plant commands an installed capacity of 1.55 MW, whereby the electricity generated is distributed to PEA.

6. Private PPA Solar Power Generation and Distribution Project under GPSC Group

GPSC Group has further developed its renewable-energy (renewables) business operations by seeking investment in solar farm or solar rooftop projects with government bodies and private companies to invest and share the benefit from electricity generation using

solar power under Private Power Purchase Agreements (PPAs). Currently, the Company's subsidiaries (GPSC, Glow, CHPP and IRPC-CP) have entered PPAs with companies within and outside PTT Group, with a combined installed capacity of 42.45 MW as of the end of December 2022.

7. Solar Farm Projects in Thailand via Global Renewable Power Co., Ltd. (GRP)

GRP has invested 100% in four companies, namely 1) N.P.S. Stargroup Co., Ltd., 2) World Exchange Asia Co., Ltd. and 3) P.P. Solar Co., Ltd., all of which are engaging in the solar farm business, while Global Renewable Power Operating Co., Ltd. is engaging in the operation and maintenance business for these companies, which own nine solar farm projects with a total capacity of 39.5 MW, located in four provinces: Lop Buri, Suphan Buri, Pichit and Khon Kaen. Currently, the electricity generated is distributed into PEA's system over 25-year PPAs (PPAs). The PPAs can be classified into an adder type, at the rate of THB 8 per unit (for the first 10 years of the agreement) for 3.6 MW, and the feed-in tariff (FiT) type at the rate of THB 5.66 per unit for 35.9 MW. All solar farms have begun commercial operation since 2014-2015.

Project	Location		Proposed Production Capacity (MW)	Commercial Operation
	District	Province		
NPS1	Saklek	Pichit	6	December 29, 2015
NPS2	Dan Chang	Suphan Buri	6	December 29, 2015
NPS3	Ban Mee	Lop Buri	6	December 30, 2015
WXA1	Taphan Hin	Pichit	6	December 29, 2015
WXA2	Sak Lek	Pichit	6	December 29, 2015
WXA3	Taphan Hin	Pichit	6	December 29, 2015
PPSolar1	Kranuan	Khon Kaen	1.2	March 26, 2014
PPSolar2	Kranuan	Khon Kaen	1.2	March 21, 2014
PPSolar3	Kranuan	Khon Kaen	8.0	March 13, 2015

8. Chonburi Clean Energy Co., Ltd. (CCE)

CCE is an SPP with an installed electricity capacity of 8.63 MW. It is in WHA Chonburi 1 Industrial Estate.

Production Processes

Chonburi Clean Energy Power Plant can accommodate non-hazardous industrial waste of up to 100,000 tons per year. The industrial waste is from different industrial estates in Chon Buri and nearby provinces. The power plant transfers the industrial waste to the combustion room to generate electricity, using environment-friendly technology.

Distribution

This power plant distributes 6.9 MW of the electricity generated to PEA's system under a 20-year PPA. It has begun commercial operation since November 2019.

Overseas Power Plants

1. Houay Ho Power Plant (HHPC)

Houay Ho Power plant is a hydro power plant that began commercial operation in September 1999. The plant is in Attapeu province, southern Lao PDR. The plant is operated under the IPP program, generating and distributing an installed capacity of 152 MW. Of the total, 126 MW is distributed to EGAT and 2 MW to Electricite du Lao (EDL).

2. Nam Lik 1 Power Co., Ltd. (NL1PC)

NL1PC is registered in Lao PDR with the objective of developing the Nam Lik 1 Power Plant Project. It is a run-of-river hydro power plant with a capacity of 65 MW, located about 90 kilometers north of Vientiane. It is a concrete dam 160 meters wide and with 21.5-meter height of the dam head, blocking Nam Lik River, a tributary of Nam Nguem River in Lao PDR. It is equipped with two sets of bulb turbines with a capacity of 32.5 MW. NL1PC signed a concession agreement with the Government of Laos on February 6, 2013 in a Build, Operate and Transfer (BOT) scheme. The property will be transferred to the Government of Laos upon termination of the concession, which is valid for

30 years, from the day when the Government of Laos has entirely complied with the condition precedent of the concession. The PPA with EDL is also valid until the end of the concession, whereby the concession and the PPA will end in 2044.

Raw-Material Sourcing

The key raw material used for generating electricity for a hydro power plant is running water that flows naturally in the river and water from a dike built for electricity generation instead of building a reservoir. Even though the water is derived from natural sources at no cost, the amount of water at different time periods is uncertain and unpredictable, depending on the climate and season. The Company has studied the sufficiency of water and taken such factors into consideration when designing the power plant.

Distribution

NL1PC distributes the entire capacity to EDL under a long-term PPA, which is valid for 25 years. Nam Lik1 Power Plant has formally begun commercial operation since July 1, 2019.

3. Natee Synergy Co., Ltd. (NSC)

NSC is an investment entity holding 25% stakes in Xayaburi Power Co., Ltd. (XPCL), a developer of the XPCL hydro power plant, registered in Lao PDR. It develops Xayaburi Hydro Power Plant, a run-of-river plant of 1,285 MW, located on the Mekhong River, about 100 kilometers from southern Luang Phrabang. The project leverages a Kaplan turbine technology that operates together with seven generators of 175 MW and one generator of 60 MW. It has commenced commercial operation since October 29, 2019. XPCL entered a concession agreement with the Government of Laos on October 29, 2010, whereby the distribution systems are under a Build-Own-Operate and Transfer (BOOT) scheme. The concession will end at the same time as the 29-year PPA. XPCL has received concession renewal for another two years, making the total concession period 31 years from the date of commercial operation.

Raw-Material Sourcing

The key raw material for generating electricity for a hydro power plant is the running water that flows naturally in the river and water from a dike built for electricity generation instead of building a reservoir. Even though the water is derived from natural sources at no cost, the amount of water at different time periods is uncertain and unpredictable, depending on the climatic condition and season. XPCL has studied the sufficiency of the water and taken seasonality factors into consideration when designing the power plant.

Distribution

XPCL distributes 1,220 MW to EGAT under a long-term PPA for 29 years from the commencement of commercial operation, and 60 MW to Electricite Du Laos (EDL), under a long-term PPA for 31 years from the commencement of commercial operation.

4. Global Renewable Power One Co., Ltd. (GRP1)

GRP1 holds 90% shares in Sheng Yang Energy Co., Ltd., which operates a solar farm in Taiwan. It has a total installed capacity of 55.8 MW.

Distribution

The entire electricity is distributed to Taiwan Power Company, a state enterprise held by the Government of Taiwan. It is a single buyer in Taiwan under a 20-year PPA with feed-in tariff rates through the period.

5. Global Renewable Synergy Co., Ltd. (GRSC)

5.1 Avaada Energy Private Limited (AEPL): GPSC holds 42.93% shares through GRSC in AEPL, which operates a renewables power business in several states in India with a total generating capacity (committed capacity) of 4,634 MW. Of the total, 3,842 MW have begun commercial operation since 2018.

Distribution

AEPL distributes the entire capacity to the Government of India under a long-term PPA, which is valid for 15-25 years.

5.2 Offshore Wind Power Project: GPSC holds 25% shares in CI Changfang Limited and Ci Xidao Limited (CFXD Project) through GRSC and Global Renewable Synergy Taiwan Company Limited (GRSC TW). It has a combined electricity generating capacity of 595 MW. The operation started in 2022 with a target to distribute power in full capacity in 2024.

Distribution

The entire electricity is distributed to the Government of Taiwan under a long-term PPA, which is valid for 20 years.

Company	Project/ Location	Capacity								Power Plant Type	Fuel	Power Purchase Agreement	Commercial Operation
		Electricity (MW)		Steam (Ton/Hour)		Chilled Water (Refrigerated Ton)		Industrial Water (Cu.M./Hour)					
		Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity				
Combined-Cycle / Cogeneration / Combined Heat													
GPSC	Sri Racha Power Plant, Si Racha district, Chon Buri	700	700	-	-	-	-	80	80	IPP	Natural gas 25-year agreement, ending 2025	EGAT 25-year agreement, ending 2025	2000
GPSC	CUP-1 WHA Eastern Industrial Estate, Map Ta Phut, Rayong	226	226	890	890	-	-	720	720	SPP (Non-firm)	Natural gas 5-year agreement, ending 2026	EGAT 40 MW 5-year agreement, with 5-year renewal, next renewal ending 2025	2006
											Industrial customers 10-15-year agreement, 2017-2026, with 5-year renewal		
GPSC	CUP-2 Near R.I.L. Industrial Estate, Rayong	113	113	170	170	-	-	510	510	SPP (Non-firm)	Natural gas 15-year agreement ending 2023	EGAT 60 MW 5-year agreement, with 5-year renewal, next renewal ending 2025	2008
											Industrial customers 15-year agreement, first round ending 2026, with 5-year renewal		
GPSC	CUP-3 WHA Eastern Industrial Estate, (Map Ta Phut), Rayong	15	15	280	280	-	-	770	770	Cogeneration	Natural gas 15-year agreement ending 2023	Industrial customers 15-year agreement, ending 2024-2027, with 5-year renewal	2009
GPSC	CUP-4 Asia Industrial Estate (AIE), Rayong	49	49	140	140	-	-	-	-	Cogeneration	Natural gas 15-year agreement ending 2034	Industrial customers 10-15-year agreement, with 5-year renewal	Q3/2019

Company	Project/Location	Capacity										Power Plant Type	Fuel	Power Purchase Agreement	Commercial Operation
		Electricity (MW)		Steam (Ton/Hour)		Chilled Water (Refrigerated Ton)		Industrial Water (Cu.M./Hour)							
		Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity						
GLOW	Glow IPP, WHA Chonburi Industrial Estate 1, Chon Buri	713	677	-	-	-	-	-	-	-	-	IPP	Natural gas 25-year agreement ending 2028	EGAT 25-year agreement ending 2028	2003
GLOW	GHECO-ONE, Map Ta Phut Industrial Estate, Rayong	660	429	-	-	-	-	-	-	-	-	IPP	Coal medium- and long-term agreement	EGAT ending 2037	2012
GLOW	Glow Energy Phase 1, Map Ta Phut Industrial Estate, Rayong	-	-	-	-	-	-	-	-	1,240	1,240	SPP	-	Industrial customers	1994
GLOW	Glow Energy Phase 2, Map Ta Phut Industrial Estate, Rayong	70	70	206	206	-	-	-	-	934	934	SPP	Natural gas	Industrial customers	1996
GLOW	Glow Energy Phase 2 (SPP Replacement)	200	200	460	460	-	-	-	-	-	-	SPP (Firm)	Natural gas 25-year agreement ending 2049	EGAT 25-year agreement ending 2030	SPP Replacement 2022-2023
													Industrial customers 10-20-year agreement		
GLOW	Glow Energy Phase 4, Map Ta Phut Industrial Estate, Rayong	77	77	137	137	-	-	-	-	2,050	2,050	SPP (Firm)	Natural gas 25-year agreement ending 2037	EGAT 25-year agreement, ending 2030	2005
GLOW	Glow Energy Phase 5, Map Ta Phut Industrial Estate, Rayong	328	328	160	160	-	-	-	-	-	-	SPP Cogeneration	Natural gas 5-year agreement ending 2026	Industrial customers 10-20-year agreement	2011
GLOW	Glow Energy CFB3, Map Ta Phut Industrial Estate, Rayong	85	85	79	79	-	-	-	-	-	-	Cogeneration	Coal Medium and long term agreement	Industrial customers 10-20-year agreement	2010

Company	Project/Location	Capacity								Power Plant Type	Fuel	Power Purchase Agreement	Commercial Operation
		Electricity (MW)		Steam (Ton/Hour)		Chilled Water (Refrigerated Ton)		Industrial Water (Cu.M./Hour)					
		Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity				
GLOW	Glow SPP2/Glow SPP3 Map Ta Phut Industrial Estate, Rayong	513	513	190	190	-	-	150	150	SPP (Firm)	Natural gas 25-year agreement ending 2024 and Coal	EGAT 25-year agreement, ending 2024	SPP Replacement 2024-2025
											Industrial customers 10-20-year agreement		
GLOW	Glow SPP11 Phase 1, Siam Eastern Industrial Park, Rayong	120	120	-	-	2,200	2,200	360	360	SPP (Firm)	Natural gas agreement ending 2025	EGAT 25-year agreement ending 2025	2000
											Industrial customers 2-10-year agreement		
GLOW	Glow SPP11 Phase 2, Siam Eastern Industrial Park, Rayong	110	110	-	-	1200	1200	212	212		Natural gas 25-year agreement ending 2037	EGAT 25-year agreement ending 2037	2012
											Industrial customers 2-10-year agreement		
GLOW	Glow SPP11 Phase 3, Siam Eastern Industrial Park, Rayong	23	23	-	-	-	-	-	-	SPP (Firm)	Natural gas agreement ending 2025	Industrial customers 2-10-year agreement	2006
GLOW	Glow SPP11 Phase 3 (Extension), Siam Eastern Industrial Park, Rayong	19	19	-	-	-	-	-	-	SPP (Firm)	Natural gas agreement ending 2025	Industrial customers 2-10-year agreement	2015
RPCL	Ratchaburi	1,400	210	-	-	-	-	-	-	IPP	Natural gas 25-year agreement ending 2033	EGAT 1,400 MW 25-year agreement ending 2033	2008

Company	Project/Location	Capacity								Power Plant Type	Fuel	Power Purchase Agreement	Commercial Operation
		Electricity (MW)		Steam (Ton/Hour)		Chilled Water (Refrigerated Ton)		Industrial Water (Cu.M./Hour)					
		Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity				
CHPP	Chaengwatthana Government Complex	5	5	-	-	12,000	12,000	-	-	VSPP	Electricity	MEA 6.4 MW 5-year agreement, automatic renewal 5 years each until 2025 DAD 30-year agreement for refrigeration, ending 2038	2009
BIC	Bang Pa-In Industrial Estate Phase 1, Ayutthaya	117	29	20	5	-	-	-	-	SPP (Firm)	Natural gas 25-year agreement ending 2038	EGAT 90 MW 25-year agreement ending 2038 Industrial customers 15-year agreement ending 2025-2029	2013
BIC	Bang Pa-In Industrial Estate Phase 2, Ayutthaya	117	29	20	5	-	-	-	-	SPP (Firm)	Natural gas 25-year agreement ending 2042	EGAT 90 MW 25-year agreement ending 2042 Industrial customers 15-year agreement ending 2032	2017
NNEG	Nava Nakorn Industrial Promotion Zone, Pathum Thani	125	38	30	9	-	-	-	-	SPP (Firm)	Natural gas 25-year agreement ending 2041	EGAT 90 MW 25-year agreement ending 2041 Industrial customers 10-15-year agreement ending 2041	2016 for Phase 1 and 2020 for Phase 2
NNEG	Nava Nakorn Industrial Promotion Zone (Extension), Pathum Thani	90	27	15.3	4.6	-	-	-	-	Cogeneration	Natural gas	Industrial customers 2020-2024	2020-2024

Company	Project/ Location	Capacity										Power Plant Type	Fuel	Power Purchase Agreement	Commercial Operation	
		Electricity (MW)		Steam (Ton/Hour)		Chilled Water (Refrigerated Ton)		Industrial Water (Cu.M./Hour)		Equity Capacity	Installed Capacity					Equity Capacity
		Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity							
IRPC-CP	IRPC Industrial Zone, Rayong	240	122	300	153	-	-	-	-	-	-	SPP (Firm)	Natural gas 27-year agreement ending 2042	EGAT 180 MW 25-year agreement ending 2042	Phase 1 - 2015 Phase 2 - 2017	
IRPC-CP	IRPC Industrial Zone (CHP III Project), Rayong	70	36	-	-	-	-	-	-	-	-	Combined Cycle	Natural gas	Industrial customers ending 2042	March 2024	
ERU	Energy Recovery Unit, Chon Buri	250	250	175	175	-	-	-	-	-	-	Cogeneration	Oily liquid by-product of CFP's distillation	Thai Oil Plc (TOP) 220 MW 25-year agreement ending 2048	2025	
Total		6,435	4,501	3,272	3,064	15,400	15,400	7,026	7,026							
Solar Farm																
GLOW	Glow Energy Solar, Asia Industrial Estate	1.55	1.55	-	-	-	-	-	-	-	-	VSPP	Solar	PEA	2012	
TSR/ SSE1	Kanchanaburi/ Suphan Buri	80	32	-	-	-	-	-	-	-	-	VSPP	Solar	PEA 80 MW 5-year agreement automatic renewal every five years	2013-2014	
CHPP	Solar 1, on members' space of Chanthaburi Shrimp Farmer Cooperative Limited, Chanthaburi	5	5	-	-	-	-	-	-	-	-	VSPP	Solar	PEA 25-year agreement ending 2041	2016	
GPSC GLOW CHPP IRPC-CP	Solar farm project	42.45	42.28	-	-	-	-	-	-	-	-	-	Solar	PPPA	2018-2021	

Company	Project/ Location	Capacity								Power Plant Type	Fuel	Power Purchase Agreement	Commercial Operation
		Electricity (MW)		Steam (Ton/Hour)		Chilled Water (Refrigerated Ton)		Industrial Water (Cu.M./Hour)					
		Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity	Installed Capacity	Equity Capacity				
GRP	Solar farms: Pichit, Suphan Buri, Lop Buri, and Khon Kaen	39.5	19.75	-	-	-	-	-	-	VSPP	Solar	PEA 25-year agreement	2014-2015
GRP1	Taiwan	55.8	25.11	-	-	-	-	-	-	-	Solar	Taiwan Power Company	2018-2021
GRSC (AEPL)	India	4,634	1,990	-	-	-	-	-	-	-	Solar	Indian State Government	2018-2024
GRSC (CFXD)	Taiwan	595	149	-	-	-	-	-	-	-	Wind	Taiwan Power Company	2022-2024
Hydro Power Plant													
GLOW	Houay Ho, Attapeu, Lao PDR	152	102	-	-	-	-	-	-	IPP	Water	EGAT - 126 MW EDL - 2 MW 30-year agreement ending 2029	1999
XPCL	Lao PDR	1,285	321	-	-	-	-	-	-	-	Water	EGAT - 1,220 MW EDL - 60 MW 25-year agreement ending 2044	2019
NL1PC	Lao PDR	65	26	-	-	-	-	-	-	-	Water	EDL - 65 MW 25-year agreement ending 2043	2019
Waste-to-Energy Power Plant													
CCE	WHA Chonburi Industrial Estate 1, Chon Buri	8.6	2.9	-	-	-	-	-	-	VSPP	Industrial waste	MEA 8 MW 20-year agreement ending 2039	2019
GPSC	RDF Power Plant, Rayong	9.8	9.8	-	-	-	-	-	-	VSPP	Community waste	MEA 8 MW 20-year agreement ending 2041	2021
Total		6,972	2,724	-	-	-	-	-	-	-	-	-	-
Grand Total		13,409	7,227	3,272	3,064	15,400	15,400	7,026	7,026				

4) Business Assets

1. Fixed Assets

GPSC's main businesses are production and distribution of electricity, steam, and utilities and investments through shareholding in other companies engaging in the same and related businesses in both domestic and international markets. The table below shows the fixed assets of GPSC and its subsidiaries with net book

values after deduction of accumulated depreciation and other reserve for impairment as stated in GPSC's consolidated financial statements as of December 31, 2021, and December 31, 2022, of THB 95,581 million and THB 92,647 million, respectively, as detailed below:

Property, Plant, and Equipment of GPSC and Subsidiaries

No.	Item	Book Value (THB Million)		Obligation
		December 31, 2021	December 31, 2022	
1	Land	1,844	1,844	Some portion of land of GPSC's subsidiaries was pledged as collateral for long-term loans between subsidiaries and financial institutions.
2	Buildings and building improvement	2,023	1,786	Buildings and building improvement of GPSC's subsidiaries were pledged as collateral for long-term loans between subsidiaries and financial institutions.
3	Power plants, water plants, machinery, tools and equipment	86,863	85,142	Some main machinery and equipment and a portion of power and water plants of GPSC's subsidiaries were pledged as collateral for long-term loans between subsidiaries and financial institutions.
4	Furniture, fixtures and office equipment	113	129	Some furniture, fixtures and office equipment of GPSC's subsidiaries were pledged as collateral for long-term loans between subsidiaries and financial institutions.
5	Motor vehicles	18	19	Some motor vehicles of GPSC's subsidiaries were pledged as collateral for long-term loans between subsidiaries and financial institutions.
6	Construction in progress	4,720	3,727	Some machinery and equipment of GPSC's subsidiaries used in the construction were pledged as collateral for long-term loans between subsidiaries and financial institutions.

These fixed assets of GPSC and its subsidiaries are divided by type of assets and the companies as follows:

• **Land**

As of December 31, 2021, and December 31, 2022, the book values of land under the consolidated financial statements of GPSC and its subsidiaries were:

Company	Book Value (THB Million)		Ownership	Obligation Value (THB Million)
	December 31, 2021	December 31, 2022		
GPSC	581	581	GPSC	-
IRPC-CP	614	614	IRPC-CP	614
Glow	649	649	GLOW Group	-
Total	1,844	1,844		

• **Buildings and building improvement**

As of December 31, 2021, and December 31, 2022, the book values of buildings and building improvement under the consolidated financial statements of GPSC and its subsidiaries were:

Company	Book Value (THB Million)		Ownership	Obligation Value (THB Million)
	December 31, 2021	December 31, 2022		
GPSC	884	699	Some buildings and building improvement are owned by GPSC, and some of them were constructed on sub-leased land to be used as power plants. Upon the expiration of the sub-lease agreement, these buildings and building improvement will be devolved to the sublessor.	-
CHPP	145	136	CHPP constructed buildings on sub-leased land to be used as power plants. Upon the expiration of each sub-lease agreement, these buildings and building improvement will be devolved to the sublessor.	27
IRPC-CP	803	781	IRPC-CP owned the building to be used as the power plant in Rayong.	641
GLOW	191	170	Glow Group owned the buildings to be used as power plants.	11
Total	2,023	1,786		

• Power plants, water plants, machinery, tools and equipment

As of December 31, 2021, and December 31, 2022, the book values of power plants, water plants, machinery, tools and equipment under the consolidated financial statements of GPSC and its subsidiaries were:

Company	Book Value (THB Million)		Ownership	Obligation Value (THB Million)
	December 31, 2021	December 31, 2022		
GPSC	14,685	13,952	Owned by GPSC, to be used in the power plant and utilities plant.	-
CHPP	268	320	Owned by CHPP, to be used in the power plant.	123
IRPC-CP	7,518	7,051	Owned by IRPC-CP, to be used in the power plant.	7,518
Glow	64,392	63,819	Glow Group owns the buildings, to be used as power plants.	29,013
Total	86,863	85,142		

• Furniture, fixtures and office equipment

As of December 31, 2021, and December 31, 2022, the book values of furniture, fixtures and office equipment under the consolidated financial statements of GPSC and its subsidiaries were:

Company	Book Value (THB Million)		Ownership	Obligation Value (THB Million)
	December 31, 2021	December 31, 2022		
GPSC	81	71	GPSC	-
CHPP	1	2	CHPP	-
IRPC-CP	12	25	IRPC-CP	11
Glow	19	31	Glow Group	-
Total	113	129		

• Motor vehicles

As of December 31, 2021, and December 31, 2022, the book values of motor vehicles under the consolidated financial statements of GPSC and its subsidiaries were:

Company	Book Value (THB Million)		Ownership	Obligation Value (THB Million)
	December 31, 2021	December 31, 2022		
GPSC	12	12	GPSC entered financial lease agreement.	-
GLOW	6	7	Glow Group	6
Total	18	19		

• Construction in progress

As of December 31, 2021, and December 31, 2022, the book values of the construction in progress under the consolidated financial statements of GPSC and its subsidiaries were::

Company	Book Value (THB Million)		Ownership	Obligation Value (THB Million)
	December 31, 2021	December 31, 2022		
GPSC	1,487	282	GPSC	-
CHPP	98	272	CHPP	-
IRPC-CP	40	803	IRPC-CP	40
GLOW	3,095	2,370	Glow Group	70
Total	4,720	3,727		

2. Intangible Assets

As of December 31, 2021, and December 31, 2022, the book values of the intangible assets and rights to use under the consolidated financial statements of GPSC and its subsidiaries were:

Company	Description	Book Value (THB Million)	
		December 31, 2021	December 31, 2022
Intangible assets			
GPSC	Cost of computer software copyright and system improvement for the Company's power plant	189	504
	Deferred cost of the right-of-use of assets	85	60
CHPP	Cost of computer software copyright and system improvement	7	7
IRPC-CP	Cost of the right to use natural gas distribution system	469	446
	Deferred cost of the right-of-use of assets	875	834
	Cost of computer software copyright and system improvement	9	14
GLOW	Deferred cost of fair value from business purchase	39,187	37,294
	Cost of computer software copyright and system improvement	3	3
	Deferred cost of the right-of-use of assets	702	614
Total		41,526	39,776

3. Non-operating Assets

As of December 31, 2022, GPSC and its subsidiaries had some machinery and equipment which were not operating and under the amortization process. They therefore booked them as non-operating assets. As of December 31, 2021, and December 31, 2022, the book values of non-operating assets under the consolidated financial statements of GPSC and its subsidiaries were:

Company	Book Value (THB Million)		Ownership
	December 31, 2021	December 31, 2022	
CHPP	104	97	Non-operating assets and under amortization process
Total	104	97	

4. Business agreement

- Long-term lease agreement

As of December 31, 2022, the Company and its subsidiaries' significant agreements for the business operation of each company was summarized as follows:

Lessee	Lessor/Sub Lessor	Agreement	Purpose	Term of Agreement
GPSC	TOP/Treasury Department (TD)	Land sublease agreement	To be used as the location for GPSC's IPP power plant in Chon Buri. Currently awaiting TD's approval for entering the agreement	4 years (in process)
	TOP	Right to use common areas with natural gas receiving and distributing station	To be used as the natural gas receiving and distributing station with Thailoil Group (Renewed agreement spanning September 11, 2022 to August 14, 2025)	2 years and 11 months
	GCEC	Service area agreement for the installation of underground electric transmission lines	For the installation of underground high-voltage transmission lines under GPSC CUP-4 project (to CUP-1)	15 years
	GCEC	Service area agreement for the installation of a drainage water system	For the installation of drainage water pipes under GPSC CUP-4 project (to AIE)	15 years
	GCEC	Service area agreement for the installation of underground electric transmission lines	For the installation of underground high-voltage transmission lines under GPSC CUP-4 project (to client)	15 years
	GCEC	Service area agreement for the installation of underground electric transmission lines	For the installation of underground high-voltage transmission lines under GPSC CUP-4 project (to PTTMCC)	15 years
	GCEC	Service area agreement for bridge construction to support transmission pipeline	For the construction of the bridge to support GPSC's transmission pipeline under GPSC CUP-4 project	15 years

Lessee	Lessor/Sub Lessor	Agreement	Purpose	Term of Agreement
GPSC	GCEC	Service area agreement for the installation of ENVICCO underground electric transmission lines	For the installation of underground high-voltage transmission lines from CUP-4 project (to ENVICCO)	16 years and 7 months
	PTT	Land lease agreement	For the development, design, construction, possession and management of ground-mounted solar electricity-generating system or other generating systems for commercial distribution and research and development (R&D).	25 years and 5 months
	Enco	Office space lease agreement	To be used as offices and workplace	3 years
	PTTEP	Office space lease agreement	To be used as offices and workplace	3 years (April 18, 2020 – April 17, 2023)
	WHA Eastern Industrial Estate (WHA)	Service area agreement for the installation of an underground electric transmission line system	For the installation of an underground transmission line system (GPSC CUP-1 to VCX)	15 years
	WHA	Service area agreement for the installation of an underground electric transmission line system	For the installation of an underground transmission line system (GPSC CUP-1 to PTTAC & MTPSC & Phenol II)	15 years
	WHA	Service area agreement for the installation of an underground electric transmission line system and Amendment No. 1	For the installation of an underground transmission line system (GPSC CUP-1 to MIGP & Phenol & TOCGC & TOL) (CUP-1 to CUP-3)	15 years and 3 months
	WHA	Service area agreement for the installation of an underground electric transmission line system	For the installation of an underground transmission line system (CUP-1 to CUP-4)	15 years
	WHA	Service area agreement for the installation of an underground electric transmission line system	For the installation of an underground transmission line system (CUP-1 to GC Oxirane)	15 years
	Asia Industrial Estate (AIE)	Service area agreement for the installation of drainage water pipelines	For the installation of drainage water pipelines (GPSC CUP-4 project)	15 years
	AIE	Service area agreement for the installation of an underground electric transmission line system	For the installation of an underground transmission line system (CUP-4)	6 years
	Industrial Estate Authority of Thailand (IEAT)	Service area agreement for other useful business operations or related operations	For the construction of a structure for the installation of raw material and product transmission pipelines (Agreement number: Nor Phor 005/2005)	30 years

Lessee	Lessor/Sub Lessor	Agreement	Purpose	Term of Agreement
GPSC	IEAT	Agreement for permission for pipeline installation in Padaeng Industrial Estate	For the installation of an underground electrical conduits at parcel no. P-3, occupying 15.8 Sq.Wah	15 years (January 17, 2018 – January 16, 2033)
	State Railway of Thailand (SRT)	Land lease agreement for the installation of above-ground or underground electrical conduits under railway crossing under the D3 project	For the installation of the D3 underground electrical conduits in 1,089.32 sq.m. Agreement dated October 28, 2021 (Agreement number: 901648076)	5 years (August 1, 2021 – July 31, 2026)
	SRT	Land lease agreement for the installation of above-ground or underground pipeline	For the installation of water and steam pipelines over-railway crossing, and that of above-ground or underground electrical conduits under-railway crossing	3 years
	R.I.L. Industrial Estate R.I.L 1996 Co., Ltd. (RIL)	Agreement to use structure for pipeline installation	For the installation of a utility pipeline (CUP-2)	15 years
	RIL	Land right agreement for the construction of underground electrical conduits	For the construction of underground electrical conduits (CUP-2)	15 years
	Bangkok Industrial Gas Co., Ltd. (BIG)	Service area agreement for the installation of underground electric transmission lines	For the installation of underground electrical conduits in 163.16 sq.m. Agreement dated April 25, 2022	20 years (May 1, 2022 – April 30, 2042)
	Rayong Industry Development Co., Ltd. (RID)	Memorandum of agreement to use Multi-purpose Building 1	To house an area for quality improvement of sorted RDF waste	2 years and 1 month (September 1, 2021 – September 30, 2024)
CHPP	State property by Dhanarak Asset Development Co., Ltd. as Sub-lessor	Sublease agreement of State property	For the operation under a chilled-energy purchase agreement, Government Complex project number: 35/3551	31 years and 4 months
	Private land of natural person	Land lease agreement	For the construction of a building on the lease land for use as a solar power plant. Upon expiration of the agreement, the land, building, and construction will be devolved to the lessor	25 years
IRPC-CP	IRPC	Land lease agreement	To be used as the location for high-voltage power transmission towers to support overhead power lines from the lessee's area to the high-voltage power station (Agreement number: AL. 0221/2017)	3 years
Glow	IEAT	Land sublease agreement in Map Ta Phut Industrial Estate (port)	For the construction of a factory building and operation of electricity generation and steam production (Agreement number: 4/1996-Nor Phor.)	28 years

Lessee	Lessor/Sub Lessor	Agreement	Purpose	Term of Agreement
Glow	IEAT	Land lease agreement for industrial use, Map Ta Phut Industrial Estate	For the construction of a plant and for the operation of electricity and steam generation/production (Agreement number: 4/1996-Nor Phor.). For the operation of electricity, steam, and industrial water generation/production, parcel no. I-17/1.2.1, I-17/1.2.2, Agreement dated July 17, 2020 (Agreement number: 8/2020-Nor Phor.)	20 years
	IEAT	Service area agreement for other business operations which are useful or related to business operations in Map Ta Phut Industrial Estate (underground power transmission lines)	For the operation of product and power transmission pipelines (Agreement number: 2/2007-Nor Phor.)	28 years with 20-year renewable term
	IEAT	Land lease agreement for industrial use, Map Ta Phut Industrial Estate (parking lot project 2)	To be used as a parking lot (Agreement number: 1/2019-Nor Phor.) (Under agreement renewal process: January 1, 2022 – December 31, 2024)	3 years with renewable term
	IEAT	Land allocation agreement in Map Ta Phut Industrial Estate (coal stock piling)	For the operation of electricity, steam and water generation for industrial use, (reserve space for business expansion) (Agreement number: 2/2007 Nor Phor.)	30 years with 20-year renewable term
	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (underground electric transmission lines to RIL)	For the installation of underground electrical conduits, parcel no. PR-02 to PR-09, PR-11 to PR-12 (Agreement number: 3/2008-Nor Or Lor.)	Agreement terminated as agreed by the parties
	IEAT	Land lease agreement for industrial use, Map Ta Phut Industrial Estate (GSPP2 Replacement) parcel no. S-54 for the operation of electricity, steam, and industrial water generation/production	GSPP2 Replacement power plant, parcel no. S-54, for the operation of electricity, steam, and industrial water generation/production (Agreement number: Nor Phor.043/2019)	20 or 30 years, as decided by IEAT's Board of Directors
	IEAT	Land lease agreement for industrial use, Map Ta Phut Industrial Estate (GSPP3 Replacement) parcel no. S-53 for the operation of electricity, steam, and industrial water generation/production	GSPP3 Replacement power plant, parcel no. S-53 for the operation of electricity, steam, and industrial water generation/production (Agreement number: Nor Phor.020/2022)	20 or 30 years, as decided by IEAT's Board of Directors
	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (underground electric transmission lines to RIL)	For the installation of underground electrical conduits, parcel no. PR-13 (Agreement number: 4/2008-Nor Or Lor.)	Agreement terminated as agreed by the parties

Lessee	Lessor/Sub Lessor	Agreement	Purpose	Term of Agreement
Glow	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (underground electric transmission lines to RIL)	For the installation of underground electrical conduits, parcel no. G-05, PR-14 (Agreement number: 5/2008 - Nor Or Lor.)	Agreement terminated as agreed by the parties
	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (underground electric transmission lines to RIL)	For the installation of underground electrical conduits, parcel no. P-20/1 (Agreement number: 6/2008-Nor Or Lor.)	Agreement terminated as agreed by the parties
	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (underground electric transmission lines to RIL)	For the installation of underground electrical conduits, parcel no. P-12/1 (Agreement number: 7/2008-Nor Or Lor.)	Agreement terminated as agreed by the parties
	AIE	Memorandum of Agreement on land allocation (underground power transmission lines in Asia Industrial Estate)	For the installation of underground power transmission and distribution lines to supply to consumers (Agreement dated August 1, 2005)	15 years
	AIE	Service area agreement for the installation of an underground electric transmission lines system	For the installation of underground electrical conduits and manholes in part of the area in parcel no. 3761 (Agreement dated December 30, 2019)	January 1, 2020 – December 31, 2025
	IEAT	Service area agreement for other business operations which are useful or related to business operations in Map Ta Phut Industrial Estate (a bridge to support steam and product transmission pipeline I-6 Project 3)	For the construction of the bridge to support the product and steam transmission pipelines to industrial consumers (Agreement number: Nor Phor. 033/2019)	3 years with renewable term
	IEAT	Service area agreement for other business operations which are useful or related to business operations in Map Ta Phut Industrial Estate (a structure to support steam and product transmission pipeline I-2)	For the construction of a structure to support the product, water and steam transmission pipelines and a steam and water gauging station (Agreement number: 12/2014- Nor Phor.)	14 years
	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (underground electric transmission lines)	For the installation of a product transmission pipeline and electrical transmission lines (Agreement number: 3/2011- Nor Phor.)	13 years
	IEAT	Service area agreement for other business operations which are useful or related to business operations in Map Ta Phut Industrial Estate (a bridge to support steam and product transmission pipelines)	For the construction of the bridge to support the product and steam transmission pipelines (Agreement number: 13/2014- Nor Phor.)	14 years

Lessee	Lessor/Sub Lessor	Agreement	Purpose	Term of Agreement
Glow	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (underground electric transmission lines)	For the installation of a product transmission pipeline and electrical transmission lines (Agreement number: 3/2013-Nor Phor.)	3 years with renewable term
	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (raw water pipeline project 2)	For the installation of a raw water intake pipeline, parcel number: G-84 Agreement dated July 18, 2019 (Agreement number: Nor Phor. 032/2019)	11 years
	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (underground electric transmission lines)	For the installation of a product transmission pipeline and electrical transmission lines (Agreement number: 6/2014-Nor Phor.)	10 years
	IEAT	Service area agreement to operate other businesses that are beneficial or related to business operations in Map Ta Phut Industrial Estate (a steam transmission pipeline)	For the installation of a medium pressure steam transmission pipeline (Agreement number: 4/2015-Nor Phor.)	30 years
	IEAT	Service area agreement for industrial use in Map Ta Phut Industrial Port	To maintain seawater-intake point for a cooling system, parcel no. S-3, Agreement dated May 13, 2019 (Under agreement renewal process: January 1, 2022 – December 31, 2024) (Agreement number: 006/2019-Sor Thor Ror.)	3 years with renewable term
	B.Grimm Power (AIE-MTP) Co., Ltd. (BGRIM)	Land lease agreement for the location of a high-voltage power station, underground power transmission lines and a steam boiler control system. Agreement dated February 21, 2019	For the operation of the power distribution system business (MTP3 Substation near the SPP 1 power plant)	30 years
	BGRIM	Rights of use agreement	For the rental of an area to set up Glow's duct bank (in Glow SPP1 Co., Ltd.'s area) under a lease agreement dated February 1, 2017	30 years
	GCEC	Service area agreement for the installation of underground power transmission lines	For the installation of underground power transmission lines 800 meters long. Agreement dated February 20, 2020 (Agreement number: GCEC-34-3420-001)	January 1, 2020 – December 31, 2034

Lessee	Lessor/Sub Lessor	Agreement	Purpose	Term of Agreement
Glow	WHA	Supplementary Memorandum No. 1 of the service area agreement for the installation of underground power transmission lines in WHA Eastern Industrial Estate (Map Ta Phut), formerly Hemaraj Eastern Industrial Estate (Map Ta Phut), (Agreement No. EIE 001/2017 dated January 1, 2017)	To amend the agreement on the installation of an underground power transmission system in WHA Eastern Industrial Estate (Map Ta Phut) by terminating Glow SPP 1 Co., Ltd. and revising the condition on the property transferred from GSPP1 to Glow Energy Plc (Agreement number: EIE 001/2017, dated January 1, 2017)	19 years (January 1, 2017 – December 31, 2035)
	PTTGC	Service area agreement for the installation of underground power transmission lines, D3 project	For the installation of underground power transmission lines to CUP-3, a total of 2,938.38 sq.m. Agreement dated March 10, 2021 (Agreement number: S115-10-21-113)	20 years (March 10, 2021 – March 9, 2041)

5. Investment Capital in Power Plants under Construction

GPSC's investment capital in power plant projects under construction as of December 31, 2022, is summarized as follows:

Project	Shareholding Proportion (Percent)	Commencement of Commercial Operations/Production	Estimated Investment Budget Required until Commercial Operation Date (THB Million)
ERU ⁽¹⁾	100	2025	22,681
SPP Replacement (Glow SPP 2) ⁽²⁾	100	2024	3,527
SPP Replacement (Glow Energy Phase 2) ⁽³⁾	100	2023	3,067
Changfang and Xidao (CFXD) ⁽⁴⁾	25	2024	2,784
Total			32,059

Remarks:

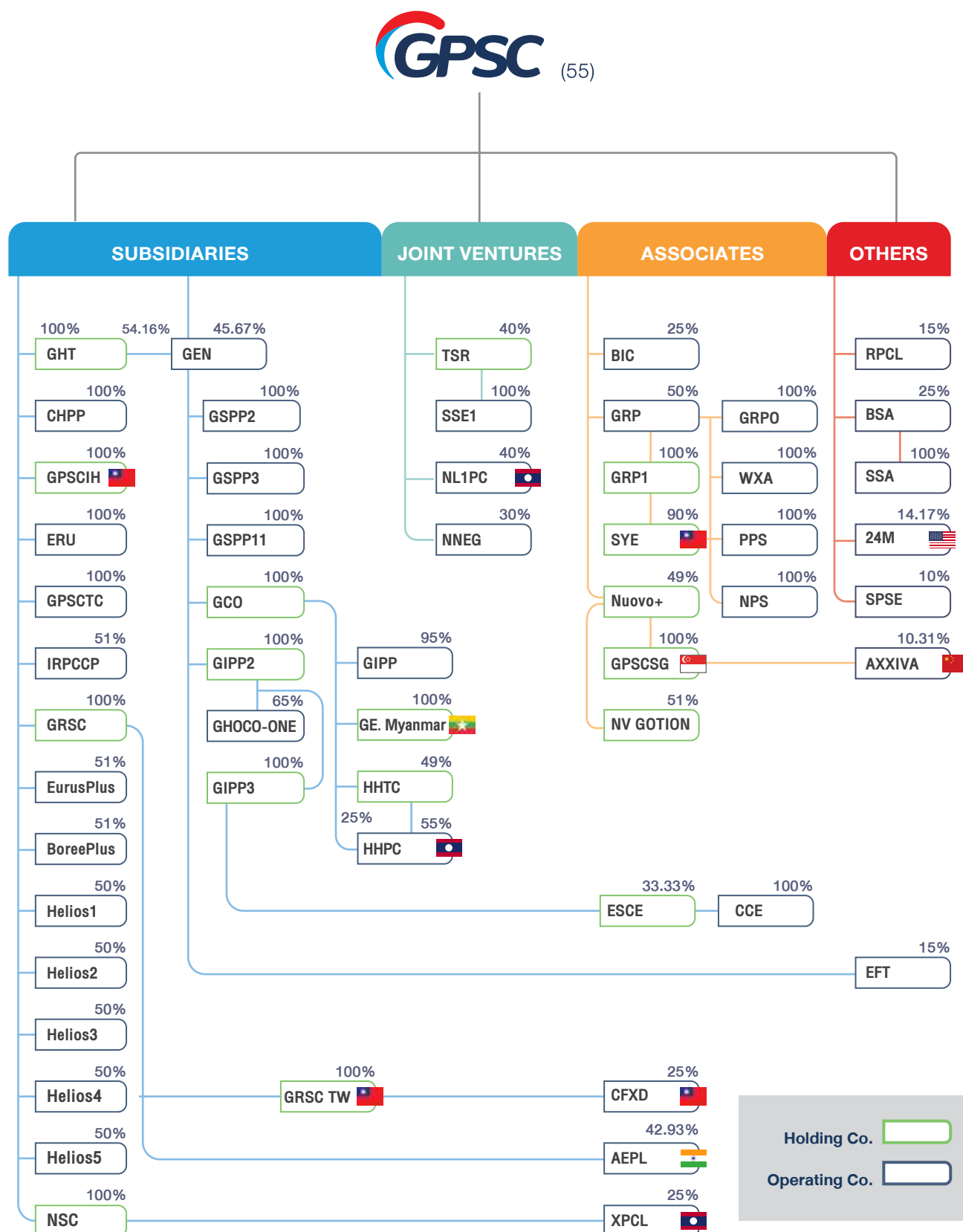
⁽¹⁾ The ERU project's total investment budget stood at about USD 757 million according to the asset purchase agreement with Thai Oil Public Company Limited (TOP). The remaining investment budget for 2023-2025 was reported at about USD 653 million, equivalent to about THB 22,681 million at the exchange rate of THB 34.7335/USD, based on the average selling price of the Bank of Thailand as of December 30, 2022. The actual transaction in the Baht currency on the transaction date or payment date as stated in the contract is subject to increase or decrease, depending on the exchange rate stated in the contract.

⁽²⁾ The investment budget for the SPP Replacement (Glow SPP 2) stood at about USD 126 million, of which USD 24 million had already been invested, with pending investment capital in 2023-2024 amounting to about USD 102 million or about THB 3,527 million, at the exchange rate of THB 34.7335/USD, based on the average selling price of the Bank of Thailand as of December 30, 2022.

⁽³⁾ The investment budget for the SPP Replacement (Glow Energy Phase 2) stood at about USD 194 million, of which USD 106 million had already been invested, with pending investment capital in 2023 amounting to about USD 88 million or about THB 3,067 million, at the exchange rate of THB 34.7335/USD, based on the average selling price of the Bank of Thailand as of December 30, 2022.

⁽⁴⁾ GPSC invested equity in Changfang and Xidao Project (CFXD) through Global Renewable Synergy Company Limited (GRSC) to acquire shares in CI Changfang Limited and CI Xidao Limited (CFXD) in Taiwan to invest in wind energy projects amounting to TWD 14,155 million, equivalent to about THB 16,022 million, based on the exchange rate of THB 1.1319/TWD and USD 44 million or about THB 1,528 million, at the exchange rate of THB 34.7335/USD, totaling about THB 17,550 million with pending investment capital in 2023-2024 amounting to THB 2,784 million, based on the average selling price of the Bank of Thailand as of December 30, 2022.

1.3 Shareholding Structure of GPSC Group



Remarks: ¹GPSC's shareholding structure and equities as of December 31, 2021

General Information on GPSC-Invested Companies

As of December 31, 2022

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
Subsidiaries						
Combined Heat and Power Producing Company Limited (CHPP) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66 2143 9644 Fax: +66 2143 9645	A very small power producer firm (VSPP) operating a combined heat and power with district cooling power plant to generate and supply electricity to MEA and chilled water to Bangkok Government Complex. It produces, distributes, and builds buoyancy and provide electrical system construction and system control services.	THB 500,000,000	Common share	THB 371,730,000	THB 10/ share	100%
Natee Synergy Company Limited (NSC) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900, Tel: +66 2140 4658	Investment in power generating business	THB 6,826,500,000	Common share	THB 6,826,500,000	THB 10/ share	100%
Indirect Associate						
Xayaburi Power Company Limited (XPCL) 215 Lanexang Avenue, Ban Siang Yuen, Chanthaburi District, (ELECTRICITE DU Vientiane, Lao PDR LAOS: EDL) Tel: +856 (21) 251718 Fax: +856 (21) 215500	A hydropower company generating and supplying power to EGAT and Electricite du Laos (EDL)	THB 26,861,000,000	Common share	THB 26,861,000,000	THB 10/ share	25% (through NSC)
IRPC Clean Power Company Limited (IRPC-CP) 299 Moo 5, Sukhumvit Rd., Choeng Noen Sub-district, Muang District, Rayong 21000 Tel: +66 3861 1333, +66 3861 3571-80 Fax: +66 3861 2812-3	A small power producer (SPP) operating a cogeneration plant to generate and supply electricity to EGAT. The surplus electricity and steam are distributed to industrial customers in IRPC Industrial Zone.	THB 3,362,300,000	Common share	THB 3,362,300,000	THB 10/ share	51%
GPSC International Holdings Limited (GPSCIH) Level 54, Hopewell Centre, 183 Queen's Road East, Hong Kong Tel: +852 2980 1888 Fax: +852 2956 2192	To support future overseas investment	USD 100,000	Common share	USD 98,000	-	100%
GPSC Holding (Thailand) Company Limited (GHT) (formerly ENGIE Holding (Thailand) Co., Ltd.) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66 2140 4600	Investment through shareholding in the power generating businesses of Glow Energy Public Company Limited	THB 7,804,100,000	Common share	THB 7,804,100,000	THB 10/ share	100%

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
Glow Energy Public Company Limited (GLOW) 1 Empire Tower, 38 th Floor Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9	Generating and supplying electricity, steam and industrial water to the industrial customers, and distributing electricity to EGAT	THB 14,628,650,350	Common share	THB 14,628,650,350	THB 10/ share	45.67% direct shareholding and 54.16% through GHT
GPSC Treasury Center Company Limited (GPSC TC) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900, Tel: +66 2140 4600	To provide financial management services to the Group companies	THB 20,000,000	Common share	THB 20,000,000	THB 10/ share	100%
Energy Recovery Unit Company Limited (ERU) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66 2140 4600	Power plant generating and supplying electricity and steam as feedstock of TOP's CFP Project	THB 4,658,000,000	Common share	THB 3,315,899,000	THB 10/ share	100%
Global Renewable Synergy Company Limited (GRSC) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66 2140 4600	Investment in power generating business from renewable energy	THB 28,700,000,000	Common share	THB 24,201,733,800	THB 10/ share	100%
Indirect Subsidiary						
Global Renewable Synergy Taiwan Company Limited (GRSC TW) 2F., No. 21, Alley 26, Lane 300, Sec. 4, Ren'ai Rd., Da'an District, Taipei City, Taiwan (R.O.C.) Tel: +886-2-77077200	Investment in power generating business from renewable energy in Taiwan	TWD 10,000,000,000	Common share	TWD 500,000	TWD 100/ share	100% (through GRSC)
Indirect Associate						
Avaada Energy Private Company Limited (AEPL) Unit No. 406, 4 th Floor, Hubtown Solaris, NS Phadke Road, Near Gokhle Flyover, Andheri East, Mumbai, Mumbai City, Maharashtra, India 400069 Tel: +91-22-6140-8000	Solar power producer, generating and distributing electricity to industrial customers and India's government agencies, for instance SECI in India	INR 12,494,622,580	Common share	INR 12,494,622,580	INR 10/ share	42.93% (through GRSC)
Indirect Associate						
CI Changfang Company Limited 68, (26 th Floor), Sec.5, Zhongxiao East Rd., Xinyi District, Taipei 11065, Taiwan (R.O.C.)	Offshore wind power producer in Taiwan	TWD 13,700,000,000	Common share	TWD 12,517,936,000	TWD 10/ share	25% (through GRSC TW)
Indirect Associate						
CI Xidao Company Limited 68, (26 th Floor), Sec.5, Zhongxiao East Rd., Xinyi District, Taipei 11065, Taiwan (R.O.C.)	Offshore wind power producer in Taiwan	TWD 1,200,000,000	Common share	TWD 1,166,128,000	TWD 10/ share	25% (through GRSC TW)

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
EurusPlus Company Limited (EurusPlus) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66-2143-9644 Fax: +66-2143-9645	Investment in power generating business from renewable energy and wind energy in Thailand	THB 416,000,000	Common share	THB 106,625,000	THB 10/ share	51%
BoreePlus Company Limited (EurusPlus) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66-2143-9644 Fax: +66-2143-9645	Investment in power generating business from renewable energy and wind energy in Thailand	THB 720,000,000	Common share	THB 182,625,000	THB 100/ share	51%
Helios 1 Company Limited (Helios1) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66-2143-9644 Fax: +66-2143-9645	Investment in power generating business from renewable energy and ground-mounted solar farms in Thailand	THB 388,000,000	Common share	THB 97,000,000	THB 100/ share	50%
Helios 2 Company Limited (Helios2) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66-2143-9644 Fax: +66-2143-9645	Investment in power generating business from renewable energy and ground-mounted solar farms in Thailand	THB 491,200,000	Common share	THB 122,800,000	THB 100/ share	50%
Helios 3 Company Limited (Helios3) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66-2143-9644 Fax: +66-2143-9645	Investment in power generating business from renewable energy and ground-mounted solar farms in Thailand	THB 64,000,000	Common share	THB 16,000,000	THB 100/ share	50%
Helios 4 Company Limited (Helios4) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66-2143-9644 Fax: +66-2143-9645	Investment in power generating business from renewable energy and ground-mounted solar farms in Thailand	THB 128,000,000	Common share	THB 32,000,000	THB 100/ share	50%
Helios 5 Company Limited (Helios5) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66-2143-9644 Fax: +66-2143-9645	Investment in power generating business from renewable energy and ground-mounted solar farms in Thailand	THB 124,800,000	Common share	THB 31,200,000	THB 100/ share	50%

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
Indirect Subsidiaries						
Glow Company Limited (GCO) 1 Empire Tower, 38 th Floor Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9	To provide administration, consultancy, and advisory services for the management of related business	THB 4,964,924,770	Common share	THB 4,401,668,111	THB 10/ share	100%
Glow IPP Company Limited (GIPP) 1 Empire Tower, 38 th Floor Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9 Plant 42 Moo 8 CIE-8 WHA Chonburi Industrial Estate 1, Bowin, Sri Racha District, Chonburi 20230 Tel: +66 3834 5900-5 Fax: +66 3834 5906	Generating and distributing electricity to EGAT	THB 2,850,000,000	Common share	THB 2,850,000,000	THB 10/ share	95% (through GCO)
Glow SPP2 Company Limited (GSPP2) 1 Empire Tower, 38 th Floor Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9 Plant 11 I-5 Road, Map Ta Phut Industrial Estate, Muang District, Rayong 21150 Tel: +66 3869 8400-10 Fax: +66 3868 4789	Generating and distributing electricity and steam	THB 4,941,534,880	Common share	THB 4,941,534,880	THB 10/ share	100%
Glow SPP3 Company Limited (GSPP3) 1 Empire Tower, 38 th Floor Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9 Plant 11 I-5 Road, Map Ta Phut Industrial Estate, Muang District, Rayong 21150 Tel: +66 3869 8400-10 Fax: +66 3868 4789	Generating and distributing electricity, steam, and industrial water	THB 7,373,389,550	Common share	THB 7,373,389,550	THB 10/ share	100%

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
Glow IPP2 Holding Company Limited (GIPP2) 1 Empire Tower, 38 th Floor Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9	Investment in other companies	THB 7,565,000,000	Common share	THB 7,565,000,000	THB 10/ share	100%
Gheco-One Company Limited (GHECO ONE) 11 I-5 Road, Map Ta Phut Industrial Estate, Muang District, Rayong 21150 Tel: +66 3869 8400-10 Fax: +66 3868 4789	Generating and distributing electricity to EGAT	THB 11,624,000,000	Common share	THB 11,624,000,000	THB 10/ share	65% (through GIPP2)
Glow IPP3 Company Limited (GIPP3) 1 Empire Tower, 38 th Floor Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9	Development of a power generation project	THB 380,000,000	Common share	THB 245,000,000	THB 10/ share	100% (through GIPP2)
Glow SPP 11 Company Limited (GSPP11) 60/19 Moo 3, Siam Eastern Industrial Park, Mabyangporn, Pluak Daeng, Rayong 21140 Tel: +66 3889 1324-8 Fax: +66 3889 1330	Generating and supplying electricity and industrial water to industrial customers, and supplying electricity to EGAT	THB 1,520,000,000	Common share	THB 1,520,000,000	THB 10/ share	100%
Houay Ho Thai Company Limited (HHTC) 1 Empire Tower, 38 th Floor Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9	Investment (shareholding) in other companies	THB 422,152,000	Common share	THB 422,152,000	THB 8/ share	49% (through GCO)
Houay Ho Power Company Limited (HHPC) (Established in Laos) Vieng Vang Tower, (Unit 15), 5 th Floor, No. 502A, Boulichan Rd., Dongpalan Thong Village, Sittasanak District, Vientiane Capital, Lao PDR Plant P.O. Box 661 Pakse, Lao PDR Tel: +856 3621 1720-1 Fax: +856 3621 1719	Hydro power producer, distributing to EGAT and Lao PDR's state enterprise (EDL)	USD 40,000,000	Common share	USD 40,000,000	USD 80/ share	67.25% (through GCO and HHPC)
Glow Energy Myanmar Company Limited (GE Myanmar) (Established in Myanmar) No. 221, Sule Pagoda Road, Unit #10/01, 10 th Floor, Sule Square, Kyauktada Township, Yangon, Myanmar	Provision of technical and consultancy services for the power sector	USD 940,000	Common share	USD 940,000	USD 1/ share	100% (through GCO)

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
Joint Venture						
Thai Solar Renewable Company Limited (TSR) 725 S Metro Building, 19 th Floor, Sukhumvit Rd., Klongton Nua, Wattana, Bangkok 10110 Tel: +66 2258 4530 Fax: +66 2258 4534	Investment (shareholding) in power generation businesses	THB 583,333,400	Common share	THB 583,333,400	THB 10/ share	40%
Nam Lik 1 Power Company Limited (NL1PC) 402B of 4 th Floor, ViengVang Tower, Unit 15, Boulchan Road, Dongpalan Thong Village, Sisattanak District, P.O Box 3684, Vientiane Capital, Lao PDR	Hydro power (run-of-river) producer, generating and supplying electricity to Lao PDR's state enterprise (Electricite du Laos: EDL)	USD 37,200,000	Common share	USD 37,200,000	USD 10/ share	40%
Nava Nakorn Electricity Generating Company Limited (NNEG) 111 Moo 20 Phahonyothin Rd., Khlong 1 Sub-District, Khlong Luang District, Pathum Thani 12120 Tel: +66 2978 5283, +66 2978 5291	A small power producer (SPP) operating a cogeneration power plant to generate and supply electricity to EGAT, and surplus and steam to industrial users in Nava Nakorn Industrial Promotion Zone	THB 2,050,000,000	Common share	THB 2,050,000,000	THB 10/ share	30%
Indirect Joint Ventures						
Siam Solar Energy 1 Company Limited (SSE1) 725 S Metro Building, 19 th Floor, Sukhumvit Rd., Klongton Nua, Wattana, Bangkok 10110 Tel: +66 2258 4530 Fax: +66 2258 4534	A very small power producer (VSPP) generating electricity from solar energy	THB 1,800,000,000	Common share	THB 1,800,000,000	THB 100/ share	40% (through TSR)
Associate						
Bangpa-In Cogeneration Company Limited (BIC) 587 Viriyathavorn Building, Sutthisan Vinitchai Rd., Din Daeng, Bangkok 10400 Tel: +66 2691 9720 Fax: +66 2691 9723	A small power producer (SPP) operating a cogeneration power plant to generate and supply electricity to EGAT, and surplus and steam to industrial users in Bangpa-In Industrial Estate	THB 2,705,000,000	Common share	THB 2,705,000,000	THB 10/ share	25%
Global Renewable Power Company Limited (GRP) 555/1 Energy Complex, Building A, 3 rd Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900	To support investment in renewables businesses by the Company	THB 2,001,500,000	Common share	THB 2,001,500,000	THB 100/ share	50%
Nuovo Plus Company Limited (NUOVO PLUS) 425 Enco Terminal Building B, 5 th Floor, Kamphaengphet 6 Rd., DonMueang District Bangkok 10210	Production and sale of batteries	THB 4,200,000,000	Common share	THB 3,675,000,000	THB 10/ share	49%

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
Indirect Associate						
Global Renewable Power Operating Company Limited (GRPO) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66 2140 4600	Provision of management, maintenance and operation services for solar farms	THB 3,000,000	Common share	THB 3,000,000	THB 100/share	50% (through GRP)
N.P.S Star Group Company Limited (NPS) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66 2140 4600	A very small power producer (VSPP) generating electricity from solar energy	THB 293,700,000	1,174,800 common shares and 1,762,200 preferred shares	THB 293,700,000	THB 100/share	50% (through GRP)
World Exchange Asia Company Limited (WXA) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66 2140 4600	A very small power producer (VSPP) generating electricity from solar energy	THB 293,700,000	1,174,800 common shares and 1,762,200 preferred shares	THB 293,700,000	THB 100/share	50% (through GRP)
P.P. Solar Company Limited (PPS) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel: +66 2140 4600	A very small power producer (VSPP) generating electricity from solar energy	THB 82,000,000	Common share	THB 82,000,000	THB 100/share	50% (through GRP)
Global Renewable Power One Company Limited (GRP1) 555/2 Energy Complex, Building B, 5 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900 Tel : +66 2140 4600	To accommodate future renewable energy investment in Taiwan	THB 570,000,000	Common share	THB 570,000,000	THB 100/share	50% (through GRP)
Sheng Yang Energy Company Limited (SYE) 1F, No. 160, Sec. 1, Fuxing S. Rd., Da'An District, Taipei City Tel: +886 2 259 5252	A solar power producer, supplying to Tai Power in Taiwan	TWD 2,000,000,000	Common share	TWD 1,188,760,000	TWD 10/share	45% (through GRP1)
GPSC Singapore Pte. Limited (GPSCSG) 38 Beach Road #29-11 South Beach Tower Singapore (189767)	To support future overseas investment	USD 16,020,100	Common share	USD 15,720,100	USD 1/share	49% (through NUOVO PLUS)
Eastern Seaboard Clean Energy Company Limited (ESCE) 1 Empire Tower, 38 th Floor, Park Wing, South Sathon Rd., Yannawa, Sathon, Bangkok 10120 Tel: +66 2670 1500-33 Fax: +66 2670 1548-9	Investment (shareholding) in other companies	THB 1,039,000,020	Common share	THB 10/share	THB 10/share	33.33% (through GIPP3)

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
Chonburi Clean Energy Company Limited (CCE) 40/5 Moo 8 WHA Chonburi Industrial Estate 1, Bowin Sub-District, Sri Racha District, Chonburi 20230 Tel: +66 6571-7779-6 Fax: +66 2670-1548-9	A very small power producer (VSPP) generating electricity from industrial waste	THB 989,000,000	Common share	THB 989,000,000	THB 10/ share	33.33% (through ESCE)
Long-term Investment						
Ratchaburi Power Company Limited (RPCL) 1828 Sukhumvit Road, Bangchak Subdistrict, Phra Khanong District, Bangkok 10260 Tel: +66 2311 5111-9 Fax: +66 2332 3882	Independent Power Producer (IPP) operating a combined-cycle power plant to generate and supply electricity to EGAT	THB 7,325,000,000	Common share	THB 7,325,000,000	THB 10/ share	15%
Business Services Alliance Company Limited (BSA) 555 PTT Office, Phra Khanong Oil Depot, Art - Narong Road, Khlong Toei, Bangkok 10260 Tel: +66 2239 7328 Fax: +66 2239 7326	Provision of human resource management for PTT Group	THB 2,000,000	Preferred share	THB 2,000,000	THB 10/ share	25%
24M Technologies, Inc. (24M) Cambridge Office, Massachusetts, U.S.A. Tel: +161 7553 1012	Research and development of lithium-ion batteries for energy storage in the industrial sector and for enhancement of power distribution and power network security	USD 152,731,158	Preferred share	USD 113,480,250	USD 0.001 /share	14.17%
Sarn Palung Social Enterprise Company Limited (SPSE) 555/1 Energy Complex, Building A, 10 th Floor, Vibhavadi Rangsit Rd., Chatuchak, Bangkok 10900	Production and sale of goods and/or services for the benefit of society, communities, and the environment	THB 10,000,000	Common share	THB 10,000,000	THB 10/ share	10%
Long-term Indirect Investment						
Sport Services Alliance Company Limited (SSA) 199/7 Moo 1, Tambon Choeng Noen, Muang District, Rayong 21000 Tel: +66 3894 8138 Fax: +66 3894 8139	Management of a football club for PTT Group	THB 5,000,000	Common share	THB 5,000,000	THB 10/ share	25% (through BSA)
Anhui Axxiva New Energy Technology Company Limited (AXXIVA) Wanchun Intelligent Electronic Industrial Park, Wuhu Economic and Technology Development Zone, Wuhu City, Anhui Province, China	Production of batteries for EVs in China	RMB 368,238,385	Equity Interest	RMB 312,209,783.07	-	10.31% (through GPSCSG)

Company	Type of Business	Registered Capital	Type of Share	Paid-up Capital	Share Value	GPSC's Shareholding
Eastern Fluid Transport Company Limited (EFT) 2, Muang Mai Map Ta Phut 6 Rd., Huai Pong Subdistrict, Muang District, Rayong 21150 Tel : +66 3868-7513-4 Fax : +66 3868-7512	Provision of maintenance for pipeline structure installation and management of the system for pipeline installation	THB 10,000,000	Common share	THB 10,000,000	THB 10/ share	15% (through GLOW)

1.3.2 Relationship with major shareholders' business group

PTT Group is GPSC's major shareholder, namely through (1) PTT Plc, 55.23% shares of the paid-up capital (including 7.96% by Siam Management Holding Co., Ltd., a wholly owned subsidiary of PTT Plc), (2) Thai Oil Plc, 10.00% shares, (3) PTT Global Chemical Plc, 10.00% shares. GPSC's business relationship and transactions with these are considered normal business practices, such as the sale of electricity and steam to PTT Group and GPSC's purchase of natural gas from PTT. Moreover, GPSC cooperated with PTT in establishing companies for the development of renewable-energy businesses overseas as well as energy (battery storage) systems and battery value chain investment to accommodate EVs, following the Government's auto-industry promotion policy, which is in line with GPSC's business strategies to grow and expand businesses together with PTT Group.

1.3.3 Shareholders

GPSC's top ten shareholders as of the roster-closing date (XO) on December 30, 2022 are:

No.	Name	Number of Shares	%
1	PTT Plc	1,332,955,135	47.27
2	PTT Global Chemical Plc	281,972,937	10.00
3	Thaioil Plc	281,972,937	10.00
4	Siam Management Holding Company Limited	224,431,735	7.96
5	Thai NVDR Company Limited	69,961,400	2.48
6	Social Security Office	50,677,595	1.80
7	South East Asia UK (Type C) Nominees Limited	35,107,810	1.25
8	State Street Europe Limited	14,462,859	0.51
9	Mr. Sompob Tingthanathikul	9,600,000	0.34
10	Krungsri Dividend Stock LTF	8,610,800	0.31

Remarks: The data above were recorded on the roster-closing date (XO) on December 30, 2022, and were the latest available when this report was compiled.

Limitation of Share Transfers

There is no limitation except for share transfers to foreign investors that give them more than 49% of the total shares in GPSC.

1.4 Issuance of Other Securities

GPSC's bonds are unsubordinated and unsecured. As of December 31, 2022, its bonds not yet mature for redemption were:

Bond number	Amount (THB Million)	Annual Interest Rate	Age/Maturity	Credit Rating
GPSC249A	1,500	2.82% Interest paid every 6 months	7 years September 29, 2024	A+ (tha) by Fitch (TH)
GPSC22NA	2,000	1.97% Interest paid every 6 months	3 years November 8, 2022	AA+ By TRIS
GPSC24NA	5,000	2.24% Interest paid every 6 months	5 years November 8, 2024	AA+ By TRIS
GPSC26NA	6,000	2.52% Interest paid every 6 months	7 years November 8, 2026	AA+ By TRIS
GPSC29NA	8,000	2.86% Interest paid every 6 months	10 years November 8, 2029	AA+ By TRIS
GPSC31NA	7,500	3.15% Interest paid every 6 months	12 years November 8, 2031	AA+ By TRIS
GPSC34NA	6,500	3.25% Interest paid every 6 months	15 years November 8, 2034	AA+ By TRIS
GPSC258A*	1,500	2.11% Interest paid every 6 months	5 years August 7, 2025	AA+ By TRIS
GPSC308A*	1,000	2.94% Interest paid every 6 months	10 years August 7, 2030	AA+ By TRIS
GPSC358A*	2,500	3.24% Interest paid every 6 months	15 years August 7, 2035	AA+ By TRIS
GPSC256A*	1,000	2.55% Interest paid every 6 months	3 years June 10, 2025	AA+ By TRIS
GPSC276A*	3,000	3.04% Interest paid every 6 months	5 years June 10, 2027	AA+ By TRIS
GPSC306A*	1,000	3.56% Interest paid every 6 months	8 years June 10, 2030	AA+ By TRIS
GPSC326A*	3,000	3.75% Interest paid every 6 months	10 years June 10, 2032	AA+ By TRIS
GPSC376A*	4,000	4.40% Interest paid every 6 months	15 years June 10, 2037	AA+ By TRIS

Remark: Green Debenture

1.5 Dividend Policy

1.5.1 Dividend Policy of GPSC

GPSC pays out as dividends no less than 30% of its net profit under financial statements after deducting all provisional reserves required by laws and obligations under the terms of loan contracts. Dividend payment is subject to future investment plans, necessities, and other suitability. Once the Board has decided on annual dividend payment, it must seek approval from the shareholders' meeting. An exception is for interim dividend payment, which the Board can approve and report to the next shareholders' meeting.

GPSC's dividend payment (THB/share) since SET listing

Year	Dividend Paid (THB/Share)			Dividend : Net Profit (%)
	First Half	Second Half	Full Year	
2015	0.35	0.60	0.95	75
2016	0.45	0.70	1.15	64
2017	0.45	0.80	1.25	59
2018	0.45	0.80	1.25	56
2019	0.50	0.80	1.30	74
2020	0.50	1.00	1.50	56
2021	0.50	1.00	1.50	58
2022	0.20	0.30	0.50*	158

Remarks:*Board Meeting No. 2/2023 of February 10, 2023 endorsed a dividend payment proposal for approval by the 2023 AGM for the performance of GPSC and subsidiaries in 2022 at THB 0.50 per share or about 158% of the net profit under the 2022 consolidated financial statements. This broke down into interim payment for the first half of the year (January to June) at THB 0.20 per share, which was paid on September 21, 2022. As a result, dividend payment for the second half of the year (July to December) equaled THB 0.30 per share. The rights to receive these dividends were subject to approval by the 2023 AGM.

1.5.2 Dividend Policy of Subsidiaries

With the endorsement of the board of each subsidiary, this matter may be raised for the shareholders' meeting to approve for each given year. Dividend payment must take into account essential investment plans and other suitability, including the subsidiary's cash flow after legal provisions.



2. Risk Management

2.1 Risk Management Policy and Plan

Amid transformation of the business context due to external factors, which is currently so volatile and increasingly severe, as well as internal factors affecting GPSC's operations, GPSC Group is determined to value and recognize its business goals in parallel with its pledge and responsibility to all. Risk and opportunity management therefore represents a vital tool advocated by GPSC, which also urged its development and application to performance oversight, monitoring, and assessment. For these actions ensure that, whatever the business context, GPSC has anticipated and assessed potential outcomes and pursued mitigation and better business opportunities while striving for optimal benefits for the corporation and stakeholders under its strategies and goals.

Our applied tools and approaches for risk management conform to the principles laid down by the Committee of Sponsoring Organizations of the Treadway Commission (COSO ERM 2017), which is internationally accepted as well as supported and concretely driven by all executives and employees in policy management structure and operations. Our structure consists of two levels.

- At the corporate level: The Risk Management Committee (RMC) appointed by the Board of Directors defines risk management policy and risk management framework, supervising and issuing guidelines for management to execute in line with changing environments.
- At the management level: The Risk Management and Internal Control Committee (RMCC) drives policy implementation and monitors as well as managing all risk management activities, including prompt responses to emerging risks.

In addition, we value the management of specific risk exposures through designated subcommittees including

- The Operation Management Committee (OMC) in charge of scrutinizing and managing operational risk in all activities concerning operations.
- The Strategic Investment Committee (SIMC) in charge of scrutinizing, monitoring, and reviewing all investment project risk exposure.
- The Hedging Committee in charge of scrutinizing, overseeing, and conducting risk management concerning prices of feedstock, products and financial side of GPSC Group as a whole.

We also value the Audit Committee's governance of risk management adequacy and the Board's annual review of efficiency to ensure that the company has applied risk management tools in support of concrete business efficiency.

2.2 Risk Management Culture

We strictly adhere to the philosophy of management focusing on value creation for all stakeholders, underlined by a good corporate culture. We value the nurturing of a corporate culture with a strong foundation for systematic risk management to successfully. The system calls for clearly defined risk management policy, risk appetite framework, employee's role a responsibility, enterprise risk governance, training & development programs using e-learning and workshops targeted to cover both executives and operational level. Moreover, GPSC also uses risk management as one of key performance indicators to executives and employees in order to motivate business pursuit of our goals through an efficient risk management process.

2.3 Risk Factors Affecting GPSC's Businesses

Below is an overview of key risks facing GPSC:

2.3.1 Risks Affecting GPSC's and GPSC Group's Businesses

Strategic Risks

(1) Investment and Business Expansion

GPSC strives to be the power industry leader with goals under the 4S strategy to maintain and extend current competitiveness and grow further domestically as well as internationally in the domains of conventional energy, renewable energy, S-Curve and Battery Business, i.e. the battery, chain EV and related businesses, and a shift to customer-centric solutions. Our approach to managing key projects is to

- Cooperate with PTT Group
- Pursue cooperation with business partners well-versed in the business
- Enter into mergers with high-potential businesses.

This year, GPSC faced assorted external challenges, whether rising fuel prices due to regional unrest or volatility of exchange rates and interest rates due to economic situations, which impacted profitability on the macro scale. Nevertheless, we successfully grew our renewable energy business in India as part of the Second Home investment strategy and grew capacities of conventional energy through new projects and SPP replacement projects. GPSC now command 7,227 MW in capacity, of which 37.70% is the capacity derived from renewable energy, which decreased our revenue impact concerning fluctuating prices of fuels and electricity.

(2) Organizational Capability

It is undeniable that the work model arising from Covid-19 over the past few years has accelerated work model and procedural transformation in all organizations. Under the strategy of long-term business

development to diverse and emerging businesses, we now command human resources made up of different age groups and generations. Organizational capability development is therefore critical to corporate strength, for it leads to integration of knowledge as well as collaboration in support of business growth. With this in mind, we provided oversight of the integration of caliber and upskilling of employees, recruitment of talents, management of organizational structure readiness, and the advocacy of a work culture to promote personnel with specific expertise in selected businesses or areas in new target countries. This aligns with GPSC's growth direction and supports pursuit of new long-term business opportunities.

Thanks to the success of organizational capability management under the ACT SPIRIT values of producing smart, conscientious, and responsible people, this year GPSC sent personnel to India to support and jointly develop a renewable-energy platform with AVAADA Energy. This is a key project expanding our renewable-energy portfolio, reflecting a goal of more than half of our portfolio capacity. This secondment also enhanced our pursuit of new business opportunities in that country, a market with long-term potential. Our businesses now boast readiness of proficient staff, illustrated by relentless production efficiency, availability, and reliability of power generation and distribution. This year we recorded a 40% superior statistic on machine stoppages and unplanned shutdowns to 2021, while creating more than 2.3 billion Baht in synergy value, exceeding the plan, which had envisaged this feat by 2025.

(3) Changed Rules and Regulations

Current, pending, or probable laws and regulations enforced domestically, regionally, or internationally tend to produce business obstacles to GPSC or its customers, or both. On the other hand, these laws and regulations could accompany our business opportunities.

We therefore value risk management and business opportunities accompanying shifting laws and regulations, notably those directly connected to our strategies and business practices, for instance, the policy on increased the power capacity derived from renewable energy under PDP 2018 Rev. 1, the Third Party Access Code (TPA Code), the policy on greenhouse gas reduction (GHG), and the promotion of EVs. We've monitored data movement to analyze and plan mitigation of impacts, including our pursuit of investment opportunities under the policy of increased power capacity through renewable energy to lower risks to GPSC and customers posed by laws and regulations of the public sector and social regulations concerning GHG emissions. To this end, a dedicated business division is tasked with developing and updating a database of rules and regulations to track changes affecting our operations. This group collects relevant updated data and social trends, providing analyses and situation assessment in order to define strategies or adaptation plans in the face of potential impacts. At the same time, we relentlessly assess and verify our own performance to ensure alignment with laws, regulations, and requirements of various agencies. Employees are also responsible for promoting and nurturing the culture and corporate values of compliance, good governance, and a code of conduct as we strive to become a good corporate citizen with responsibility to the community, society, the environment, and all stakeholders.

(4) Climate Change

GPSC recognizes the ongoing climate change, which the international community (Thailand included) has taken seriously and formed a common pledge to take remedial actions leading to a common international goal for GHG reduction under supervised emission, with guidance on issuing laws and regulations to lower GHGs further. In the meantime, society has actively responded to the impacts of climate change. Thus, transformation of lifestyles and business activities is

forthcoming. This represents our risk requiring clear, tangible, and timely handling and management. We will address this with the business commitment to lessen CO₂ intensity by 35% by 2030, to achieve carbon neutrality by 2050, and to achieve Net Zero GHG emissions by 2060. This year saw GPSC drive its operations in support of these goals through activities like growing our renewable energy business, improvement in machinery and energy efficiency, and optimization of overall integration of production and distribution. These actions have not only lowered GHG emissions in the production stage, but also lowered expenditure and yielded higher business returns. We also sought long-term business opportunities under the context of sustainability in line with our pledge to all sectors, including scaled-up research of technology where GHG emissions are reduced, the carbon capture and storage (CCS) to accommodate future business opportunities, and an research of new energy like hydrogen with allies and PTT Group. The purpose is to integrate the capability and knowledge of each entity across the business value chain. Besides lowering potential impacts on society, businesses, and the public sector from GHG reduction, the exercise has illustrated our determination to play a part in fostering sound and global sustainable society and environment over the long term.

Operational Risk

(1) Power Plant Reliability

GPSC's core business is power and steam generation under the goal of delivering products of high quality and stability to customers in support of our own businesses and to prevent our customers from damage to their operations while supporting national economic growth and energy security. As a result, risk management concerning power generation and distribution reliability is our top priority. Our key current risk management action is to enhance our personnel's specialized skills and forge confidence to customers in our capability

of operation and maintenance. This is done through training from GPSC's power academy and on-the-job training. At the same time, we've restructured our organization to cater to asset management in parallel with power and steam network integration and plant optimization among GPSC Group. Not only has this been our joint capacity management, but it has also represented our synergistic efforts and additional financial returns on our assets.

We also value work efficiency improvement under the Operational Excellence Management System (OEMS), which frames PTT Group's operations, and have introduced assorted international standards that are helpful and suit our own business context, including ISO 9001:2015 on quality management, ISO 14001:2015 on environmental management, and ISO 45001:2018 on safety and occupational health management, ISO 22301:2019 on business continuity, and ISO 27001:2013 on IT security. That way, GPSC ensures operations under international standards and is poised to cope with crisis management to continuously deliver products and services.

(2) Quality, Security, Safety, Health, and Environment

GPSC recognizes the value of loss from risk concerning to security, safety, occupational health, and the environment to prevent losses of life, injuries, and illnesses among employees and contractors as well as business losses resulting from disruption and discontinuity of operations together with impacts on communities, society, and the environment. We therefore advocate Operational Excellence (OE) to improve, enhance, and develop safety operation, stability, management ability, and sustainability by zooming in on minimizing accidents, incidents, and zero unplanned machine stoppages by 2025. To this end, we cultivate awareness and supervision of operations under the scope of the Quality, Security, Safety, Health, and Environmental Policy. Beyond this commitment

we've instilled a "WE SAFE" organizational culture with attitudes of "Work Safely, Care for All, Think before Acting, and Stop if It's Not Safe". We promote an organizational culture to employees and contractors in the following ways:

- Establish and announce a Quality, Security, Safety, Health, and Environmental Policy
- Establish a Safety, Health, and Environmental Committee for all operating areas
- Implement contractor safety management
- Implement health risk assessment, industrial hygiene, and Fit-to-Work programs
- Prepare safety manuals for all employees and contractors
- Consistently advocate a "WE SAFE" corporate culture
- Set strategic short-term and long-term operational targets for safety and health
- Develop suggestion programs and mandate routine reporting on substandard acts and conditions, incident reports, and investigation programs
- Implement ISO 45001:2018 on health and safety management and a business continuity management plan under the ISO 22301:2012 standard
- Enforce work environmental management in all operating areas.

In addition, GPSC is committed to advocacy of efficiency and strategic activities to ensure that the corporation achieves its goals through corporate and individual KPIs. As a result of the ongoing Covid-19 pandemic, this year, GPSC has strictly complied with public-sector measures and guidelines through close supervision of a GPSC Group center to monitor the spread of the virus in all areas. Thanks to full cooperation among all employees and proactive measures, we've efficiently achieved our objectives. Our entire operation has also been uninterrupted.

(3) Management of Projects under Construction

To prevent negative impacts on the reliable delivery of power and steam to customers and achieve financial performance aligned with our budget plan for projects under construction, we carefully monitor and supervise all project stages through completion to meet deadlines and stay within the budget while maintaining efficiency.

Typical construction risks deal with construction work, instruments, installation delays, overbudgeted expenditure, engineering complications, and environmental constraints that could harm communities and stakeholders, in addition to contract management. This year also contained additional factors, including conflicts between countries, fluctuating exchange rates, intensified geopolitical situations, and the lingering Covid-19—all of these affect project quality management. Our emphasis begins with the design and the approval project investment which suited business contexts. We select credible contractors with specific skills, use careful turnkey contracts for construction work, prudent project monitoring, and selection of machinery sources. We also pursue regular communication and engagement with adjacent community stakeholders for a good understanding and perception of the project. Additional third-party technical and project management consultants are recruited to supervise and inspect as well as closely monitoring project work in progress. Each week, direct reporting to management executives are required to closely manage uncertainties and stay vigilant, prevent, and mitigate potential impacts. Finally, in place is a process to regularly report work progress internally among various business functions.

Two projects are currently under construction and controlled by GPSC in Rayong and Chon Buri:

- Construction and installation of an energy recovery unit (ERU), a subproject of Thai Oil Plc's Clean Fuel Project (CFP), located within the refinery compounds in Chon Buri. The project initiative is to recover oil residue from the oil distillation unit in the refinery and turn it into power generation and steam to run various distillation units.

- Construction of Glow Energy Phase 2 and Glow SPP 2, which feature new power plants replacing old ones under the Firm VSPP cogeneration (the SPP Replacement Program).

(4) Imbalanced Fuel Supply Portfolio

Natural gas and coal are primary energy sources for power and steam generation in Thailand, so managing fuel supply risks is critical to maintain generation stability. Over-reliance on any fuel supply often creates fuel supply portfolio imbalances. GPSC manages these risks by securing long-term natural gas supply contracts with PTT Plc. Owing to the proximity of our facilities to PTT's fuel storage terminals and main gas pipeline, the risk to fuel supplies has relatively diminished.

To manage continuity, we also mitigate coal supply risks with various short-term and long-term contracts and supply sources, depending on market conditions. Contingent supplies of spot-market coal can be arranged in an emergency.

Under today's volatile fuel prices, GPSC conducts price hedging in parallel with supply contract management and proper plant optimization under the terms concerning power supply to EGAT and customers to ease impacts and optimize benefit to GPSC and all sectors under the supervision of the Hedging Committee.

(5) Fraud and Corruption in Business

We deeply value the cultivation of workforce integrity and transparency to all employee. They are required to recognize their duties in conforming to good governance and the GPSC Code of Conduct, which are in congruence with GPSC's Corporate Governance. We tolerate no corruption and take very seriously the prevention of improper actions or illegal actions, or both, whether by accepting or giving benefits in monetary or other forms by any employees or business partners. We achieve this by stating an anti-corruption policy for all to acknowledge and observe throughout the company. Guidelines developed for giving and accepting gifts, entertainment, or other benefits frame

proper work practices and help employees address corruption risks. Whistleblowing channels are in place for corrupt practices, and so are written measures to aid assessment, detection, and response to corruption. To underline our total commitment to transparent business conduct, we've required assessment of corruption risks via annual reporting to the Risk Management Committee, which is in line with the intent of the Thai Private Sector Collective Action against Corruption (CAC), to which GPSC belongs. Thanks to efficient performance under international practices, this year GPSC and its workforce have maintained a sound record of no shortcoming and no involvement in any corrupt practices.

Financial Risks

(1) Over-reliance on Industrial Customer Income

GPSC's strategies and plans for growth in renewable energy and emerging businesses cater to our business mission under GHG emission reduction while catering to business sustainability under the context of the consumption culture under prevailing energy consumption models and styles. This is a boon to GPSC's capability for risk management concerning business structure and revenue, for a company which relies on power and steam distribution to customers in certain areas. This year, thanks to GPSC's success in growing business to renewable energy and foreign lands, our power generation structure features a 37% proportion in renewables, with rising profitability from these energy forms. As a result, we've successfully managed the risk of imbalanced revenue and revenue structure.

As for the management of core revenue derived from power generation and public utilities, most of which are located in Rayong industrial estates, we've solved our income imbalance through our diverse group of customers, including petrochemical plants, chemical plants, the automotive industry, and steel complexes. With customers, GPSC also pursue energy management services, whether rooftop solar power

generation and distribution or joint pursuit of clean-energy opportunities from other areas via distribution systems of electricity authorities under the TPA Code, which is currently under a pilot project. These illustrate our search for business opportunities between GPSC and business partners.

(2) Referenced Price to Power Generation & Distribution Volatility

For power plants under the IPP and SPP schemes, GPSC can transfer fuel supply costs from gas and coal to the Electricity Generating Authority of Thailand (EGAT) under power purchasing agreements (PPAs). The same cost transfer isn't possible for power and steam generation and distribution to industrial users, thus creating some fuel supply price volatility. The prices of gas and coal (our main fuels) fluctuate all the time with a monthly referenced price. A certain portion of gas costs is transferred to customers under price formulas stipulated under agreements. However, the retail power rate is strictly controlled by the Energy Regulatory Commission (ERC) and priced partially under an automatic adjustment mechanism (Ft). This retail power rate doesn't always reflect fuel supply costs, but rather periodically. This has created some risk to our income occasionally—especially when the price of gas spikes.

This year has seen a drastic impact on GPSC and affiliates of the volatile fuel price situation and the public sector's policy to fix Ft although power tariffs partially reflect changes in the prices of gas and coal. GPSC therefore mounted risk management by monitoring and planning activities with customers in parallel with stress tests to closely monitor and analyze financial impacts. In addition, we took steps to become ready for cashflow management and leveraged ways to administer expenses, improve production efficiency, and accelerate incremental profits from integrating capacities of assets in the power and steam distribution network, and advocated joint pursuit of incremental value among affiliates to minimize impacts on our bottom line.

(3) Funding Management for Business Expansion

With plans to continually grow power & related businesses expansion in Thailand and overseas, GPSC has defined criteria and processes for investment scrutiny that are suitable and align with short-term and long-term strategies and goals while supervising investment and audit returns as well as performance on approved projects. In addition, GPSC prepares funds in support of future investment plans by considering liquidity and cash flow in various aspects to select capital mobilization tools and models that suit cash needs and align with economic and financial market conditions to optimize benefit to GPSC, preserve a suitable financial structure, and maintain GPSC's credibility ratings.

To this end, we've formed a new entity, GPSC Treasury Center Co., Ltd., as a treasury center for the group to facilitate fund-raising activities and for optimal benefit of financial management by GPSC Group.

(4) Interest Rate Volatility

Loans from financial institutions are the most common option for investment because of low volatility. Loans generally come in fixed and float rates. GPSC effectively manages proportions of fixed and float interest rates for the nature of its businesses.

(5) Exchange Rate Volatility

We plan our overseas project financing carefully—especially when investments are in foreign currencies. Fluctuating exchange rates are closely monitored so that we can mitigate exchange rate volatility risks, including hedging instrument choices, under a policy scope approved by the Risk Management Committee and administered by the Hedging Committee. This enables prompt actions in the best interests of GPSC.

2.3.2 Shareholder Investment Risks

(1) Credit Risks

Generally, bond holders willingly take some risk to their principal and dividends when bond issuers' performance falls short of expectations and the collateral is less than the overall debt. Investors are thus advised to consider the issuer's financial status and ability to redeem or refund debt stipulated in the bond according to the prospectus, in conjunction with the issuer's credit risk assessment and the credit rating reported by the credit rating agency before making investment decisions. Credit rating generally helps indicate the risk level of the bond and issuer. The return on investment reflects the credit risk: the higher the risk, the higher the return. Investors can learn about bond issuers and their credit ratings from SEC's website, credit rating agencies, or the Thai Bond Market Association.

(2) Price Risks

Net asset value of bonds can be volatile, depending on money market movements and interest rate changes, the interest rate policy fixed by the Bank of Thailand, general economic conditions, inflation rates, remaining tenors, excessive demand, or bond supply shortages in the market. Bond holders may thus be affected by net asset value volatility when disposing of them before the due date.

(3) Liquidity Risks

Generally, bond holders may not be able to dispose of bonds before maturity when there is no liquidity in the secondary or over-the-counter markets. However, if the issuer doesn't book their bonds for trade in the bond electronic exchange (BEX) facility, private bond holders can exchange them at commercial banks, securities companies, or other entities holding securities and bond-trading licenses.

Another obstacle for bond holders is SEC regulatory controls including:

- SEC announcement Kor Jor 5/2552 dated March 13, 2009, and subsequent relevant announcements on definitions of terms used in the issuance and public offering of all bonds.
- SEC announcement Kor Jor 4/2560 dated February 8, 2017, and subsequent related announcements on definitions of institutional investors, special major investors, and other major investors with the exception of inheritance transfers.

Under these announcements, holders can't sell or transfer their subscribed bonds to anyone publicly, except to institutional investors and major investors. Because of the condition stipulated in the issuance public offer that the issuer registered with SEC before the public offering strictly controlling the disposal and transfer be made among institutional and major investors, the subscribers who later become bond holders endorsed and agreed to adhere to before the actual subscription.

(4) Default Risks

GPSC has no records of default on either principal or interest for bonds, mortgages, or loans from commercial banks, finance and securities firms, credit fonciers, and specialized financial institutions (SFIs). It bears no records of default during 2017-2022.

2.3.3 Foreign Securities Investment Risks

GPSC has no investment in foreign securities.

2.3.4 Emerging Risks

(1) Geopolitical Risks

Amid international conflicts and international challenges from geopolitics and polarization, economic recoveries under Covid-19 policies of Thailand and other countries, in addition to fluctuating exchange rates, interest rates, and inflation rates arising from fragile economies,

all sectors are facing challenges of emerging risk management at both macro and business levels. These challenges are complicated and interconnected, with severe rippling international impacts. GPSC views these as the context of emerging risks, with the tendency of lingering on over the next 1-2 years, thus causing us to closely monitor and supervise activities to address uncertainties.

- Rising fuel (gas and coal) prices under the power tariff rates of the public sector's policy, which do not reflect to actual fuel costs, which in short term affect the energy industry, notably the power sector. GPSC manages such impacts through fuel price formulas, based on reference prices for power generation and distribution under power distribution contracts. Further, we manage the impacts through plant optimization; coordination with customers and business partners; expense reduction; and production efficiency improvement to minimize unplanned shutdowns and trim overall production costs. In place is coordination with related third parties in the industrial, production, and energy groups as well as the public sector to drive policy and proper practical approaches for the optimal benefit of all sectors, covering industrial production sector and the private sector.
- Fiscal policy management under controlled inflation rates and the tightened international economies have affected GPSC's financing cost management through exchange rates and interest rates. Our revenue and expenditure (for feedstock supply and project investment) are managed and risk management of exchange rates is conducted by the Hedging Committee. We also monitor interest rate situations and financing costs to identify suitable and optimal financial tools.
- Geopolitical risks arise from regional and national conflicts, potentially leading to polarization. This factor is considered and managed under GPSC's growth strategy in focus countries. To this end,

we manage risks and impacts from the selection of project investment (with short-term and long-term impact assessment), identification of local business partners, investigation and monitoring of in-depth business surroundings through our man-on-ground, to consideration of the exit strategy.

(2) Cybersecurity Risks

Aiming to improve the ultimate productivity of work by digital technologies, our GPSC plant and supporting functions rely heavily on digital technologies and the internet. Add to this the need to adapt and partial online work from homes amid the Covid-19 epidemic, which requires connection with the external internet. Thus IT threats from internet connections have become unwelcome risks.

To become better prepared for IT security in both information technology (IT) and operation technology (OT) as well as comply with the Cybersecurity Act and standards for international cybersecurity practices, namely ISO 27001:2013 (of which GPSC has earned certification), GPSC has implemented these reactive and proactive measures:

- Appointing a Digital and Cybersecurity Steering Committee (DCSC) to oversee and drive change management as well as assessing digital risks and cybersecurity. DCSC also screens various projects to ensure alignment with GPSC's strategies and businesses. Also, defining a cybersecurity policy for GPSC Group and forming dedicated taskforces in charge of short-term and long-term management.
- Educating the workforce on various IT threat patterns and related procedures for protecting against and handling each threat to minimize escalating damage to the company.
- Periodically testing the system with self-instructed decoys and organizing lessons learned to nurture awareness for the workforce on IT application
- Regularly organizing workforce drills to respond to IT threats for office support functions

- Regularly performing information system tests and cyber drills in case of emergency threats to operating areas.

(3) Disruptive Technology Risks

Disruptive technology has been rapidly driving energy technology transformation, leading to changing consumer behavior for industrial and public users. This includes energy transition, heavily influenced by the stride toward sustainability, together with impacts on future laws and regulations on GHG emission reduction. These uncertainties amid change in today's businesses and innovation business development are inevitable. To tackle such risks and preserve the stability as well as security of business over the long term, we've developed the following guidelines:

- Aggressively continue with the New S-Curve business model beyond the existing power-generating business model to support future growth. This new model includes storage battery manufacturing; energy storage system development and related businesses; and research and development (R&D) investment in emerging energy technologies to maintain our competitive advantages and drive our vision to become the leading innovative energy company.
- Actively develop business model to be the system integrator to integrate the management of power generation and consumption such as Micro-Grid and Smart-Grid.
- Develop new energy trade platform to cope with new behaviors of users, simultaneously reducing impacts on current and future power generation and distribution operations.
- Study and develop carbon capture, utilization, and storage (CCUS) technology and the hydrogen business to ready ourselves for future constraints over GHG emissions and shape alternative business opportunities for GPSC.



3. Pursuit of Sustainability

3.1 Policy and Goals of Sustainability Management

Policy and Goals of Sustainability Management

Committed to its role as the Power Flagship of PTT Group, GPSC defines its policy and goals of sustainability management following the guidelines of sustainable development. It strives to foster confidence among stakeholders, abide by work excellence, demonstrate business transparency, constantly develop assorted innovations, and look after community, society, and the environment in a responsible way. To this end, GPSC commands practices underlined by PTT Group's approach to sustainability management, national strategies, and internationally accepted sustainability practices together with the United Nations Sustainable Development Goals (SDGs). This policy applies to all units across GPSC's supply chain. All executives and employees must support, drive, and comply with the defined policy and sustainability management scope.

For details of the policy and goals of sustainability management, please log on to <https://www.gpscgroup.com/en/downloads/policy/sustainability-management-policy>

Goal-setting and business operations that support UN SDGs

GPSC is committed to developing and growing in a sustainable way to be part of the drive toward UN SDGs. The Group's activities address SDGs appropriately and agree with the vision, mission, nature of business, strategic plans, and critical issues concerning sustainability and stakeholders' expectations. As a result, GPSC has selected seven out of 17 SDGs: SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth), SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and communities), SDG 12 (responsible consumption and production), SDG 13 (climate action), and SDG 16 (peace, justice and strong institutions). These SDGs shape GPSC's sustainable development management approach for the benefit of all stakeholders.

For more details of the company's action plans and long-term goals, please log on to <https://www.gpscgroup.com/en/sustainability/gpsc-sustainability/gpsc-sustainability-strategy-and-sdgs>

GPSC is relentlessly committed to business development for sustainability under the four-aspect management scope embracing all three ESG aspects and aligning with SDGs to achieve the goal of creating long-term value, innovation, and sustainable energy together with goals for GHG reduction that are in tune with international goals. To this end, it operates under the 4S strategy: S1: Strengthen and Expand the Core, S2: Scale-up Green Energy, S3: S-Curve & Batteries, and S4: Shift to Customer-Centric Solutions. GPSC also set goals for capacity expansion ratios by focusing on more than 50% of renewable-energy (renewables) power generation by 2050 and improving the generation efficiency of the power plants running on conventional fuels. To elaborate, the Carbon Capture and Storage (CCS) and Hydrogen Technology will be applied to raise combustion efficiency and lower carbon formation, which will play a key role in the drive toward Net Zero Emissions by 2060, designed to resolve climate change and take part in a move to combat global warming under the UN Framework Convention on Climate Change (UNFCCC).

This year's assessment of materiality issues identified a changing context due to external factors with positive and negative impacts as well as long-term value addition for stakeholders and businesses. These forces arise from inside and outside GPSC, whether it is joint rehabilitation of economic losses in the wake of Covid-19, the driving force behind GHG reduction efforts to deal with climate change, geopolitical conflicts and energy crises, the outlook for market demand and pattern shifts in energy consumption, and the human rights code, which is increasingly accepted around the world. GPSC's key materiality issues consist of

- **Clean energy toward Net Zero**

GPSC is the country's major power service provider that contributes to the push for clean energy and climate change goals. It attracts foreign investors in the energy sector. It supports low-carbon businesses and innovation with a promising growth outlook and promotes consumers' access to clean-energy sources.

- **Capturing the future sustainability market**

GPSC's operations align with and support the market transformation trend, customers' needs, and public policies. It establishes cooperation in developing products that create value and marketing opportunities for itself and its business partners.

- **Being an innovative leader**

GPSC defends itself from disruption by new players in the market by finding business strengths and raising work efficiency to help employees work more efficiently and find time to develop skills and competencies of their interest.

- **Employee-focused organization**

Employees drive the corporation toward its goals. They make the difference and foster GPSC's competitive edge.

To achieve efficient fuel procurement, we have entered an agreement with PTT Plc on long-term natural gas supply and delivery in quantity, quality, and price. Medium-term and long-term contracts were also made for coal supply with numerous domestic and foreign business partners. Further, we have engaged in Power Purchase Agreements (PPAs) to supply power reserves to government agencies and raw-water supply agreements with the industrial estates where our power plants are located for consumption in power generation process. As for RDF, it comes from taking community waste from the Rayong Solid Waste Integrated Disposal Center, received from various local administrative organizations, to separate, improve, and produce RDF with appropriate properties as well as consistent physical and chemical composition. The RDF is fed to the RDF power plant project.

2. Operations

The principle of plants that use natural gas as a cogeneration fuel (Cogeneration Power Plant) is to convert thermal energy from gas into mechanical energy to drive the power generator with the support of other key equipment such as compressors, gas turbines, and generators. As for the combined-cycle power plants, the process is like that of the cogeneration power plant, except that the generators are driven by steam produced by steam turbines. Coal-fired power plants run on two types of steam boiler: one is the Circulating Fluidized Bed Boiler (CFB) and the other is the Supercritical Pressure Boiler. The steam produced from the boilers drives electricity generators. For the photovoltaic system or solar cell, solar power is turned into electricity. As for the run-of-river power plant, the volume of natural water flow and the different water levels over and below the dam are channeled toward the turbines connected to the axle shaft of power generators. As for the power generation using RDF, such fuel is used as an energy source for heating to produce steam. The steam produced then drives the Steam Turbine Generation (STG) to generate electricity.

3.2 Issue Management in the Business Value Chain

3.2.1 Value Chain

Primary Activities

1. Inbound Logistics

Various types of fuel are used as raw materials for power generation by GPSC Group. The fossil fuel power plants include natural gas-fired and coal-fired power plants. As for renewable energy power plants, they include solar plants, Refuse-Derived Fuel (RDF) power plant, and hydro power plants, located across many provinces in Thailand and overseas.

3. Outbound Logistics

GPSC currently produces electricity, steam, industrial water, and chilled water, which require well-prepared and stable distribution systems. A distribution method equipped with a safe protection system has therefore been exclusively designed for each customer. Furthermore, it is necessary that our power plant be situated in the industrial site where the product is needed to ensure efficient delivery. GPSC sells electricity to industrial customers and the government sector, namely Electricity Generating Authority of Thailand (EGAT), Provincial Electricity Authority (PEA), and Metropolitan Electricity Authority (MEA). As much as 230 kilo-volts, 115 kilo-volts, and 22 kilo-volts of electricity are delivered through transmission lines. As for the steam supply, GPSC provides steam of different pressures and temperatures as demanded by customers. Steam, industrial water, and chilled water are delivered through product pipelines.

4. Marketing and Sales

GPSC produces electricity for sale to government agencies, i.e. EGAT, PEA, and MEA, through PPAs, which can be classified into Independent Power Producer (IPP), Small Power Producer (SPP) and Very Small Power Producer (VSPP). Moreover, the company produces electricity, steam, industrial water, and chilled water for sale to industrial customers. For electricity, long-term PPAs are based on the price of electricity sold to the PEA as the reference, of which the Ft rate varies with the fuel cost. Regarding steam, industrial water, and chilled water, their prices are dictated by the energy cost and other production costs. GPSC also invests in renewable energy to produce electricity, which is sold under private PPAs.

5. Customer Services

GPSC values good relations with the customers to achieve satisfaction and long-term bonds. Customer relations management (CRM) has been strengthened through various processes, including complaint and communication channels via website, e-mail, phone

calls, and letters. Customer relations activities are also continuously organized. The EnergyLens Application was launched to keep records of customers and products through an online system. Customer services include annual customer satisfaction surveys, from which data are analyzed to assist in issue management, providing knowledge about the electricity business, and helping customers in their sustainability management.

6. Support Activities

In addition to the four core businesses that GPSC operates in power generation and utilities production, GPSC has expanded its investment into innovation, not just to increase revenue but to gain a competitive edge from new business models. The power storage and battery business has been expanded from the existing power production and sales business, following research and development (R&D) of lithium-ion battery production using the Semi Solid or “G-Cell” manufacturing technology. The G-Cell innovation has been evolving into the energy storage system through batteries, or G-Box to strengthen the power transmission and connection systems in addition to applicability as a standby power storage system for the industrial sector according to various applications, notably applications in the small and large electric vehicle industry (Mobility Application - Light Duty and Heavy Duty) such as electric buses, electric boats, electric tuk-tuks, small four-wheeled electric vehicles, electric motorbikes, and the energy storage system manufacturing industry (Stationary Application). It is also a leading Energy Management Solution Provider by providing installation services for small, distributed generation systems, developing and designing installation of district cooling systems, consulting and conducting energy consumption analysis, and integrating energy storage systems to enhance stability within the power management system.

For more details of the Business Value Chain under the topic “Creating Shared Business Value in the 2022 Sustainability Report,” please log on to <https://www.gpscgroup.com/en/downloads/sd-report>

3.2.2 Stakeholder Analysis in the Business Value Chain

Recognizing stakeholders' engagement, GPSC believes that good relationship built on trust, along with suggestions and recommendations from stakeholders, is an asset which drives us toward goal attainment and sustainable growth. Equally important is the management of stakeholders which enables GPSC to respond efficiently to their needs, as well as minimize risk that may harm the business image and cause business disruption, and to create maximum benefit for stakeholders. GPSC keeps regular contact with stakeholders to ensure correct understanding of all issues of interest. Stakeholders' opinions are integrated into the company's decision-making process and business plans.


In 2022 a review of stakeholders' participation and engagement was conducted which identified and prioritized key stakeholder groups relevant to GPSC's


operation across the business chain on an annual basis, as well as finding ways and means to respond effectively and appropriately to expectations and issues that stakeholders are concerned about. The findings will be useful for planning and formulating ways to improve stakeholders' participation and engagement. GPSC divides its stakeholders into eight main groups:

1. Shareholders
2. Investors
3. Government agencies and related organizations
4. Employees
5. Suppliers and contractors
6. Partners
7. Customers
8. Communities and society.

Methods of communication and engagement vary according to each group of stakeholders, as detailed below:



Shareholder group	Engagement channel	Issue of interest	Response
 <p>1. Shareholders (major and minor shareholders)</p>	<ul style="list-style-type: none"> • Annual general meeting • Various communication channels, e.g., website, e-mail, phone calls, letters, social media, and others. • Annual GPSC site visit • Visits to businesses related to GPSC, both within and outside Thailand • Perspective survey of shareholder representatives to gauge their expectations as part of the preparation or improvement of the company's action plan, etc. • Shareholder relations activities • Equal opportunities for all shareholders to join Annual General Meeting with equal voting rights and questioning • Roadshows and various investor relations activities • Annual report (56-1 One Report) • Opportunities for all shareholders to propose meeting agenda and candidates for directorship in Annual General Meeting 	<ul style="list-style-type: none"> • Good performance with share price and dividends at appropriate level • Constant business growth • Transparency and corporate governance • Risk management • Joint venture and innovation development to raise operation efficiency • Investment in renewable energy • Equal opportunities and rights for all shareholders to join Annual General Meeting • Equal access to information • Study of power business operation model based on real-time pricing and energy trading 	<ul style="list-style-type: none"> • Risk management • Business ethics • Development and investment in renewable energy and battery projects • Innovation management • Maintaining availability and reliability


Shareholder group	Engagement channel	Issue of interest	Response
 <p>2. Investors (Banks, financial institutions/ debentures (bond) holders/credit rating agencies/ analysts)</p>	<ul style="list-style-type: none"> • Providing financial support and services such as corporate loan / project finance / trade finance / FX / derivative / debentures / common shares / investment banking / occasional financial advice • Organizing a credit review event at least once a year • Annual General Meeting • Quarterly analyst meetings • Organizing occasional Deal Roadshow / Non-Deal Roadshow activities • Occasional reception of feedback by mail and during various IR events • Disclosure of investment information (via Opportunity Day, Roadshows, and various IR activities) • Occasional meetings with executives to update projects and situations • Roadshows, both domestically and internationally, and related activities as planned • Annual GPSC site visit • Other communication channels such as website, e-mail, phone calls, letters, social media, and others. • Perspective survey of expectations of investor representatives as part of the preparation or improvement of the company's action plan • Answering ESG assessment form • Disclosure of the company's operations through Annual Report (Form 56-1 One Report) / Sustainability Report / Financial Statements 	<ul style="list-style-type: none"> • Good performance with share price and dividends at appropriate level • Constant business growth • Transparency and corporate governance • Business operation with environmental, social, and governance (ESG) management • Joint investment and innovation development that will raise operation efficiency • Disclosure of the company's operating results, covering financial as well as environmental, social, and governance (ESG) aspects • Disclosure of complete information, adequate for business result forecast • Accuracy of IR Materials used for reporting quarterly business results • Financial stability of income and cash flow including financial ratios, debt levels, and solvency • Joint investment and innovation development that will raise operation efficiency • Debt covenant level at 2.5x financial ratios, liquidity, and solvency • Size and growth of entity (assets) Establishing a Crisis Management Team under the Center for Covid-19 Surveillance and Situation Administration to monitor internal and external situations in conjunction with PTT Group 	<ul style="list-style-type: none"> • Risk management • Business ethics • Ongoing development and investment in various projects • Innovation management • Maintaining availability and reliability

Shareholder group	Engagement channel	Issue of interest	Response
 <p>3. Government agencies and related organizations (Government agencies / state enterprises / local administrative organizations/ agencies with licensing authority)</p>	<ul style="list-style-type: none"> • Operating results submitted to related government agencies at required intervals • Constant participation in government projects and activities • Engaging with committees dealing with issues with which the government requests cooperation • PTT Group's government affairs seminars • Perspective survey on expectations of representatives of government agencies and related organizations as part of the preparation or improvement of the company's action plans • Being a learning site in operations for the government agencies and related organizations • Following up on policies, rules, regulations, and requirements of regulatory / licensing agencies • Making complete operating reports as required by law • Support for the government's policies and activities • Communication channels between the company and government agencies such as website, phone calls, e-mail, letters, social media, and others. • Membership in FTI to raise concerns to government agencies • Membership in trade organizations and the likes involved in power generation business as a channel to raise concerns to government agencies 	<ul style="list-style-type: none"> • Compliance with rules, regulations, laws, and good governance policies, including disclosure, submission, and reporting of accurate information • Alignment of investment ratio with the country's energy development policies and plans, including renewable energy • Social and environmental responsibility • Sustainable co-existence with communities • Good safety and environmental management • Collaboration with government agencies on various projects/activities • Formulation of strategies, plans, goals, and actions to mitigate climate change problems Being a learning site in both operation and management aspects • To be the place for site visit about operation and management 	<ul style="list-style-type: none"> • Risk management • Business ethics • Business opportunities for Environmental management, including gas emission control, water and wastewater management, and biodiversity management • Clean energy for the future and climate change response • Sustainable co-existence with communities and social responsibility • Strict compliance with rules and laws, including fee payment requirements

Shareholder group	Engagement channel	Issue of interest	Response
 <p>4. Employees (Executives / employees)</p>	<ul style="list-style-type: none"> • Annual Employee Engagement Survey • Records of complaints via different channels • Staff engagement through CEO Town Hall Meetings • Internal communication through various channels • Perspective survey on expectations of employee representatives as part of the preparation or improvement of the company's action plan • Welfare committee in the workplace Communication channels between the company and employees such as website, phone calls, letters, e-mail, social media, and others. 	<ul style="list-style-type: none"> • Employees' competency development in line with the company's business strategies and directions • Employee well-being, occupational health, and safety at work • Good remuneration and welfare as well as career opportunities and advancement • Fair performance assessment • Income stability • Equal treatment • Leadership development • Talent retention • Determine urgent measures and guidelines for the prevention of Covid-19 infection to ensure the safety of all employees 	<ul style="list-style-type: none"> • HR development through training, diversity enhancement, equality, and staff well-being, both physically and mentally • Human rights • Occupational health and safety at work
 <p>5. Suppliers and contractors (contractors / delivery agents)</p>	<ul style="list-style-type: none"> • Annual Supplier Day • Perspective survey on expectations of representatives of suppliers and contractors as part of the preparation or improvement of the company's action plan • Annual supplier assessment with feedback provided to suppliers • Survey of suppliers' and contractors' satisfaction • Complaint and communication channels between the company and suppliers and contractors, via website, phone calls, letters, e-mail, social media, and others. • Supplier relations activities to encourage participation, such as CSR activities. 	<ul style="list-style-type: none"> • Fair and non-discriminatory competition • Relationships and cooperation to grow together • Efficient, transparent, and accountable policies and procurement system • Compliance with the conditions set forth without taking advantage of suppliers and contractors • Straightforward procurement rules and regulations • Emphasis on occupational health and safety of employees • Joint business development using innovative, environment-friendly technologies and clean energy in the future for sustainable growth • Supplier development (including contractors/delivery agents) to mutually achieve best practices and sustainable growth 	<ul style="list-style-type: none"> • Risk management • Corporate governance • Supply chain management • Transparent and auditable procurement system

Shareholder group	Engagement channel	Issue of interest	Response
 <p>6. Partners</p>	<ul style="list-style-type: none"> • Memorandum of Understanding of joint business operations • Invitations to company activities involving each partner • Activities co-organized with partners • Perspective survey on expectations of partner representatives as part of the preparation or improvement of the company's action plan • Communication channels through various media such as meetings, business negotiations, website, e-mail, phone calls, social media, and others. 	<ul style="list-style-type: none"> • Values jointly created along the value chain • Building trust, good relationships, and cooperation to achieve higher potential and efficiency that benefit long-term business deals • Higher competitive edge with higher and sustainable business value • Business deals based on fairness Joint innovation and creation of businesses that create values for new business opportunities, as well as joint human resource development for the power generation business 	<ul style="list-style-type: none"> • Business opportunities • Innovation management • Co-creation of business value
 <p>7. Customers (long-term and short-term customers)</p>	<ul style="list-style-type: none"> • Annual Customer Satisfaction & Survey • Monthly, quarterly, and annual customer relations activities, such as annual golf competition, sports, seminars. • Monthly or quarterly meetings to follow up and report demand plans, readiness plans, and maintenance plans, as well as monitoring problem solving progress • EnergyLens Application to facilitate real-time monitoring of energy and steam consumption with record tracking, as well as other functions, including monthly expense reports and communication manual 	<ul style="list-style-type: none"> • Compliance with the terms of the PPA, such as power supply according to the terms in the PPA, delivery of documents according to the schedule, delivery of quality products and services in accordance with the PPA, power plant control according to the terms of the contract and requirements. • Delivery of quality products and services meeting agreed conditions at fair prices in compliance with the regulations of ERC • Reliable power production and distribution system • Contractual availability of power distribution • Prompt responses to customer needs, supported by capable problem-solving team • Customer communication channels that are convenient and fast with easy access 	<ul style="list-style-type: none"> • Customer relationship management • Maintaining availability and reliability

Shareholder group	Engagement channel	Issue of interest	Response
 <p>7. Customers (long-term and short-term customers)</p>	<ul style="list-style-type: none"> • Perspective survey on expectations of the customer representatives as part of the preparation or improvement of the company's action plan • Complaint and communication channels with the customers via website, e-mail, phone calls, letters, social media, and others. 	<ul style="list-style-type: none"> • Technology development for environmental impact reduction • Joint search for new business opportunities • Technical support team that is knowledgeable and capable of solving problems in a timely manner. • Customers' personal data protection equipped with cyber defense system • Equal treatment for all customers under applicable laws 	
 <p>8. Communities and society (communities surrounding new project sites/ communities surrounding power plants/ local administrative organizations / NGOs / local associations / media (both central and local))</p>	<ul style="list-style-type: none"> • Organizing a tripartite committee meeting (government agencies, private companies, local communities) • Attending monthly meetings with relevant provinces and local authorities to publicize the company's news and information, including listening to opinions from various agencies about the company • Supporting activities of provincial/local administrative organizations • Organizing meetings to clarify the operation of the power plants, seminars, and visits to the power plants, as well as publicizing the projects through online communication system • Community satisfaction survey by an external agency twice a year • Regular community relations activities/visits to communities and people with possible direct and indirect impacts, as well as promoting and supporting various community activities 	<ul style="list-style-type: none"> • Attentive social, environmental, and safety impact reduction management arising from the company's operations • Business operation with concern for safety and the environment • Create local people's understanding of the company's business operations and participation from the community with a clear plan • Job creation, income generation, and expense reduction for community people • Support for activities with community participation on a regular basis • Application of the company's knowledge, skills, and expertise to develop the communities around the power plant • Optimum use of resources • Concern for people's water consumption • Promoting and developing the quality of life of the community for sustainable self-reliance. 	<ul style="list-style-type: none"> • Risk management • Business ethics • Water and wastewater management • Sustainable co-existence with communities and social responsibility

Shareholder group	Engagement channel	Issue of interest	Response
 <p>8. Communities and society (communities surrounding new project sites/ communities surrounding power plants/ local administrative organizations / NGOs / local associations / media (both central and local))</p>	<ul style="list-style-type: none"> • Power plant visits by local community members (Open House) • Public hearings to solicit people's opinions on Environmental Impact Assessment (EIA) reports and the Code of Practice (CoP) • Perspective survey on expectations of representatives of communities and the society as part of the preparation or improvement of the company's action plan • Various channels for communication and complaints via website, e-mail, phone calls, letters, social media, local media, and others. • Organizing media relations activities Invitation to the media to participate in the company's activities 	<ul style="list-style-type: none"> • Provision of opportunities and promoting growth of the local economy in the area of operation through employment and use of local raw materials • Helping the communities and society in the wake of the Covid-19 situation 	

3.3 Managing the Environmental Aspect of Sustainability

3.3.1 Environmental Policy and Guidelines

Natural resources and the environment are crucial elements to power generation processes. Absence of appropriate control may cause pollution that harms the environment and society. GPSC therefore focuses on monitoring and controlling pollution at sources along with efficient resource consumption based on the Circular Economy principle to create shared values for business, society, and the environment to meet its mission in conducting business with socio-environmental responsibility. The established policies and guidelines for environmental responsibility are as follows:

Quality, Security, Safety, Occupational Health, and Environment Policy

GPSC recognizes that production of power and steam may affect the hygiene of the employees unless appropriate control measures are in place. We have therefore formalized the Quality, Security, Safety, Occupational Health, and Environment Policy. Further, we are committed to effective, continuous improvement for excellence so that GPSC may be recognized by stakeholders and consequently bring sustainability to the power and utility business. In 2022 we applied the policy to all departments throughout the supply chain, from the pre-acquisition of the merger assets and various other mergers & acquisitions, including planning, design, and execution until the end of the operations. The President & CEO has reviewed and approved the policy for all employees' acknowledgment, understanding, and compliance.

For more details of the Quality, Security, Safety, Occupational Health, and Environment Policy, please log on to <https://www.gpscgroup.com/en/downloads/policy/gpsc-group-quality-security-safety-health-and-environment-policy>

Climate Change Policy

GPSC established a Climate Change Policy for all units across its supply chain to apply to their operations from planning, design, execution, to the end of operations.

For details of the Climate Change Policy, please log on to <https://www.gpscgroup.com/en/sustainability/environmental/clean-energy-future-and-climate-resilience>

Commitment to Biodiversity Management

GPSC stipulated management to reduce impacts on biodiversity in its Quality, Security, Safety, Occupational Health, and Environment Policy. It reflects commitment to biodiversity protection and management. Moreover, GPSC made declaration of its intent of biodiversity management as a principle of basic operation in a uniform direction for the entire Group. GPSC aims to conduct environmental impact assessment of biodiversity in all new projects and expansion projects to ensure No-Net-Loss of biodiversity.

For additional information on the commitment to biodiversity management, please refer to <https://www.gpscgroup.com/storage/download/sustainability/environmental/biodiversity/biodiversity-procedures-en.pdf>

Guidelines for Greenhouse Gas Management

GPSC strives to become a low-carbon organization to reduce the intensity of greenhouse gas (GHG) emissions of not less than 35% from the 2020 base year by 2030. The Group complies with eco-efficiency in the use of efficient and sustainable resources to reduce energy consumption and GHG emissions from all activities through efficiency improvement of production processes with efficient innovation and technology, as well as through projects on continuous reduction of GHG emissions. GPSC plans to distribute more investment in renewable energy by setting a goal to

increase the share of renewable energy 50% by 2030. It plans to be ready for Internal Carbon Pricing (ICP) in the consideration and decision for the investment in renewable energy and low-carbon innovation projects. GPSC appointed a taskforce and a sub-taskforce to support and drive climate change activities so that its work on climate change strategies may become efficient and achieve GPSC's GHG reduction goals. It also plans to extend the third scope of information collection on the GHGs from the value chain to cover operation activities. GPSC seeks new business opportunities and innovation to support low-carbon operation. The company supports R&D of batteries and energy storage systems to facilitate the changing mode of future energy consumption. Moreover, GPSC encourages awareness and participation of its employees in the reduction of GHG emissions such as training provided for employees on participation in assessment of risks and opportunities in climate change, and campaign for reduced consumption of energy and resources within the organization to ensure good culture.

For additional information on Greenhouse Gas Management, please consult <https://www.gpscgroup.com/en/sustainability/environmental/clean-energy-towards-Net-Zero>

Environmental Management Guidelines

Air Pollution

GPSC values investment in technology to improve the efficiency of production processes. It develops an action plan to continuously reduce air pollutants, such as oxides of nitrogen (NOx), sulfur oxides (SOx), and total suspended particles (TSPs). It focuses on strict control, surveillance, and monitoring of the quantity of air pollutants from sources in line with the control measure recommendations described in environmental impact assessment (EIA) reports and environmental and health impact assessment (EHIA) reports with strict actions as follows:

- Used low-nitrogen oxide burners to reduce nitrogen oxide emission from both combustion chambers of gas turbines and pulverized coal-fired boilers

- At GPSC's coal-fired power plants, quality bituminous coal is used with less than 1% sulfur content. In addition, the limestone spraying technology is used in the Circulating Fluidized Bed (CFB), and a Seawater Flue Gas Desulfurization System (FGD) is installed with Pulverized Coal-Fired Boilers
- Installed TSPs with bag filters and impurity elimination systems such as mercury.
- Installed Continuous Emission Monitoring Systems (CEMs) at chimneys to continuously monitor air emissions. Real-time air quality data are displayed in front of power plants.
- Conducted air quality monitoring every six months by a central agency registered with relevant government agencies
- Created a tree buffer line (protection strip) around GPSC's sites to confine the dispersion of air pollutants to the external environment.

Waste and surplus materials

GPSC is committed to minimizing process waste because it denotes production efficiency, mitigation of environmental impacts, and reduced waste treatment costs. It therefore adheres to the principle of 3Rs (Reduce, Reuse, and Recycle) by minimizing waste at sources. When waste is generated, GPSC will first reuse or recycle it. This results in so much continuous waste reduction to landfill that GPSC had achieved the goal of zero-waste disposal to landfill. At present, waste generated from production, maintenance, and other activities is managed effectively in compliance with international standards to prevent potential impacts on the environment and surrounding communities.

In addition, GPSC regularly enforces, monitors, and audits waste management by all power plants, starting from the collection, storage, and transport of waste including solar cells from its operations, treatment, to disposal to ensure compliance with procedures and industrial waste management regulations to prevent environmental impacts. GPSC has also raised environmental awareness among contractors, partners, and customers by implementing the "Industrial Waste

Management Process" at all power plants. Contractors must hold valid licenses from applicable authorities before the transport of all waste and surplus materials from the power plants. GPSC implements procedures to evaluate and approve the disposal facilities for both toxic and non-toxic waste each time before it leaves the power plants as well as complying with the Factory Act and the Hazardous Substance Act under the Ministry of Industry. In addition, through regular hazardous waste manifest audit of waste disposal contractors, GPSC ensures that all waste, including unused materials, solar cells, and hazardous waste from production processes, is accounted for without unauthorized treatment and disposal, as well as the preparation of the Form Sor Kor 3, which is the annual report summarizing the amount of waste that GPSC ships and disposes of every year to confirm compliance with relevant regulations.

Water Management

• Water management outside GPSC

GPSC manages external water by actively participating in the PTT Group Water Management Task Force, which holds monthly meetings. Each meeting addresses the water situation report from the survey and analysis of the water situation model, consequently formulating a water management plan, guidelines for monitoring water management targets, risk reduction, assessing impacts of water use in all operating areas, and finally communicating to responsible business units for efficient implementation of plans.

The PTT Group Water Management Task Force also participates in the Water Management Working Group of the Eastern Region of Rayong. The working group, made up of governmental agencies, East Water Plc, and representatives from the private sector, monitors,



assesses, analyzes the water situation, and maps out measures to reduce risks and impacts promptly.

GPSC also leverages the Aqueduct Water Risk Atlas under the World Resources Institute (WRI) to identify water stress areas and determine guidelines for the management of water sources outside all areas.

• Water management within GPSC

GPSC clearly expresses its intention for internal water management to maximize the benefit of water usage with the community. By following the 3Rs, it manages internal water usage efficiently by reducing usage in power generation, recycling water from the cooling system for further use with wastewater from boilers, and reusing condensed water in steam production processes.

In addition, GPSC continues to regularly monitor the quality of water discharged into the environment to ensure that the water that leaves the operation of GPSC is safe for the communities and complies with legal standards.



Since GPSC does not draw water directly from natural sources, there is no impact from the operation. However, it continues monitoring waters in all surrounding areas. GPSC also continues monitoring water quality before discharging it into the industrial estate's central water treatment system and natural

waterways to ensure that the quality of effluents from the processes meets the standards required by law and local authorities. Based on the data, it was concluded that the quality of effluents was better than applicable standards at every facility. As for each solar power plant, water is used to clean dust from solar panels. The used and non-contaminated water is discharged on the ground.

For further details on Environmental Management, please log on to <https://www.gpscgroup.com/en/sustainability/environmental/environmental-management>

Biodiversity Management

The guidelines of GPSC for biodiversity management include the following:

- Committed to protecting and managing biodiversity by prohibiting operations in the areas of IUCN Category I-IV
- Committed to No-Net-Loss of biodiversity under a manageable scope
- Conducted a study and an analysis of environmental impacts from the projects, both domestic and international
- Conducted a study on biodiversity for international projects with caution by formulating an action plan, management plan, and environment monitoring
- Measures issued to prevent and reduce environmental impacts and to monitor and audit for environmental impacts
- Provided a manual on GPSC's Biodiversity and Ecosystem Services Management Procedure in accordance with the "Mitigation Hierarchy" principle (Avoid, Minimize, Restore, and Offset) to avoid serious impact on biodiversity.

For further details on Biodiversity, please log on to <https://www.gpscgroup.com/en/sustainability/environmental/biodiversity>

3.3.2 Environmental Performance

Energy Management

In 2022 GPSC implemented an efficient energy management system, resulting in power consumption reduction by 2.17 million megawatts-hour (MWh). It also installed a solar rooftop at GLOW IPP with a capacity of 0.637 kW for internal use.

Air Quality

GPSC continues improving process efficiency to reduce air emissions resulting from the use of natural gas for power generation. In 2022 the emission of oxides of nitrogen (NO_x) was 12,613.98 tons.

Water Management

In 2022 GPSC consumed 35.1 million cubic meters in the processes. However, no water was drawn directly from public water sources, hence no sources of water were affected by the operations. In addition, process water was recycled and reused, totaling 71,948.37 cubic meters, under efficient wastewater management.

Waste Management

In 2022 GPSC achieved its goal of reducing hazardous waste landfill to zero.

Greenhouse Gas Management

Climate change is a current global problem requiring immediate action. One cause is the activities using electricity, which constitutes a major source of GHG emissions. GPSC is aware and committed to reducing the impact through the formulation of strategies to reduce GHG emissions and a goal to reduce the intensity of GHG emissions by no less than 35% from the 2020 base year by 2030, as well as seeking opportunities to develop innovation to support the production of clean energy and move toward a low-carbon society to cope with and adjust for climate change.

GPSC focuses on efficient resource utilization and sustainability under the Eco-Efficiency Economy through improving the efficiency of power and steam production. In 2022 it implemented projects recommended by Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) to reduce emissions of greenhouse gases, such as the Carbon Footprint of Production (CFP), Low Emission Support Scheme (LESS), and Thailand Voluntary Emission Reduction Program (T-VER).

For more information regarding Climate Change Management, please log on to <https://www.gpscgroup.com/en/sustainability/environmental/clean-energy-towards-Net-Zero>



GPSC participated in the Carbon Disclosure Project (CDP) assessment, the most recognized global institution for the assessment of environmental impact management, natural resources, and climate change. By disclosing information on climate change for the sixth consecutive year, the company received a B grade for 2022, the highest score among the power industry in Thailand.



In 2022 GPSC was registered by TGO for Carbon Footprint of Production (CFP) for CUP 4, Glow SPP 2, Glow SPP 3, GHECO-One, Glow Energy Phase 1 and 2, and Glow SPP 11 power plants. The products are electricity, steam, and demineralized water.



In 2022, GPSC received a certificate of honor from TGO under the Low Emission Support Scheme (LESS) category, for CUP 1-4, Sriracha (SRC), Glow Energy Phase 2 and Phase 4, Glow SPP 2, Glow SPP 3, GHECO-One, and Glow IPP power plants. This resulted in a total GHG emission reduction of 8,214.64 tons of carbon dioxide equivalent.



In 2022 GPSC enrolled in the Thailand Voluntary Emission Reduction Program (T-VER) by developing a solar farm project in Wangchan Valley and an RFD project in Rayong, which are expected to lower GHG emissions by a total of 20,993 tons of carbon dioxide equivalent.

3.4 Managing the Social Aspect of Sustainability

3.4.1 Policies and Social Guidelines

Human Rights Policy and Guidelines

GPSC is committed to the management of human rights by formalizing its Human Rights Policy under the principles of the UN Guiding Principles on Business and Human Rights (UNGP) to avoid, prevent, and mitigate human rights risks and violations across the value chain. It relentlessly implements Human Rights Due Diligence Processes, which include identification of human rights risks, identification of affected groups, and implementation of preventive and corrective plans to include measures to mitigate damage and follow up to ensure that its operations are founded on strict protection of human rights. GPSC has developed, formalized, and declared throughout the organization the Human Rights Policy under the provisions of Thai and international laws, including various criteria of the United Nations Global Compact (UNGC) and the Declaration on Fundamental Principles and Rights at Work of the International Labour Organization (ILO) for managerial staff and employees to strictly follow. The Human Rights Policy embraces all sectors.

For more details on Human Rights Policy, please log on to <https://www.gpscgroup.com/en/downloads/policy/human-rights-policy>

Human Resource Management Policy

GPSC values employees as an essential mechanism that drives business growth toward goals. It is therefore committed to managing human resources in line with the strategic directions of the Group. It stipulated a human resource policy to set out a direction for efficient and fair human resource management in line with the strategies and goals of GPSC under the ever-changing global economy, completely covering the three dimensions of ESG, while creating motivation and corporate engagement with employees. The policy will bring about mutual success and sustainable progress between employees and the organization. To this end, the 2022 target for the succession plan has been established at 100%.

Strategy for Success

1. A succession plan for the executive level has been developed to ensure business continuity
2. The SPARK Accelerator will prepare capable employees to support business growth
3. Engagement and unity of GPSC Group will be achieved through ACT SPIRIT activities
4. Employer branding is to foster corporate image among external parties.

For more details, please log on to <https://www.gpscgroup.com/en/sustainability/social/Employee-Focused-Organization>

Corporate Social Responsibility (CSR) Policy and Strategy

GPSC strives to become the leader of PTT Group's power business innovation with a clear intention to conduct its business with social responsibility for internal and external stakeholders. This includes responsibility for community and environmental sustainability by conducting its business in peaceful harmony with communities and society as well as fostering appropriate participation processes with stakeholders. GPSC has established a policy of social and environmental responsibility to be observed as follows:

- Conduct its business with transparency, fairness, and auditability. Focus on the growth of GPSC Group along with the improvement of the quality of life of employees, communities, society, and the environment. Meet stakeholders' interests in accordance with the vision and mission set out by GPSC
- Maximize the benefit of resource utilization with minimal impacts on stakeholders, society, community, and the environment
- Be committed to continuous social and environmental responsibility to all stakeholders to create mutual social and environmental sustainability
- Encourage and enable stakeholders to participate in projects or activities for society and the environment by leveraging the capability and resources of GPSC to achieve goals and objectives efficiently
- Communicate and publicize projects or activities for society and the environment to communities, society, and stakeholders.

GPSC has executed assorted social and community development programs under the sustainability framework in line with the strategy and direction of the business of the group. The sustainability framework comprises power accessibility, quality of life, ecosystem, and sustainable innovation. GPSC's strategy of social responsibility is founded on three important principles:

1. It is an activity that links the mission of the organization to business operations
2. It harnesses GPSC's expertise, core skills, and competencies to transfer knowledge and extend it to develop into communities
3. It considers the needs and expectations of stakeholders, especially those living around the areas of the company's business operations.

3.4.2 Social Performance

Human Rights Management

Valuing human rights, GPSC promotes its mastery among all executives and employees to identify, prevent, and mitigate the impacts of human rights risks in GPSC's operations throughout the value chain. This assessment encompasses activities at the national level, industrial level, and operational level in areas where GPSC Group operates. The scope includes identification of relevant human right issues, and impact assessment in groups with risks or vulnerable groups such as children, indigenous groups, foreign workers, as well as assessing potential impacts at the national, operational, and individual levels. The human rights risk assessment is based on two factors, potential and consequential, covering Labor Rights, Community Rights, Supply Chains, Security and Safety, Environment, and Consumer Rights. In 2022 there was no complaint or malpractice filed regarding human rights laws and violations in any area.

For more detail on Human Rights, please log on to <https://www.gpscgroup.com/en/sustainability/social/human-rights>

Human Resource Management

1. Workforce Planning

In 2022 GPSC managed a strategic manpower planning and improved the organizational structure and processes arising from mergers and acquisitions to support its rapid growth. It improved the personnel selection process to ensure alignment with business plans. GPSC completed 100% succession planning for key positions.

2. Employee Development

GPSC develops an employee development program for job positions at each level so that employees can support domestic and international business growth, including new business development plans to pursue the vision to become a leading international power generation company in innovation and sustainability.

3. Embed Corporate Culture and Increase Employee Engagement

GPSC focuses on strengthening employee engagement through sharing and organizing activities to promote employee awareness of Group values, leading to a culture and behavior of efficient collaboration. In 2022 the engagement level was 69% (which exceeded the industry average).

4. Diversity and Equal Opportunity

GPSC is a diverse organization in race, gender, and age. Diversity allows it to meet the different needs of stakeholders and respond constructively to business changes. It establishes qualifications for recruiting staff and human resource development to prepare employees for equal career growth. In 2022 GPSC Group had 29.72% female executives.

5. Employee Well-being

GPSC's welfare board is the venue for nominated employee representatives to express their views equally. Currently, there are 25 employee representatives on this board.

For more details regarding the achievement of Human Resource Management, please log on to <https://www.gpscgroup.com/en/sustainability/social/Employee-Focused-Organization>

Safety, Occupational Health, and Work Environment

GPSC continuously develops and improves the efficiency of safety operations to reduce the risk of illness, injury, or fatality and to take proper care of the quality of life of employees and contractors by the following key action items:

- Compliance with applicable occupational health and safety laws
- Occupational health and safety supervision
- Process safety
- Occupational health risk assessment and preventive process
- Personal safety
- Occupational health and safety training.
- GPSC web-accident reporting program
- Occupational health and good health of employees
- Promoting and cultivating a safety culture.

In 2022, no medical treatment case (MTC) was reported.

For more details regarding Safety, Occupational Health, and Work Environment, please read <https://www.gpscgroup.com/en/sustainability/social/occupational-health-and-safety>

Corporate Social Responsibility (CSR)

GPSC has established a long-term CSR goal (2021-2025) for sustainable co-existence with the community as follows:

- Evaluation of social return on investment (SROI) covering ten activities a year with SROI > 1.05
- An increase of 1% on community satisfaction survey results conducted every two years. To be maintained at 80% or no lower than the average of other companies in the same business.
- Reduction of at least 1,000 ton of carbon dioxide equivalent a year by 2025 (new indicator)
- Community's access to 1,000 kilowatts of renewable energy by 2025.

In 2022 GPSC evaluated 12 activities, the SROI of which ranged from 1.35 to 4.53:

Young Social Innovator Project (Season 4)



Ban Huay Khab

Bo Kluea, Nan



Huay Khab Smart Community Project



Project of installation of solar power systems

Wat Si Saeng Tham



Project of installation of solar power systems

18 Community Public Health Facilities, Omkoi, Chiang Mai



Project solar systems installation

Wat Jak Daeng



Project solar systems installation

Wat Phra Ram Kao



Project solar systems installation

Sa Kaeo College of Agriculture and Technology, Sa Kaeo (Year 2)



Project on improvement of electricity system

Ban Khao Hin School and Rayong Technical College



GPSC Restart Project



Zero Waste Village Project

Baan Phai Rayong Learning Center



Seagrass Project



PROJECTS IN 2022

Goals and achievement of CSR and sustainable co-existence with communities in 2022

SROI of 10 activities each year, with SROI of **at least 1.05**



Target

10 activities

₹ 2565



Result

12 activities

SROI = 1.35- 4.53

₹ 2565



Goal

10 activities

SROI ≥ 1.05

2023

Satisfaction of communities **rising 1%** every two years of survey



Target

≥75%

2022



Result

78%

2022

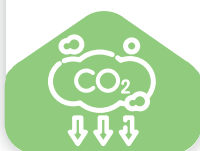


Goal

Rising 1% every two years of survey (No survey planned for 2023)

2023

GHG reduction of at **least 100 tons of CO₂** equiv. per year (tCO₂e/year)



Target

≥100 tCO₂ e/year

2022



Result

757 tCO₂ e/year

2022



Goal

1,000 tCO₂ e/year by 2025

2023

Community access to renewable energy measuring 1,000 kWp by 2025



Target

1,000 kWp by 2025

2022



Result

328.53 kWp

2022



Goal

1,000 kWp by 2025

2023

Our overall performance has proved remarkably successful against the defined targets. Yet, GPSC remains committed to upgrading CSR performance further by setting even more challenging targets in support of its vision to become a Global Leading Innovative and Sustainable Power Company.

3.4.3 Projects and Activities in 2022

The implementation of CSR activities is divided into Community Relations and Corporate CSR. In 2022 GPSC implemented both areas simultaneously, embracing all four aspects defined in the CSR Strategic Plan, summarized as follows:

1. Community Relations

Regarding the implementation of community relations, GPSC largely joined forces with PTT Rayong Group and the Friends of Community Association. However, there were activities that GPSC carried out on its own. Its community relations activities fall into education, quality of life promotion, environment, and public participation.

Education

One finding from the biennial 2020-2022 Community Satisfaction Survey indicated that a well-known and highly appreciated CSR activity was the scholarship program. This undergraduate scholarship program has been offered for 15 consecutive years. There are three scholarships offered annually to eligible Mathayom 6 (Grade 12) students who live in Rayong and Chon Buri. The scholarship of Baht 400,000 per student, three recipients a year, is for public university tuition and other education-related expenses, including monthly allowance covering all four years of education. GPSC sponsored the GPSC RDF Brand Ambassador Scholarships for vocational students around the RDF power plant until the time they graduate from the three-year curriculum at a budget of Baht 90,000 each.

Further, GPSC offers a community scholarship program for 38 communities in Map Ta Phut Municipality and 10 fishing groups around the plants, granted for 15 consecutive years since 2007 to provide educational opportunities to exemplary needy youths. This program eases the burdens of parents and inspires and fosters pride among youths themselves.

Quality of Life

GPSC has implemented projects to promote career advancement and hiring opportunities for community members and to support local community products and community enterprises. In 2022 the major activities for promoting the quality of life included:

- Supported local community products for CSR activities as well as hiring small retail stores to make survival bags for delivery to the needy and those affected by Covid-19, as well as income distribution and generation of local employment
- Supported medical equipment and devices to assist public health agencies and communities affected by Covid-19 such as masks, PPE, rubbish bags and rubbish bins for infectious waste.
- Created a livelihood of organic agriculture in collaboration with local administrative organizations
- Supported earthworm breeding
- Improved lighting systems in communities
- Supported the production processes based on from local community waste.

Environment

• Reforestation, Check Dam (Weirs) and Aquatic Species Release Project

GPSC values its business along with mitigating challenges from climate change by increasing green space and preserving the environment and ecosystems to increase biodiversity. Its key ongoing activities include a reforestation project, a check dam project, and an aquatic species release project. GPSC has engaged in a reforestation project since 2013 with a total of 20,450 planted trees. GPSC also signed a memorandum of understanding with government agencies and communities to continue its stewardship for five years before handing the project over to the community.

Apart from reforestation activities, GPSC has implemented a project to build check dams (weirs) to maintain moisture in the forest, thus reducing soil erosion as well as providing a habitat for aquatic and small wildlife. Since 2015 a total of 142 dams have been built. GPSC remains committed to building them to restore a complete ecosystem.

In addition, GPSC has been working with network partners on a project on releasing aquatic animals for 19 consecutive years, striving to preserve the marine environment to multiply the number of aquatic lives, thus balancing marine and coastal ecosystems and increasing revenue for fishermen. Apart from the three continuous main projects, our environmental activities in 2022 included:

- A green area maintenance project with 34 rai in communities
- A project run with a group of small fishing boats, consisting of Sung Kaw artificial-reef making, marine animal cage making, and a serrated mud crab nursery. The project yielded livelihoods while enriching fishery resources and contributing to sustainable fishery livelihoods.

Public Participation

Over time, GPSC has invited the public and government agencies to participate in monitoring GPSC's operations through various venues and committees, for example, a tripartite committee responsible for protection, mitigation, and monitoring of environmental impacts, a working group for the monitoring of implemented environmental measures, a working group to visit and audit industrial plants in Map Ta Phut Industrial Estate (White Flag - Green Star), an EIA monitoring committee in Map Ta Phut Industrial Estate, evaluation of Eco factories, as well as an open forum of public hearing based on transparency and auditability for suggestions to improve operations. In 2022 we held a meeting to elaborate on business development/expansion projects such as the construction of a new power plant to replace an old one and the expansion phase project of a power generation unit with steam turbines of Glow Energy Plc to provide information to community and stakeholders.

Moreover, GPSC regularly visits and engages in dialogues with surrounding communities to maintain good relations with them under the “Khang Ba Khang Lai (Side by Side)” project, as well as providing a summary of CSR work to the communities no less than five times a year.

2. Corporate CSR

The implementation of corporate CSR primarily aims to enhance the overall corporate image. The activities included joint projects with PTT Group or partners and GPSC projects in local areas and others. The focus is on projects aligning with the corporate vision, core missions, or expertise.

The company's focus on four main CSR activities are:

1. Power accessibility
2. Quality of life
3. Natural resources and environment
4. Sustainable innovation.

Power accessibility

- **Light for a Better Life (LBL) Project (Electricity for community's and society's good quality of life)**

Light for a Better Life is a community support project that deployed the expertise and specialized skills of GPSC and its employees to take care of the community's electricity system. The effort reflected PTT Group's leadership in power innovation. In this project, employees leveraged their expertise to take care of people in community, society, and the country (People of the Planet) in four main aspects: safety, saving, energy security, and socio-economic.

1. **Safety:** The project upgraded and repaired electrical systems for local schools, temples, and healthcare facilities to minimize risks to lives and properties resulting from fire and short-circuited power systems, as well as repair and restoration of electrical systems to local government agencies in the event of natural disasters.
2. **Saving:** The project replaced energy-intensive electrical devices and appliances with energy-efficient ones or installed rooftop solar systems to reduce costs and use the savings for development or other useful activities in the organization.

3. Security: The project installed alternative power systems in remote areas to improve the quality of life for people in communities, reduce hardship, and strengthen energy security, such as installation of solar rooftops at hospitals, public health facilities, and schools.
4. Socio-Economic: The project promoted the career of “Electricity Doctor” to generate income for people in the community. It equipped them with professional skills so that they might become electricians with basic knowledge. They could then take care of their households and communities, earn extra income, or make it a primary source of income.

The LBL is a strategic CSR project since it aligns with the organization's business and expertise, as well as UNSDGs, and a global energy trend.

GSPC Group improved, installed, and delivered over 20 projects of solar power and power storage systems, especially for remote areas and communities with no electricity access in 13 provinces to ensure their energy security and equality. In 2022 GSPC Group improved power systems at two schools around its business operations and installed solar power systems together with energy storage systems at eight community public health facilities in remote areas, installed solar power systems for three Buddhist temples, and developed the handover of one project under the social enterprise model. These have been summarized in the table below. At the end of 2022, the total installed solar power capacity of the CSR sector came to 328.53 kW against the goal of 1,000 kW by 2025.

No.	Project / location	Type	kW	Annual CO ₂ reduction (kgCO ₂ e/year)	Remarks
1	18 Community Public Health Stations (Amphoe Omkoi, Chiang Mai)	Off-grid	30.52*	21,709.24	Jointly with the Power for Sustainable Future Foundation
2	Wat Pa Si Saeng Tham, Amphoe Khong Chiam, Ubon Ratchathani	Off-grid	5.35	3,127.00	
3	Center for Waste Sorting for Recycling, Wat Jak Daeng, Amphoe Phra Pradaeng, Samut Prakan	On-grid	10.35	7,753.30	
4	Wat Phra Ram Kao Kanchanaphisek, Bangkok	On-grid	30.52	21,709.24	
5	Hua Pli Market Community Enterprise, Saraburi	On-grid	10.80*	7,682.17	Jointly with PTT
Total			87.54	61,980.95	

Through 2022, all LBL projects have successfully reduced greenhouse gases by 152,175 kg of carbon dioxide equivalent a year. For the latest year alone, the projects that began during the year reduced greenhouse gases by 61,980.95 kg of carbon dioxide equivalent a year.

Quality of life

• GPSC Unites Thais to help the Nation Project, Phase 2

The project was first implemented in 2021 with a goal to help new graduates affected by Covid-19. In Phase 1 (November 2021 – June 2022), Social Enterprise Section hired 25 new graduates under a service contract at Baht 15,000 a month each. In Phase 2 (January – December 2022), it hired 25 more to serve in assorted positions in Rayong and Bangkok Head Office. Besides generating income, these students gained experience and learned on the job, which exceeded internship under college curricula.

• Smart Farming Project

Due to the Covid-19 situation's lingering economic and social impacts, GPSC in collaboration with PTT Group drove the PTT Group SMART Farming Project under its Innovation for Smiles Project in its second consecutive year. In early 2022 GPSC in conjunction with the National Science and Technology Development Agency (NSTDA) proceeded with the project to drive science, technology, and innovation to sustainable application in communities. To elaborate, NSTDA undertook research and development (R&D) in various

forms, whereas GPSC built on the R&D outcomes by leveraging them in communities in its network. This project has the following objectives:

1. To establish recognition of the application of science, technology, and innovation to energy, environment, agriculture, medical sciences, and public health, thus leading to domestic sustainability
2. To drive NSTDA's innovation and R&D work on energy, environment, agriculture, medical sciences, and public health to fruitful results in communities to upgrade the quality of life in society, communities, and the environment.

GPSC applied the technology for crop rotation to plots under the GPSC Smart Farming Project at Ban Huay Khab, which had limited planting areas so as to achieve maximum efficiency.

As for the next phase of activities, the volume of planted trees and productivity will be continually monitored. The goal is to obtain quality and standard products that attract high prices; the project will also promote online group management as well as efficient application by all farmers in the group of the IoT system. The PTT Group Innovation for Smiles Project's three-year operating period ends in 2023.



- Huay Khab SMART Community Project, Ban Huay Khab, Amphoe Bo Kluea, Nan

This project develops the quality of life in the Huay Khab community so that residents may have livelihoods, earn income, and command a decent living standard. The project extension covers two areas: GPSC SMART Farming and Community-Based Tourism (CBT).

CBT activities focus on promoting local communities by leveraging community-based tourism in community development. CBT connects tourists with communities to enable creative tourism activities that give rise

to extraordinary experience among tourists and communities themselves as well as incorporation of community identities, livelihoods, and local culture—all these under the “Coffee Story” concept.

After year-round preparation for the community, in 2023 it is ready to launch a CBT daytrip route. GPSC would still support the knowledge on tourism management for the community for the first half of the year so that it may scale up to homestay accommodation services.



Natural resources and environment

• Zero Waste Village Project

GPSC has participated in waste management for the Baanphai Saving Waste Bank in Moo 1, Tambon Nong Taphan, Amphoe Ban Khai, Rayong, continuously since 2018 through the promotion and support of knowledge transfer in comprehensive waste management, recycling and upcycling, development of community products, and increased sales channels to generate supplementary income for the community.

This year, with the cooperation of Rayong Technical College, the Zero Waste Village Project continued to value the development of quality of life in parallel with environmental stewardship to scale it up to a

social enterprise, which generates income for the community while fostering sustainability for society and the Rayong Industrial Estate community in developing machinery for processing products derived from plastic waste in communities, devised by the faculty and students of the vocational, plant mechanic, power electricity, and metal welding groups under the BAANPHAI Upcycling Model project, one of the novel educational models that focus on resolving community's problems through experiments. The machinery under development consisted of shredders and extrusion tools, derived from world-class plastic waste management organizations like Precious Plastic. The group successfully processed plastic bottle lids into products that sell for the community.

หมอนหลอด "เทฟ่า TAYLA"
ผลิตภัณฑ์หมอนจากหลอดพลาสติกใช้แล้วที่ผ่านกระบวนการ
กำจัดความสะอาดและฆ่าเชื้อโรค ผลิตภัณฑ์ : อู๋ธนบ้านไผ่ จ.ระยอง

หมอนเต้านมเป็อง	เบาะเต้านม	หมอนเต้านมหัวค้อน
ขนาด 17 X 36 X 15 ซม. ราคา 259 บาท	ขนาด 42 X 42 X 5 ซม. ราคา 459 บาท	ขนาด 30 X 30 ซม. ราคา 259 บาท

การจัดส่งสินค้าโลก
โดยปราศจากพลาสติก
• ห่อหุ้มด้วยกระดาษ
• วัสดุเย็บและเย็บด้วยเส้น
• การถอดและทำความสะอาด
☎ : 098-8749388 (พี่ขวัญ)
📍 : Tayla เทฟ่า

ผลิตภัณฑ์ที่ไม่เกิดจากขวดพลาสติกที่ใช้แล้ว

ผลิตจากขวดพลาสติกชนิดที่ไม่สามารถนำไปรีไซเคิลได้
ช่วยลดขยะพลาสติกได้ประมาณ

30-35 ขวด / ตัว

ราคา 150 บาท

ราคา 250 บาท

☎ : 098-874-9388 (พี่ขวัญ)
📍 : ศูนย์การเรียนรู้การจัดการขยะ
ชุมชนบ้านไผ่ จังหวัดระยอง

เครื่องบดพลาสติก (Shredder)

ทำน้ำกับดน้ำขวดน้ำพลาสติกให้มีความละเอียดต่อชิ้น
ประมาณ 0.1 - 0.5 เซนติเมตร ด้วยมอเตอร์ขนาด 3 แรง
และใบมีด 5 คมตัด โดยสามารถบด 1 ชั่วโมง
ได้ประมาณ 28 กิโลกรัม

เครื่องหลอมพลาสติก (Extrusion)

ทำน้ำกับดน้ำขวดน้ำพลาสติกให้มีความละเอียดต่อชิ้น
ประมาณ 0.1 - 0.5 เซนติเมตร ด้วยอุณหภูมิ
170-190 องศา เพื่อให้พลาสติกอ่อนตัวและขึ้นเป็นเนื้อครีม
ส่งผ่านชุดท่อสกรูสไลด์ โดยสามารถปรับความถี่ของ
อัตรารอบความเร็วของมอเตอร์ เพื่อให้ขึ้นรูปผลิตภัณฑ์
อย่างสมบูรณ์

TAYLA

Plant Pot

Made of 100% bottle caps
Baanphai Rayong community enterprise

[caps] → [flakes] → Small pot S 40 caps

☎ : 098-8749388 📍 : Tayla



To illustrate the success of the undertaking, this community in Rayong came in third in the contest under the national Waste-free Community Project in 2022, awarded by the Department of Environmental Quality Promotion, along with multiple provincial awards. Finally, the latest year's SROI assessment of the project was 2.21.

Summary of the Zero Waste Village Project (Ban Phai Community)

- Income of the Ban Phai Waste Management Learning Center (derived from the Waste Bank, sale of processed products, instructors' honoraria, and reception fees of visiting groups) rose from Baht 131,588 in 2021 to Baht 420,655 in 2022.
- 5,124 kg of reduced waste
- Purchase of 2,010 kg of high-calorific value RDF waste from four Savings Waste Bank community enterprises, equivalent to 875 kg/CO₂ eq or planting of 121 trees (ref. TGO's calculation).

Greenhouse gas reduction as a result of RFD waste purchase by the Ban Phai Waste Management Learning Center totaled 11.5 tons CO₂ eq/year.

• Project on Purchase of High-Calorific Value RDF Waste from Communities

GPSC educated communities on the types of waste without apparent value, unsellable but recyclable, which commands high calorific values and fits fuel application for RDF power plants, including parts of plastic tote bags and plastic envelopes. The waste management learning centers (community enterprises) consisted of

- Recyclable Waste-Sorting Management Center, Wat Chak Luk Ya Community
- Bank for Environment, Noen Phayom community
- Khao Phai Community Waste Bank
- Waste Management Learning Center, Ban Phai Community.

In addition, GPSC purchased such waste from these communities to generate income and enabled their working areas to be waste-free so that workers may be free of pollutants. For its work done during 2022, GPSC purchased 2,010 kg of such waste or about 875 Kg/CO₂eq or 121 new trees planted. (Ref. TGO's calculation).





Sustainable Innovation

• GPSC Young Social Innovator Project

The GPSC Young Social Innovator Project was launched in 2018 as a training camp and innovation contest for high-school students or equivalent in the Eastern Region, with 39 teams competing. Inspired by the success of one silver medal and one special award won at the Seoul International Invention Fair (SIIF), in the following year (2019) the GPSC Young Social Innovator Project extended its targets by upgrading the regional competition into a national competition. Therefore, in the second year, 158 teams participated in the project. The work of the second batch of students was more evident. Due to the outbreak of Covid-19, nearly all international innovation competitions, whose goal was to showcase Thai youths' ability and potential, were cancelled or turned into online competition. Despite the situation, the GPSC Young Social Innovator Project was recognized internationally with one gold medal and one special award won at the International British Inventions, Innovation Exhibition (IBIX), and two gold and one silver medals together with three special awards, won at the World Invention Innovation Contest (WIC).

Due to the spectacular GPSC Young Social Innovator Project (season two) in 2019, GPSC was committed to upgrading it into a training camp for incubating innovative skills and creating a new generation of innovators for Thailand. HRH Princess Maha Chakri Sirindhorn graciously bestowed the trophy for the project in 2020, which was the grand prize of the

competition in its third year. The project attracted even more interest from youths nationwide with up to 303 teams who applied to participate in the project.

Currently, the project in its fifth year is competed in metaverse (virtual, online), with modified types of innovation for competition: Product, Invention, and Process and Service. Interested youths submitted 454 entries for competition. HRH Princess Maha Chakri Sirindhorn graciously bestowed trophies for the grand prizes of the project in 2022 for each category of work, totaling three trophies.





The past GPSC Young Social Innovator Projects have seen rising entries by interested youths every year. They developed 10 of their work pieces for eligibility for the registration of patents and petty patents. Throughout the past years, the participants have won over 22 awards from various international innovation contests. Moreover, the Social Return on Investment (SROI) of the project for the past three years was 2.11, a decent score. For further details of Corporate Social Responsibility, please log on to <https://www.gpscgroup.com/en/sustainability/social/corporate-social-responsibility>

• Greenovation Startup Sandbox Project

The Greenovation Startup Sandbox Project focused on urging new-gen thinkers to focus on the environment, leveraging five months of activities under the project, where participants brainstormed ideas on innovations driving clean-energy consumption. GPSC Group's experts provided advice on innovations for sustainable energy under a general requirement of "How can we improve society by using accessible clean-energy innovation?"

In this first year, participants entered 30 pieces of work to enter Hackathon activities and present their business plans in the Business Idea Challenge. Three pieces of work qualified for the Sandbox round, with cash support of some Baht 600,000 to evolve their work for the Final Pitching Day, where they presented their final ideas and work plans. The teams consisted of

- "Khwai Ngan" inventors of "Buffbox", a prototype electric motor, designed to assist Thailand's small farmers
- "Onecharge", in collaboration with partners, focused on growing the EV charger network before growing EV charger installation across the country
- "Electron+", owner of the FTE Cooling in Automotive idea (an environmentally friendly cooling technology working with solar cells). The technology lowered the temperature of certain spots in EVs while extending EV battery life to give EVs higher efficiency.

The team that won the top prize for the best idea from new-gen business development of power under the project along with a plaque of honor and Baht 100,000 was the "Electron+" team. The runners-up took Baht 30,000 each along with plaques of honor.





4. Management Discussion and Analysis (MD&A)

Overview

(1) Overall performance of 2022

This year GPSC netted a profit of THB 891 million, down THB 6,248 million or 88 percent from last year, due mainly to a decline in the gross margin of SPP power plants of THB 8,770 million, in turn caused principally by soaring prices of natural gas and coal squeezing margins from electricity distribution to industrial users, whereas Ft could not be adjusted as quickly. Nevertheless, the gross margins of IPPs surged THB 1,200 million largely because Sri Racha Power Plant and GLOW IPP (GIPP) relied on diesel in place of natural gas this year, thus raising electricity distribution margins. Note that the Sri Racha Power Plant posted sales volume rises in line with EGAT's call. GPSC posted a bigger share of the profit of Xayaburi Hydro Power Plant of some THB 330 million due to the greater volume of water than last year.

Synergy from the Acquisition of GLOW

This year GPSC booked some THB 2,740 million in the net synergy value from its acquisition of GLOW, better than planned. Primary activities were in the joint management of power plants and grids, commercial administration of costs, production, customer base growth, production cost management, and bond management.

(2) Economic and Industrial Situations Affecting Operations

Domestic Economic Overview: The Bank of Thailand has projected 3.7-percent GDP growth next year in line with the likely trend of tourism sector recovery, echoing the steady rise in the number of foreign tourists. Also contributing to this is private consumption, buoyed by economic activities, hiring, and healthy adjustment in and more even distribution of wages. The bank has projected that the tourism sector and private consumption would be next year's impetus, while the

global economic slowdown pulls the export sector in the opposite direction, shrinking the export sector and keeping the overall economic recovery comparable to this year. The inflation rate next year has been projected at 3.0 percent, gradually dropping from the peak level of Q3 this year and then returning to the target scope by year-end 2023 in line with the gradual decline in energy prices. Yet, one must closely monitor inflation risks associated with uncertain adjustment in domestic energy prices together with cost transfers by entrepreneurs, which may prove higher and faster than expected due to several aspects of production costs as well as higher electricity tariffs.

Ft: On December 28 this year the Energy Regulatory Commission (ERC) endorsed a formal rise in the Ft value for the January – April 2023 billing period, based on higher fuel prices in line with world prices, notably costly LNG with increasing imports, in addition to the currently weak exchange rates. ERC also deliberated further under the National Energy Policy Council's resolution of November 25 this year, whereby electricity tariffs for residential users are to be lowered by first allocating Gulf of Thailand gas to them after the portion for gas separation plants. The corresponding volume must not pose burdens on present tariffs. So, the Ft value for January – April 2023 falls into two cases.

Residential users are to pay the current rate of 93.43 satang per unit. Gulf gas will be allocated after the portion for gas separation plants, in volumes that do not add electricity tariff burdens to them. All other users are to pay 154.92 satang per unit, an increment of 61.49 satang per unit from the previous billing period.

Given high fluctuations in the energy situation, coupled with concerns about an economic slowdown as well as various key factors that could hurt businesses, GPSC needs to monitor situations closely while continually managing efficiently.

Results of Operations

Operating results of GPSC Group

Unit: THB million

GPSC Group's operating performance	2021	2022	Change YoY
Revenue	74,874	123,685	65%
Cost of sales (exclusive of depreciation and amortization)	(55,206)	(111,814)	103%
Gross profit	19,667	11,871	(40%)
Selling, general, and administrative expenses (SG&A)	(1,963)	(1,868)	(5%)
Other revenue from operations	20	23	14%
EBITDA	17,724	10,026	(43%)
Depreciation and amortization	(8,630)	(8,600)	(0.4%)
EBIT	9,094	1,425	(84%)
Financial cost	(3,860)	(4,299)	11%
Other revenue and expenses	2,100	2,164	3%
Dividend received & share of profits from associates & JVs	1,792	1,731	(3%)
Income tax expense	(1,192)	376	(132%)
Profit before FX and extraordinary items	7,934	1,398	(82%)
Net profit/(loss) from foreign exchange	(93)	59	(163%)
Net Profit	7,840	1,457	(81%)
Non-controlling interests	(522)	(566)	8%
Net profit – parent company	7,319	891	(88%)
Parent company's net profit excluding amortization (Adjusted Net Income)¹	8,907	2,779	(69%)
Gross margin (%)	26%	10%	(17%)
Net gross margin (%)	10%	1%	(9%)
Adjusted Net Income Margin (%)	12%	2%	(10%)

Remark: ¹ Adjusted net income is net profit attributed to GPSC excluding the fair value of intangible assets from the acquisition of GLOW.

Comparison of GPSC Performance (2022 vs. 2021)

1. Revenue from Operations

This year's revenue was THB 123,685 million, a 65 percent or THB 48,811 million jump from last year, largely because of the following:

- **Revenue from IPPs:** This amounted to THB 42,323 million, rising THB 24,028 million or 131 percent from last year, mainly because:
 - Sri Racha Power Plant's revenue surged THB 13,136 million, most of which came from the rise in EP in line with the volume sold to EGAT and the surge in the average electricity sales price in line with the rising costs of raw materials. Meanwhile, the AP revenue fell this year on account of more maintenance turnarounds than last year.
 - GLOW power plants posted THB 10,891 million more this year because GHECO-ONE posted higher revenue with higher EP revenue in line with the average electricity sales price tracking rising coal prices as well as the sales volumes under EGAT's call—all these while the AP revenue remained constant. GIPP posted higher revenue as a result of higher EP revenue, tracking higher electricity tariffs, in turn following the costs of raw materials. Houay Ho Power Plant recorded higher revenue because of higher power generation.
- **Revenue from SPPs:** This equaled THB 80,519 million, surging THB 24,630 million or 44 percent, due largely to the 43-percent and 57-percent rises in the average electricity price and steam price despite the rise in total power distribution and the decline in steam delivery to industrial users.
- **Revenue from VSPPs:** This totaled THB 684 million, rising THB 154 million or 22 percent from last year, largely because CHPP made THB 335 million more from its pontoons, EPC revenue, and revenue from the RDF Power Plant, altogether totaling THB 99 million more than last year. At the same time, there was a drop in ISP1 of THB 279 million, with GPSC's disposal of all shares there, completed on March 18 this year.

2. Cost of Sales and Service Provision (Excluding Depreciation and Amortization)

The cost of sales and service provision this year totaled THB 111,814 million, rising THB 56,608 million or 103 percent from last year, largely because:

- Cost of sales and service provision for IPPs totaled THB 36,234 million, a jump of THB 22,828 million or 170 percent from last year. The principal factors were the costs of other raw materials, which surged THB 17,415 million with the use of diesel instead of natural gas as the main fuel at both Sri Racha Power Plant and GIPP, and the greater power volumes sold by Sri Racha Power Plant. GHECO ONE also incurred THB 7,373 million in coal expenses since the average cost of coal rose 139 percent during the year, coupled with the plant's coal consumption rising 9 percent over the year. Finally, the cost of natural gas plunged THB 2,227 million with reduced consumption.
- Cost of sales and service provision for SPPs amounted to THB 74,867 million, a hike of THB 33,400 million or 81 percent. The main causes of this were the 80-percent and 183-percent higher average prices of natural gas and coal. At the same time, consumption of natural gas dipped 11 percent.
- Cost of sales and service provision for VSPPs and others amounted to THB 713 million, surging THB 379 million or 113 percent from last year, due mainly to the higher booking of other costs, including the cost of pontoons and EPCs of more projects of CHPP in addition to the RDF Power Plant after its COD on May 28, 2021.

3. Gross Profit

The gross profit this year amounted to THB 11,871 million, down THB 7,796 million or 40 percent from last year. This was because:

- Gross profit of IPPs this year jumped THB 1,200 million chiefly on account of the consumption of diesel instead of natural gas by Sri Racha Power Plant and GIPP, thus hiking the power distribution margin. Sri Racha Power Plant also sold more volumes to meet EGAT's call.
- Gross profit of SPPs this year fell THB 8,770 million chiefly on account of sharp rises in gas and coal prices, squeezing the margins of power supplied to industrial users, while the Ft rise could not catch up with fuel costs.
- Gross profit of VSPPs and others this year dropped THB 225 million, largely because GPSC disposed of all its shares in the Ichinoseki 1 (ISP1) to CES Iwate Taiyoko Hatsudensho GK on March 18 this year.

4. Selling, General, and Administrative Expenses (SG&A)

SG&A expenses this year equaled THB 1,868 million, a drop of THB 95 million, due chiefly to the reduction in consultants' expenses and expenses related to activities and public relations.

5. Financial Cost

This year's financial cost equaled THB 4,299 million, rising THB 439 million, due largely to the issuance of green bonds, which were sold in June this year, and borrowings from related businesses and financial institutions for investment in GPSC's power projects.

6. Profit-Loss from Foreign Exchange (FOREX)

The net gain from FOREX this year came to THB 59 million, soaring THB 152 million or 163 percent, due to GPSC's profit from fair value valuation of derivatives.

7. Income Tax

This year GPSC's income tax expenses amounted to THB 376 million, dropping THB 1,568 million or 132 percent from last year in keeping with this year's lower performance and the booking of income tax payable arising from GPSC Group's tax loss carried forwards.

8. Dividend Received and Share of Profits from Investment in Associates and Joint Ventures

This year's dividend received and share of profits from GPSC's investment in associates and joint ventures equaled THB 1,731 million, down THB 61 million, chiefly because of the drop in the dividend received from subsidiaries and indirect associates. Note that GPSC's share of profits from investment in associates and joint ventures rose THB 3 million, due mainly to the rising share of profits from Xayaburi Hydro Power Plant on account of greater volumes of water this year from China and Lao PDR. Also, in Q4 this year, we booked a profit from the interest rate swap with CI Changfang Ltd. and CI Xidao Ltd.

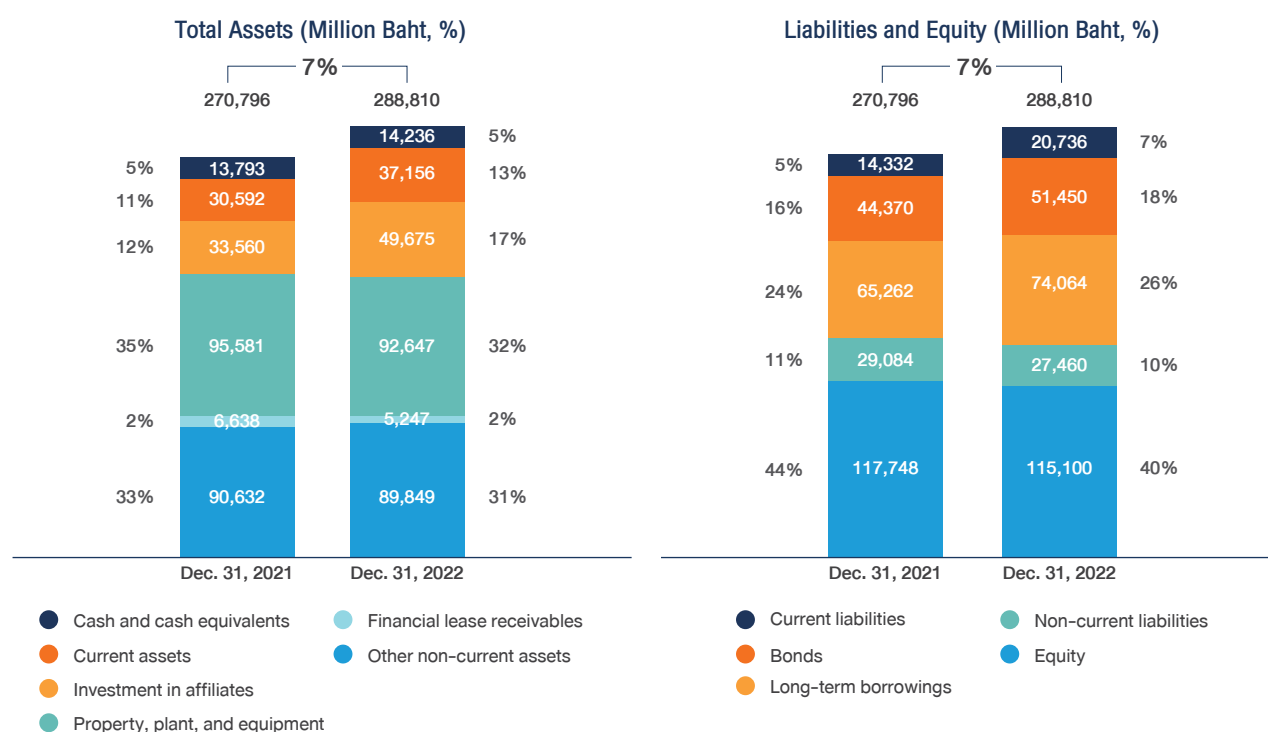


10.1 Share of Profits from Investment in Associates and Joint Ventures

Unit: THB million

Operating Performance	Equity	2021	2022	Change YoY
IPP				
Xayaburi Power Co., Ltd. (XPCL)	25%	944	1,274	35%
SPPs				
Bang Pa-In Cogeneration Co., Ltd. (BIC)	25%	123	43	(65%)
Nava Nakorn Electricity Generating Co., Ltd. (NNEG)	30%	116	(100)	(186%)
Nam Lik 1 Power Co., Ltd. (NL1PC)	40%	67	59	(13%)
VSPPs				
Thai Solar Renewable Co., Ltd. (TSR)	40%	335	342	2%
Eastern Seaboard Clean Energy Co., Ltd. (ESCE)	33%	27	12	(55%)
Avaada Energy Private Limited (AEPL)	42%	(57)	(301)	433%
Global Renewable Power Co., Ltd. (GRP)	50%	(20)	5	(124%)
NUOVO PLUS Co., Ltd.	49%	0	(44)	N/A
CI Changfang Limited and CI Xidao Limited	25%	0	250	N/A
Total share of profits (losses) from investment in associates and joint ventures		1,536	1,539	0.2%

Statement of Financial Position



Total Assets

At year-end 2022, GPSC Group commanded THB 288,810 million in total assets, surging THB 18,014 million or 7 percent year-on-year. Significant elements of this surge are described below.

- Cash and cash equivalents rose THB 443 million or 3 percent
- Investment in affiliates rose THB 16,114 million or 48 percent, due largely to payment of shares in CI Changfang Ltd. and CI Xidao Ltd. (CFXD) and recapitalization for NUOVO PLUS Co., Ltd.
- Property, plant, and equipment fell THB 2,934 million or 3 percent due largely to depreciation and amortization
- Financial lease receivables fell THB 1,391 million or 21 percent
- Other current assets surged THB 6,564 million or 21 percent due largely to the rise in trade account receivables and inventories
- Other non-current assets dropped THB 783 million or 1 percent due largely to the THB 1,751-million drop in intangible assets associated with the sale of assets for the battery business to NUOVO PLUS.

Total Liabilities

At year-end 2022, GPSC Group posted THB 173,710 million in total liabilities, rising THB 20,662 million or 13 percent year-on-year. Significant elements are described below.

- Current liabilities increased THB 6,404 million or 45 percent, consisting of trade payables of THB 4,480 million and current borrowings from financial institutions of THB 3,371 million
- Bonds and long-term borrowings increased THB 15,882 million or 14 percent, consisting of long-term borrowings from related businesses (rising THB 8,100 million) and the issuance of green bonds.
- Other non-current liabilities fell THB 1,625 million or 6 percent because of income tax payables (dropping THB 986 million) and derivative liabilities (dropping THB 720 million).

Total Equity

GPSC Group's equity at year-end 2022 amounted to THB 115,100 million, down THB 2,647 million or 2 percent year-on-year. This decline was due largely to cumulative earnings rising THB 1,457 million, whereas dividends paid out this year came to THB 3,524 million and other comprehensive losses came to THB 580 million.

Statement of Cash Flows

At year-end 2022, GPSC Group commanded a THB 443-million increase in cash and cash equivalents year-on-year, largely because of the following.

Unit: THB million	
Cash Flows	2022
Net cash flow from operating activities	3,438
Net cash flow from investing activities	(14,092)
Net cash flow from financing activities	11,601
Net increase (decrease) in cash and cash equivalents (before the effect of FOREX)	947
Effect of FOREX on cash and cash equivalents	(504)
Net increase (decrease) in cash and cash equivalents	443
Cash and cash equivalents at the beginning of the period	13,793
Cash and cash equivalents at the end of the period	14,236

Cash Flow from Operating Activities

At year-end 2022, GPSC Group commanded THB 3,438 million in cash flow from operating activities, of which THB 4,840 million came from operating activities during the year and THB 1,402 million was in corporate income tax payment.

Cash Flow from Investing Activities

At year-end 2022, GPSC Group commanded THB 14,092 million in cash flow from investing activities:

1. Cash paid for investment in subsidiaries of THB 10,888 million
2. Cash paid for investment in fixed assets of THB 5,507 million
3. Cash received from lending to related businesses of THB 1,261 million
4. Cash received from dividends and interest of THB 1,048 million.

Cash Flow from Financing Activities

At year-end 2022, GPSC Group commanded THB 11,601 million in cash flow from financing activities:

1. Cash received from green bond issuance, green loans, and short-term as well as long-term borrowings involving related businesses of THB 31,741 million
2. Payment of long-term borrowings from financial institutions and bonds of THB 13,078 million
3. Interest payment of THB 3,908 million
4. Dividend payment of THB 3,524 million
5. Debt repayment under financial leases of THB 186 million
6. Cash received from other financing activities of THB 188 million.

Key Financial Ratios

Key Financial Ratio	Unit	2020	2021	2022
Profitability Ratios				
Gross Profit Margin*	%	30.66	26.27	9.60
Net Profit Margin	%	10.79	9.77	0.72
Liabilities Ratios				
Interest Coverage Ratio	Times	2.80	2.36	0.33
Net Debt to Equity Ratio (Net D/E)	Times	0.75	0.78	0.99
Total Debt to Equity Ratio (Total D/E)	Times	1.29	1.30	1.51
Liquidity Ratios				
Liquidity Ratios	Times	1.97	1.97	1.64
Current Ratio	Times	1.34	1.35	1.09

Remark: * Excluding depreciation and amortization

Financial Calculation Formulas

Total Debt to Equity Ratio	Total liabilities / total shareholders' equity
Net Debt to Equity Ratio	(Interest-bearing debts – (cash & cash equivalents + deposits with withdrawal limitations + temporary investment) / shareholders' equity
Interest Coverage Ratio	Profit before interest expenses and income tax / interest expenses
Net Profit to Equity Ratio	Net profit attributable to parent company / average shareholders' equity
Liquidity Ratio	Current assets / current liabilities
Current Ratio	(Cash & cash equivalents + deposits with withdrawal limitations + temporary investment + trade account receivables) / current liabilities



5. General and Key Information

5.1 General Information, Name, Location, Phone, Fax, and Other References

Company Name	:	Global Power Synergy Public Company Limited
Security Name	:	GPSC
Establishment Date	:	January 10, 2013
Registered as Public Company Limited	:	November 27, 2014
First Day of Trade on SET	:	May 18, 2015
Company Registration Number	:	0107557000411
Registered Capital	:	THB 28,197,293,710 as of December 31, 2022, comprising 2,819,729,367 paid-up common shares, with a par value of THB 10 per share for paid-up capital of THB 28,197,293,670
Business	:	GPSC operates as a power, steam, and utilities producer and distributor. In addition, the Company invests in other companies that generate and distribute power, steam, and utilities, including related businesses, both domestic and overseas.
Business Sector	:	Energy and Utilities
Industry Group	:	Resources
Number of Employees	:	849 ⁽¹⁾ as of December 31, 2022
Website	:	www.gpscgroup.com

Contact Information

Investor Relations

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E-mail: ir@gpscgroup.com

Company Secretary and Corporate Governance / Company Secretary

Phone: 0-2140-4632, 0-2140-5317, 0-2140-5301

Fax: 0-2140-4601

E-mail: company-secretary@gpscgroup.com

Remark: ⁽¹⁾ Total 849 employees, including 12 PTT Group secondment

Head Office and Branches

- **Head Office**

555/2 Energy Complex Building B, 5th Floor, Vibhavadi Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok 10900, Thailand

Phone: 0-2140-4600 Fax: 0-2140-4601

- **Branch 1 - Central Utility Plant 1 (CUP-1)**

24 Pakorn Songkro Rat Road, Huay Pong Subdistrict, Muang Rayong District, Rayong 21150, Thailand

Phone: 0-3897-4333 Fax: 0-3897-4500

- **Branch 2 - Central Utility Plant 2 (CUP-2)**

92/9 Rayong Highway No. 3191, Map Ta Phut Subdistrict, Muang Rayong District, Rayong 21150, Thailand

Phone: 0-3897-4333 Fax: 0-3897-4500

- **Branch 3 - Central Utility Plant 3 (CUP-3)**

5/11 Pakorn Songkro Rat Road, Map Ta Phut Subdistrict, Muang Rayong District, Rayong 21150, Thailand

Phone: 0-3897-4333 Fax: 0-3897-4500

- **Branch 4 - Sriracha Power Plant**

42/3 Moo 1, Sukhumvit Road, Thung Sukhla Subdistrict, Si Racha District, Chon Buri 20230, Thailand

Phone: 0-3840-7407 Fax: 0-3840-7400

- **Branch 5 - Maintenance Center**

98/19 Rayong Highway No. 3191, Map Ta Phut Subdistrict, Muang Rayong District, Rayong 21150, Thailand

Phone: 0-3897-4560

- **Branch 6 - RDF Plant**

94/4 Moo 3, Nam Khok Subdistrict, Muang Rayong District, Rayong 21000, Thailand

- **Branch 7 - Central Utility Plant 4 (CUP-4)**

1/2 Moo 2, Ban Chang Subdistrict, Ban Chang District, Rayong 21130, Thailand

- **Branch 8 - Branch Office**

1 Empire Tower, 38th Floor - Park Wing, South Sathon Road, Yannawa Subdistrict, Sathon District, Bangkok 10120, Thailand

Phone: 0-2670-1500 Fax: 0-2670-1548-9

- **Branch 9 - Branch Office**

11, 2 I-5 Road, Map Ta Phut Subdistrict, Muang Rayong District, Rayong 21150, Thailand

- **Branch 10 - Branch Office**

94/7 Moo 3, Nam Khok Subdistrict, Muang Rayong District, Rayong 21000, Thailand.

References:**Securities Registrar****Thailand Securities Depository Company Limited (TSD)**

Stock Exchange of Thailand Building (next to the Embassy of the People's Republic of China)
93 Ratchadaphisek Road, Din Daeng Subdistrict,
Din Daeng District, Bangkok 10400, Thailand
Phone: 0-2009-9999 Fax: 0-2009-9991

Bondholder Representative**Bank of Ayudhya PLC****Head Office:**

1222 Rama III Road, Bang Phongphang
Subdistrict, Yan Nawa District, Bangkok 10120,
Thailand
Phone: 0-2296-3582 Fax: 0-2683-1298

Bond Registrar**(1) Bank of Ayudhya PLC****Head Office:**

1222 Rama III Road, Bang Phongphang
Subdistrict, Yan Nawa District, Bangkok 10120,
Thailand
Phone: 0-2296-3582 Fax: 0-2683-1298

(2) Siam Commercial Bank PLC**Head Office:**

9 SCB Park Plaza, Ratchadapisek Road,
Chatuchak Subdistrict, Chatuchak District,
Bangkok 10900, Thailand
Phone: 0-2777-7777

Auditor**PricewaterhouseCoopers ABAS Limited**

179/74-80 Bangkok City Tower, South Sathon
Road, Thung Maha Mek Subdistrict, Sathon
District, Bangkok 10120, Thailand
Phone: 0-2824-5000 Fax: 0-2286-0500

Legal Consultant**Weerawong, Chinnavat & Partners Ltd.**

540 Mercury Tower, 22nd Floor, Ploen Chit
Road, Lumpini Subdistrict, Pathumwan District,
Bangkok 10330, Thailand
Phone: 0-2264-8000 Fax: 0-2657-2222

5.2 Other Key Information

- None -

5.3 Litigation

GPSC and subsidiaries are currently parties to pending litigation and engaged in the following disputes that could have adverse effects on their business operations:

5.3.1 Dispute with EGAT

Glow Energy PLC ("Subsidiary") is currently involved in a legal dispute with the Electricity Generating Authority of Thailand (EGAT) regarding different interpretation of a provision about the expiry date of the Power Purchase Agreement (PPA) for the Glow Energy Phase 2 Project 1 (90 MW) power plant. On February 6, 2018, the subsidiary, as claimant, filed a statement of claim with the Thai Arbitration Institute ("TAI"). EGAT, as respondent, submitted its statement of defense to TAI on July 26, 2018.

On November 20, 2018, TAI considered the statements, determined the points in dispute, and, together with the parties, established a preliminary procedural timetable for the proceedings. A list of witnesses and evidence was submitted to TAI on February 28, 2019, and the hearing of witnesses and presenting of evidence were completed on March 26, 2019. Both parties submitted their closing statements to TAI on May 17, 2019.

On November 21, 2019, TAI ruled that the expiry date of the PPA was March 31, 2017, as claimed by the subsidiary. EGAT, in disagreement, filed a suit with the Central Administrative Court on February 18, 2020, to revoke TAI's ruling, which the court received for consideration. On September 25, 2020, the subsidiary submitted its testimony to the Administrative Court, and EGAT also filed its counter-testimony stating additional evidence. The subsidiary on April 30, 2021, filed additional testimony to the court.

At present, the case is under the consideration of the Administrative Court.

5.3.2 Dispute with the Energy Regulatory Commission (ERC)

Glow SPP 11 Co., Ltd., filed a lawsuit against ERC and the ERC Office to the Central Administrative Court on July 30, 2019, requesting judgment or an order to cancel or revoke (1) Item 5 (2) of the ERC Notification on the invitation of power purchase from SPPs for the firm category with cogeneration systems with contracts expiring in 2019-2025 (construction of new power plants) B.E. 2562 (2019), dated May 2, 2019, which stated that “To construct new power plants in an old area or adjacent area and sell electricity to industrial customers in industrial estates or industrial parks only” and (2) ERC’s resolution under the order of the ERC Office dated May 15, 2019, stating that Glow SPP 11 lacked the qualifications stated in Item 5 of the ERC Notification since the company was not located in an industrial estate or industrial park, as well as any order and action executed by ERC and its office that Glow SPP 11 was not qualified as an SPP applicant according to the Notification, which was the source of litigation.

ERC and its office submitted its testimony to the Central Administrative Court on December 18, 2019. Glow SPP 11 submitted a counter-testimony to the court on June 8, 2020. Later, ERC submitted an additional testimony to the court. The case was under the consideration of the court.

On January 14, 2021, EGAT informed Glow SPP 11 of the outcomes of its consideration on power purchase application that Glow SPP 11’s application had failed to meet the assessment criteria under the invitation, Item 5 (2), since the electricity was not sold to industrial customers in industrial estates or industrial parks. Glow SPP 11 then submitted its appeal against the results to EGAT, which reaffirmed its results.

On May 28, 2021, Glow SPP 11 filed a suit against EGAT and ERC to the Central Administrative Court, asking them to revoke the order refusing to purchase the power under the proposed power purchase application due to its disqualification.

Then on August 5, 2022, the Board of Glow SPP 11 reviewed all factors, including technical, commercial, procedures and duration of legal proceeding, as well as the company’s own interests, and decided to end the

litigation process in the Central Administrative Court and withdrew its claim. The court therefore issued an order permitting the withdrawal and disposing of the case from the case list on September 5, 2022, and October 12, 2022. The case is now considered terminated.

5.4 Secondary Market

GPSC is not listed on the stock exchange of any other country.

5.5 Financial institutions with regular contacts (only in the cases of bonds)

(1) Bangkok Bank PLC

333 Silom Road, Bang Rak Subdistrict, Bang Rak District, Bangkok 10500, Thailand
Phone: 0-2230-2295, 0-2230-2328, 0-2626-3646 and 0-2353-5421

(2) Kasikorn Bank PLC

Head Office: 400/22 Phahonyothin Road, Samsen Nai Subdistrict, Phya Thai District, Bangkok 10400, Thailand
Phone: 0-2222-0000

(3) Bank of Ayudhya PLC

Head Office: 1222 Rama III Road, Bang Phongphang Subdistrict, Yan Nawa District, Bangkok 10120, 550 Ploenchit Road, Lumpini Subdistrict, Pathumwan District, Bangkok 10330, Thailand
Phone: 0-2296-3999 and 0-2296-4776

(4) Krungthai Bank PLC

Head Office: 35 Sukhumvit Road (Building 1), Khlong Toei Nuea Subdistrict, Watthana District, Bangkok 10110, Thailand
Phone: 0-2111-1111

(5) Siam Commercial Bank PLC

9 SCB Park Plaza, Ratchadapisek Road, Chatuchak Subdistrict, Chatuchak District, Bangkok 10900, Thailand
Phone: 0-2777-7777

(6) Standard Chartered Bank (Thai) PLC

100 North Sathorn Road, Silom Subdistrict, Bang Rak District, Bangkok 10500, Thailand
Phone: 0-2267-7228

6. Corporate Governance

Global Power Synergy Public Company Limited (GPSC) observes the principles of good governance and code of business conduct to ensure that in its pursuit of success and business growth, its business is still marked by good governance, transparency, and responsibility to all stakeholders.

GPSC has revised its Corporate Governance and Code of Business Conduct Handbook in line with current applicable laws. The revised handbook, effective from 2020, guides all its employees in their operation toward efficiency, effectiveness, management excellence, transparency, and accountability, as well as confidence among all stakeholders that GPSC is a leading listed company that adheres to corporate governance and sustainable growth.

6.1 Overview of Corporate Governance Policy and Guidelines

6.1.1 Corporate Governance Policy and Guidelines relevant to the Board of Directors

The Board of Directors is committed to promoting GPSC as an efficient and effective organization with good governance and management excellence to benefit shareholders, employees, customers, stakeholders, and all relevant parties. The executives and employees operate with transparency and accountability. The Corporate Governance Policy therefore guides the Board, executives, and employees in carrying out their duties as detailed below:

1. To uphold good governance, the Board, executives, and employees of GPSC shall adhere to the six following principles in fulfilling their duties:
 - Accountability: Responsibility for one's decisions and actions, and the ability to justify such decisions
 - Responsibility: Responsibility for fulfilling one's duties with due competency and efficiency
 - Equitable Treatment of Stakeholders: Treating stakeholders equally with fairness and reason
 - Transparency: Transparency for conducting business operations with accountability and information disclosure
2. The Board shall fulfill its duties with dedication, responsibility, and independence and shall clearly separate the roles and responsibilities between the Chairman of the Board and the President and CEO.
3. The Board and executives shall play a significant role in determining GPSC's vision, strategies, policies, and key plans while taking into consideration risk factors and preparing appropriate management of such risks and ensure the reliability of the accounting system, financial statements, and account auditing.
4. The Board and executives shall serve as role models of integrity and adherence to GPSC's corporate governance policy as well as overseeing the management of conflicts of interest and connected transactions.
5. The Board may appoint Sub-Committees (Committees) as deemed appropriate to review significant matters.
6. The Board shall perform self-assessment and cross-assessment annually to frame its performance.
7. The Board and executives shall define GPSC's Code of Business Conduct to be adopted as guidelines by the Board, executives, and all employees in tandem with GPSC's rules and regulations.
8. The Board and executives shall oversee sufficient, reliable, and timely disclosure of information on financial and non-financial matters to ensure equal access to GPSC's information among shareholders and stakeholders as well as appointing public relations and investor relations divisions to be responsible for information disclosure for investors and the public.
9. GPSC's shareholders shall receive equitable treatment, have access to information, and be able to communicate with GPSC through appropriate channels.
10. The Board and executives shall implement an appropriate, transparent, and fair recruitment system for personnel in all key positions.
- Vision to Create Long-Term Value
- Ethics: Code of Conduct and ethics in business operations.

11. The Board and executives shall implement an effective anti-corruption system to ensure that management values anti-corruption and adhere to anti-corruption measures.

Apart from the above policy, the Board has determined other guidelines based on GPSC's Corporate Governance as follows:

Guidelines for Serving in Other Companies, Organizations, and Juristic Persons of the President and Chief Executive Officer, Senior Management and Employees

- (1) If any of GPSC's senior management is appointed under an applicable law or by the Cabinet under its authority to assume a position in the government sector or a position for other public interest, apart from performing the Company's duties, management must report such matter to the Board for acknowledgment.
- (2) If GPSC's top executive is appointed by a governmental agency, state enterprise, another public organization, independent organization, or governmental educational institution as a director, subcommittee member, working group, expert, qualified person, adviser or to any position for government services or for other public interest apart from performing the Company's duties, management must report such matter to the Board for acknowledgment and comments before the top executive takes up the duties under the new position appointed.
- (3) If any of the Company's senior management is taking up the duty as a director, subcommittee member, working group, expert, qualified person, adviser or any position in other companies or juristic persons besides those mentioned in (2) or besides performing the Company's duties, that person must submit such matters to the Board for approval before taking up the position.

- (4) Other executives and employees who are not senior management but fall under (1), or (2), or (3) above must submit such matter to the Management Committee (MC) meeting for acknowledgment or approval, as applicable, before taking up the position.

6.1.2 Corporate Governance Policy and Guidelines Applicable to Shareholders and Stakeholders

GPSC respects the rights of shareholders with equitable treatment of all shareholders. The Company's actions in 2022 were highlighted as follows:

1. Rights of Shareholders and Equitable Treatment

The 2022 Annual General Meeting of Shareholders (AGM) was held on April 1, 2022, at the BCC Hall, 5th Floor, Central Plaza Ladprao. GPSC provided the shareholders with convenience in attending the AGM as well as in exercising their voting rights as follows:

Pre-Meeting

- GPSC shareholder(s), which can be either one shareholder or combined shareholders, holding no less than one percent of the total voting rights of GPSC, were invited to propose agenda items and nominate directors from October 1 to December 30, 2021 (at least three months before the AGM). The selection criteria and processes were published on GPSC's website.
- The resolutions of the Board on the AGM date and agenda items as well as the record date to determine the shareholders entitled to attend and vote in the AGM and receive the dividend were published via SET's disclosure system as soon as the resolutions were reached on February 11, 2022.
- The meeting notice, in Thai and English, meeting documents, and proxy forms were made available on GPSC's website on March 2, 2022 (30 days before the AGM) and delivered to shareholders via post on March 11, 2022, (21 days before the AGM) to allow time for shareholders to study the information for the AGM. Foreign shareholders were given the English version of the documents.

- Shareholders unable to attend the meeting were invited to appoint a proxy or grant proxy to independent directors to attend the meeting and vote on their behalf. Proxy Form B (in which shareholders could cast their votes) is encouraged and was enclosed with the meeting notice sent via post to every shareholder.
- Shareholders were invited to submit inquiries about AGM attendance and the agenda before the meeting. The channels for inquiries were disclosed in the meeting notice.
- For institutional investors, GPSC coordinated with their representatives to provide information for institutional investors on the preparation of accurate and complete documents before the meeting.

At the Meeting

- The AGM was held at the BCC Hall, 5th Floor, Building 1, Central Plaza Ladprao, which was accessible via various public transport and spacious enough to accommodate all attending shareholders.
- Sufficient officers were stationed at the venue to welcome and assist shareholders with the registration and document examination. In addition, revenue stamps were prepared to ensure convenience for proxies during the document examination process.
- An IT system (Shareholder Meeting System) was employed for registration, vote counting, and result-displaying processes. The technology expedited the meeting as well as ensuring accuracy.
- The rules of the meeting as well as the voting procedure were announced before the meeting got underway.
- Voting tickets were employed for every agenda item. For director election, the shareholders were eligible to vote for each director separately.
- Independent legal counselors and shareholder representatives were invited to witness the vote counting. After the meeting was concluded, no dispute over the vote-counting was lodged.
- The Chairman of the meeting encouraged and invited inquiries and free expression of opinions from shareholders and oversaw that all inquiries were addressed.

- The meeting was conducted under the agenda detailed in the meeting notice, and no agenda item was added.

Post-Meeting

- The resolutions of the AGM were published via SET's electronic disclosure system for listed companies within the business day after the AGM along with the results and the numbers of votes (approval, disapproval, and abstention) for each resolution.
- The minutes, which identified the directors and top executives attending the meeting, the information presented by the directors, inquiries and answers, and the voting result of the shareholders for each resolution, were submitted to SET and published on GPSC's website within 14 days from the date of the AGM.

2. Vested Interests of Directors and Executives

GPSC has stipulated that its directors and executives shall declare any vested interests of their own and their related persons so that the Board may consider transactions potentially involving conflicts of interest and make decisions in the interest of GPSC. Any directors and executives with conflicts of interest in such transactions of GPSC shall take no part in any decision-making on those transactions. To this end, the Board approved report forms for directors, executives, and related persons, and the applicable criteria which comprised a first report, a report in changes in interests, and a yearly report.

3. Roles of Stakeholders

GPSC takes very seriously the roles of stakeholders, from shareholders, investors, customers, associated government agencies and other applicable agencies, employees, business partners, suppliers, contractors, to society and communities. To this end, GPSC has defined its policy on the roles of stakeholders in its 2020 Corporate Governance and Code of Business Conduct Handbook.

6.2 Code of Business Conduct

The Board has formulated a Code of Business Conduct describing standards of behavior and conduct that all personnel should adopt in carrying out business operation and performing their duties, and has included it as part of the agreement on GPSC's business.

The Code of Business Conduct comprises 15 categories:

1. Compliance with laws and human rights
2. Political rights and political neutrality
3. Conflicts of interest
4. Confidentiality and use of inside information
5. Treatment of customers and consumers
6. Treatment of business competitors
7. Procurement and treatment of business partners
8. Community, social, and environmental responsibility
9. Treatment of employees
10. Treatment of creditors
11. Internal control and internal audit
12. Receiving and offering of gifts and other benefits
13. Safety, health, and environment
14. Intellectual properties and the use of ICT
15. Prevention of money laundering.

Details and guidelines of the principles of GPSC's Corporate Governance and Code of Business Conduct are available in the Corporate Governance and Code of Business Conduct Handbook 2020, which is publicized on GPSC's website.

In addition, GPSC values Investor Relations and emphasizes disclosure of information and strict compliance with applicable laws and regulations in the best interests of shareholders and stakeholders, and has formulated the following ethics for Investor Relations:

1. Perform duties with integrity, honesty, and professionalism without discrimination
2. Ensure timely, complete, and accurate disclosure of key information which is essential for making investment decisions, with equal access for all stakeholders under the criteria
3. Provide equal access to information and allow queries from all stakeholders

4. Safeguard GPSC's confidential information and refrain from using inside information for personal or others' gain before public disclosure
5. Comply with GPSC's rules and policy on safeguarding inside information.

6.3 Highlights of Changes and Development of Corporate Governance Policies, Guidelines, and System

6.3.1 Highlights of Changes and Development of the Review of Corporate Governance Policies, Guidelines, and System, or the Directors' Charters, in 2022:

1. Corporate Governance

- Reviewed the Corporate Governance and Code of Business Conduct Handbook to ensure congruence and appropriate contents suiting GPSC's operations as well as prevailing circumstances. No amendment was made this year.
- Reviewed the charters of the Board and its committees. This year saw amendment made to the charter of the Corporate Governance Committee, which was renamed the Corporate Governance and Sustainability Committee in line with the revised CGR terms and conditions.
- Reviewed and amended the Anti-Corruption Policy and related guidelines for the giving and acceptance of gifts, entertainment, or other benefits, for congruence with CAC's assessment criteria and for clarity and simplicity to GPSC's executives and employees. All these have been related to the executives and employees.
- Reviewed and amended best practices on the use of inside information and the policy on company information disclosure to prevent insider trading, in line with SET's CG code. To elaborate, GPSC declared its policy barring the Board, executives, and employees whose jobs are related to such data from trading GPSC securities during the 30 days and 45 days before the notification of the quarterly and annual financial statements to SET and at least 24 hours after the publicity of the statements.

2. GPSC Group Way of Conduct Management

GPSC announced its management guidance for the GPSC Group Way of Conduct with the following objectives:

- To frame and provide tools as well as guidelines for the oversight of GPSC Group's policy and operations at levels appropriate to the business through teamwork and efficient group management
- To guide and oversee GPSC affiliates through
 - Its representative directors or representative supervisors
 - GPSC units assigned to oversee given affiliates
- To serve as a common agreement on individual policy guidelines between GPSC and its affiliates
- To forge cooperation and synergy for management to achieve investment objectives
- To raise the capability and caliber of business operations and risk management, and pursue sustainability of GPSC Group in parallel with achievement of clarity over GPSC's activities.

GPSC reviewed such management guidance for congruence with the PTT Group Way of Conduct and due affiliate governance. This year saw no amendment made.

3. Compliance

- GPSC reviewed the applicable Compliance Policy and duly amended it in parallel with its own regulations for business efficiency
- GPSC reviewed the policy and guidelines for compliance with the Personal Data Protection Act of 2019. No amendment was made.

6.3.2 Application of SEC's CG Code

The Board considered and assigned management to apply SEC's CG Code in the context of GPSC's business and monitored the outcomes. In 2022, the Company appropriately applied the CG Code to the context of its business.

6.3.3 Other Corporate Governance Practices

- 1) Review and improvement following the advice on the use of the Table of Authority regularly in line with GPSC's circumstances and operations.
- 2) Dealing with complaints on the violation of the Code of Business Conduct involving corruption between January 1 to December 31, 2022. GPSC received no such complaints this year. No corruption offenses were detected this year.
- 3) 2022 AGM assessment (AGM Checklist) by the Thai Investors Association for Thai listed companies to achieve an international standard against assessment criteria for various meeting stages. GPSC achieved a perfect score of 100.

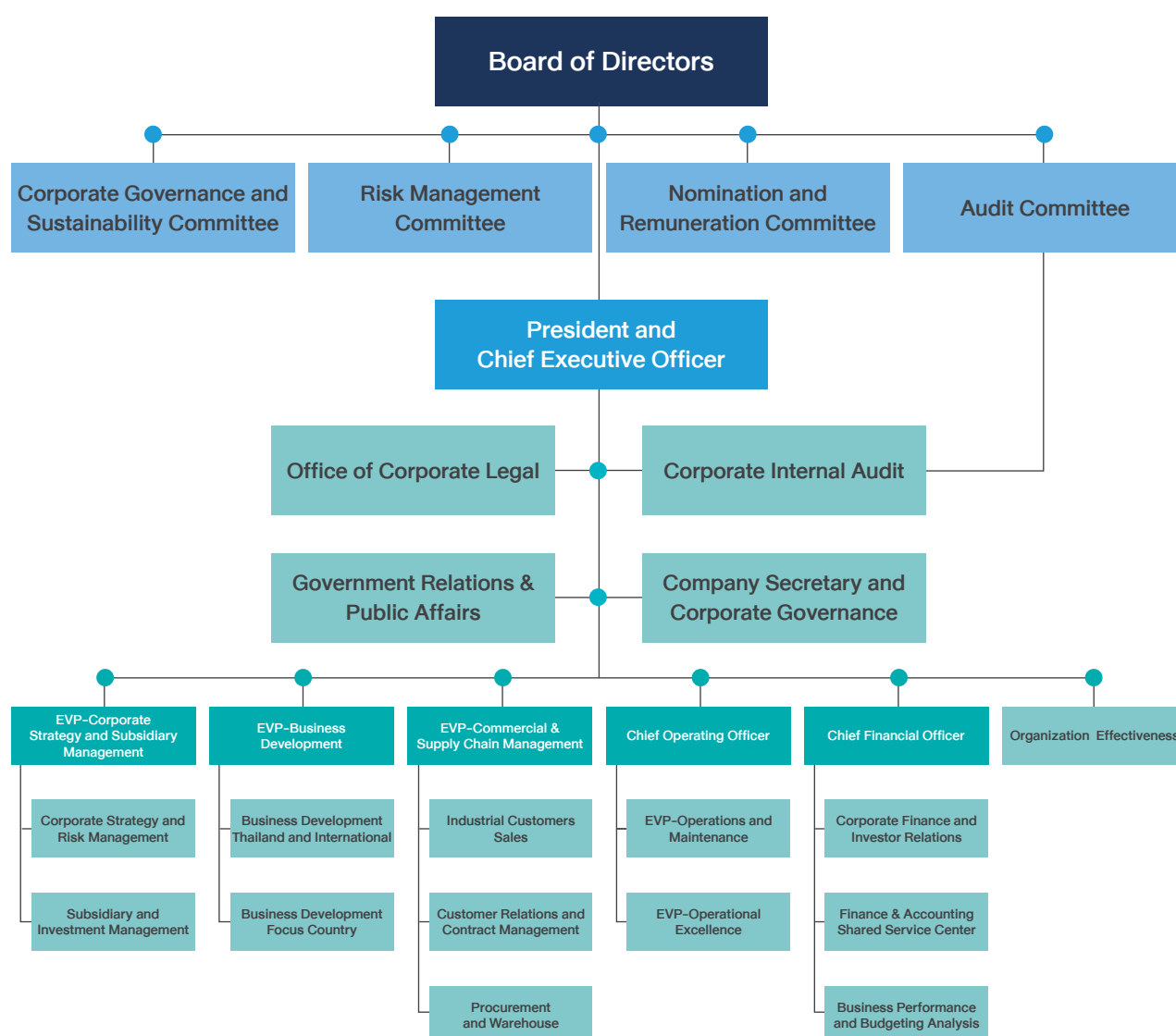


7. Corporate Governance Structure and Key Information on the Board of Directors, Subcommittees, Management, Employees, and Others

7.1 Corporate Governance Structure

As of December 31, 2022, the management structure of Global Power Synergy Plc (the Company) consisted of the Board of Directors, four subcommittees, namely the Corporate Governance and Sustainability Committee, Risk Management Committee, Nomination and Remuneration Committee, and Audit Committee. The management team is led by the President & Chief Executive Officer (CEO).

Organization Structure (Senior Vice President upward)



7.2 Board of Directors

7.2.1 Composition of the Board of Directors

As of December 31, 2022, the Board of Directors consisted of 13 directors, 12 of whom were non-executive directors, six were independent directors, 2 female directors, representing 15.38% and one executive director, namely the President and Chief Executive Officer. Such composition is under GPSC's Articles of Association, which require that the Board must comprise at least five but not more than 15 directors and that no fewer than half of the Board must reside in Thailand.

The Board of Directors consists of qualified professionals with a wide range of skills, expertise, and experience suitable for supervising the Company's operations to achieve its main objectives and goals. The Board

set up a Board Skill Matrix, including clearly defined definitions of skills and expertise on each subject matter, with a total of 12 subject matters and divided into two categories as follows:

- 1) Core Skills/Experience are basic skills necessary for performing the duties as a director of the Company, including policy development, business judgment, strategic planning, human resource management and organizational development, accounting and finance, internal audit, law, risk management and internal control, and corporate governance and corporate social responsibility (CSR).
- 2) Specific Skills/Experience are basic skills necessary for the Company's business operations, such as power industry expertise, international business, and innovation management.

Board Skill Matrix (as of December 31, 2022)

Name - Surname	Director Pool	Skill / Expertise											
		Core Skills										Specific Skills	
		Policy Development	Business Judgment	Strategic Planning	Finance & Accounting	Internal Audit	Law	Corporate Governance & CSR	Risk Management & Internal Control	HR & Organization Development	Power Industry Expertise	International Business	Innovation Management
1. Mr. Pailin Chuchottaworn	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Mr. Kurujit Nakornthap	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
3. Gen. Santipong Thampiya		✓		✓		✓	✓	✓	✓	✓	✓		✓
4. Mrs. Nicha Hiranburana Thuvatham		✓		✓		✓		✓	✓	✓			
5. Mr. Chalermphol Pensoot		✓	✓	✓	✓		✓	✓		✓			
6. Mr. Somchai Meesen		✓	✓	✓				✓		✓	✓		
7. Mr. Noppadol Pinsupa		✓	✓	✓	✓			✓	✓	✓	✓		✓
8. Mr. Wuttikorn Stithit		✓	✓	✓	✓				✓	✓	✓		
9. Mr. Kongkrapan Intarajang		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
10. Mr. Lavaron Sangsnit		✓	✓	✓	✓			✓	✓	✓			
11. M.L. Peekthong Thongyai		✓	✓	✓	✓			✓	✓	✓		✓	✓
12. Miss Pannalin Mahawongtikul	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
13. Mr. Worawat Pitayasiri		✓	✓	✓	✓				✓	✓	✓	✓	✓
Total	3	13	11	13	10	3	4	11	11	13	9	6	7

Board of Directors



Mr. Pailin Chuchottaworn
Independent Director /
Chairman



Mr. Kurujit Nakornthap
Independent Director /
Chairman of the Corporate Governance
and Sustainability Committee /
Member of the Audit Committee



Gen. Santipong Thampiya
Independent Director /
Chairman of the Nomination and
Remuneration Committee



Mr. Noppadol Pinsupa
Director /
Chairman of the
Risk Management Committee /
Member of the Nomination and
Remuneration Committee



M.L. Peekthong Thongyai
Director



Mr. Wuttikorn Stithit
Director



Mrs. Nicha Hiranburana Thuvatham

Independent Director /
Member of the Corporate Governance
and Sustainability Committee



Mr. Chalermphol Pensoot

Independent Director /
Chairman of the Audit Committee



Mr. Somchai Meesen

Independent Director /
Member of the Corporate Governance
and Sustainability Committee /
Member of the Audit Committee



Mr. Kongkrapan Intarajang

Director /
Member of the
Risk Management Committee



Mr. Lavaron Sangsmit

Director /
Member of the
Corporate Governance and
Sustainability Committee



Miss Pannalin Mahawongtikul

Director



Mr. Worawat Pitayasiri

Director /
Secretary to the Board /
Member of the Risk Management
Committee /
President and Chief Executive
Officer

7.2.2 Board of Directors

As of December 31, 2022, the Board comprised 13 directors as follows:

No.	Name – Last Name	Position	Appointment Date
1.	Mr. Pailin Chuchottaworn	Independent Director	April 2, 2021 (re-elected)
		Chairman	April 2, 2021
2.	Mr. Kurujit Nakornthap	Independent Director	June 4, 2020 (re-elected)
		Chairman of the Corporate Governance and Sustainability Committee	June 18, 2020
		Member of the Audit Committee	June 18, 2020
3.	Gen. Santipong Thampiya ⁽¹⁾	Independent Director	April 1, 2022
		Chairman of the Nomination and Remuneration Committee	April 1, 2022
4.	Mrs. Nicha Hiranburana Thuvatham	Independent Director	April 2, 2021 (re-elected)
		Member of the Corporate Governance and Sustainability Committee	April 28, 2021
5.	Mr. Chalermphol Pensoot ⁽²⁾	Independent Director	April 1, 2022
		Chairman of the Audit Committee	April 1, 2022
6.	Mr. Somchai Meesen ⁽³⁾	Independent Director	June 4, 2020
		Member of the Corporate Governance and Sustainability Committee	June 18, 2020
		Member of the Audit Committee	April 1, 2022
7.	Mr. Noppadol Pinsupa ⁽⁴⁾	Director	April 1, 2022 (re-elected)
		Chairman of the Risk Management Committee	April 1, 2022 (re-elected)
		Member of the Nomination and Remuneration Committee	April 1, 2022 (re-elected)
8.	Mr. Wuttikorn Stithit ⁽⁵⁾	Director	April 1, 2022 (re-elected)
9.	Mr. Kongkrapan Intarajang ⁽⁶⁾	Director	April 1, 2022 (re-elected)
		Member of the Risk Management Committee	1 April 2022 (re-elected)
10.	Mr. Lavaron Sangsmit	Director	September 1, 2021
		Member of the Corporate Governance and Sustainability Committee	October 21, 2021
11.	M.L. Peekthong Thongyai ⁽⁷⁾	Director	December 1, 2022
12.	Miss Pannalin Mahawongtikul ⁽⁸⁾	Director	December 1, 2022
13.	Mr. Worawat Pitayasiri	Director / Secretary to the Board	April 2, 2021 (re-elected)
		Member of the Risk Management Committee	April 28, 2021
		President and Chief Executive Officer	December 1, 2020

Remarks:

- ⁽¹⁾ Gen. Santipong Thampiya was appointed as an independent director replacing Maj. Gen. Chaowalek Chayansupap, whose term expired, at the 2022 Annual General Meeting of Shareholders (AGM) of April 1, 2022, with effect from April 1, 2022, and was appointed Chairman of the Nomination and Remuneration Committee at the Board of Directors' Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽²⁾ Mr. Chalermphol Pensoot was appointed as an independent director replacing Mrs. Saowanee Kamolbutr, whose term expired, at the 2022 AGM of April 1, 2022, with effect from April 1, 2022, and was appointed Chairman of the Audit Committee at the Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽³⁾ Mr. Somchai Meesen was appointed as a member of the Audit Committee at the Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁴⁾ Mr. Noppadol Pinsupa was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022, and was re-appointed as a member of the Nomination and Remuneration Committee and Chairman of the Risk Management Committee at the Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁵⁾ Mr. Wuttikorn Stithit was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022.
- ⁽⁶⁾ Mr. Kongkrapan Intarajang was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022, and was re-appointed as a member of the Risk Management Committee at the Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁷⁾ M.L. Peekthong Thongyai was appointed as a director replacing Mr. Atikom Terbsiri, who resigned, at the Board Meeting No. 15/2022 of November 22, 2022, with effect from December 1, 2022.
- ⁽⁸⁾ Miss Pannalin Mahawongtikul was appointed as a director replacing Mr. Wirat Uanarumit, who resigned, at the Board Meeting No. 15/2022 of November 22, 2022, with effect from December 1, 2022.

Directors who resigned and retired in 2022

No.	Name - Last Name	Position	Reason
1.	Maj. Gen. Chaowalek Chayansupap	Independent Director Chairman of the Nomination and Remuneration Committee Member of the Audit Committee	Completed the term at the 2022 Annual General Meeting of Shareholders
2.	Mrs. Saowanee Kamolbutr	Independent Director Chairman of the Audit Committee	Completed the term at the 2022 Annual General Meeting of Shareholders
3.	Mr. Jeerawat Pattanasomsit	Director	Resigned with effect from July 1, 2022
4.	Mr. Atikom Terbsiri	Director Member of the Nomination and Remuneration Committee	Resigned with effect from September 30, 2022
5.	Mr. Wirat Uanarumit	Director Member of the Risk Management Committee	Resigned with effect from September 30, 2022
6.	Mr. Pakorn Apaphant	Independent Director Member of the Risk Management Committee	Resigned with effect from December 26, 2022

Authorized Directors

As of December 31, 2022, the directors authorized to represent GPSC as stated in its affidavit were Mr. Worawat Pitayasiri, President and CEO (with his signature and the corporate seal affixed), or Mr. Kongkrapan Intarajang, or Mr. Wuttikorn Stithit, or Mr. Noppadol Pinsupa, or M.L. Peekthong Thongyai, or Miss Pannalin Mahawongtikul (with signatures of any two and the corporate seal affixed).

7.2.3 Roles and Responsibilities of the Board

Duties and Responsibilities of the Board

The Board of Directors has the roles and responsibilities to oversee GPSC's operations to strictly comply with the laws, objectives, regulations, and resolutions of the shareholders' meetings, according to the code of corporate governance and best practices for the boards of directors of listed companies for the benefit of the Company and its shareholders. The main duties and responsibilities of the Board are as follows:

1. Dedicate time and accord importance to determine the vision, mission, direction, and strategy of the Company by jointly expressing their opinions fully and seeking information that is useful in determining the direction of the Company.
2. Review and approve the key strategies and policies, including the objectives, plans and financial goals of the Company, as well as supervising and following up to ensure that management has consistently implemented the work plans set out under the organization's directions and strategies, and to ensure that management can execute the set vision, directions, and strategies successfully and efficiently.
3. Determine the appropriate policy of corporate governance and code of business conduct that consists of best practice principles for the directors, executives, and employees by aiming to create a sense of responsibility in performing the duties, generate understanding, with strict adherence, in tandem with the rules and regulations of the Company to achieve fairness to all stakeholders.
4. Approve the expenditure of investment funds for various operations, borrowing or applying for any credit from financial institutions, lending money, as well as becoming the guarantor for normal business operations of GPSC without budget limits under its rules and regulations, including the relevant laws, rules, and regulations of the Stock Exchange of Thailand and the Securities and Exchange Commission.
5. Consider important risk factors that may occur and determine comprehensive and complete risk management guidelines, and ensure that the executives have an effective system and process for risk management, including risk factors that may arise from seeking business opportunities.
6. Provide adequate and effective internal control, as well as establishing a process to regularly assess the suitability of the Company's internal-control system.
7. Oversee and manage potential conflicts of interest, including connected transactions, by valuing consideration of key transactions that aim at maximizing the benefits of the shareholders and stakeholders.
8. Consider and approve the appointment of qualified persons with no prohibited characteristics, as specified in the Public Limited Companies Act B.E. 2535 (1992) (including amendments), the Securities and Exchange Act B.E. 2535 (1992) (including amendments), and various laws, including relevant announcements, rules, and/or other regulations, to take up the positions of directors if a position becomes vacant due to reasons other than retirement by rotation, for an appointment of a director to replace a director who retires by rotation, and for an appointment of a new director, including the determination of remuneration for directors, to propose to the shareholders' meetings for approval.
9. Consider and amend the list of authorized directors.
10. Appoint the Audit Committee or any other subcommittee, and determine the authority and duties of such subcommittee to assist and support the performance of the Board.
11. Set up a system for selecting the personnel to appropriately fulfill key management positions with a transparent and fair recruitment process.
12. Appoint executives as defined by the Securities and Exchange Commission or the Capital Market Supervisory Board, and the Company Secretary, and consider their remuneration.
13. Set up a system or mechanism for determining remuneration for the Company's top executives that is appropriate and in line with the performance, to create both short-term and long-term motivation.
14. Conduct regular self-performance assessment and the President and CEO's performance assessment.

15. Provide a reliable accounting system, financial reporting, and auditing, as well as ensuring that there is an efficient and effective internal-audit process.
16. Prepare the financial statements at the end of the Company's accounting year, and countersign them to approve such statements, and present them to the AGM for approval.
17. Consider and approve the selection and appointment of the external auditor, and consider appropriate compensation as presented by the Audit Committee before submitting to the AGM for approval.
18. Value business operations with social and environmental responsibility, as well as promoting the sustainable well-being of the Thai society.
19. Arrange for the assessment of GPSC's performance under its corporate governance policy and the code of business conduct at least once a year.
20. Provide appropriate channels for communicating with each group of shareholders, and supervise the disclosure of information to ensure that it is accurate, clear, transparent, reliable, and of the highest standard.
21. Encourage directors and executives to attend various seminars and courses of the Thai Institute of Directors related to their duties and responsibilities.
22. Organize meetings among non-executive directors and independent directors as deemed necessary or appropriate to discuss various management problems of current interest without the participation of management, and inform the President and CEO of the meeting results.
23. Formulate policies to ensure that GPSC has a system that supports efficient anti-corruption to ensure that management recognizes and gives priority to anti-corruption, and instill them into the corporate culture.
24. Comply with anti-corruption measures and impose penalties for non-compliance.

The Board can authorize and/or assign other people to perform specific tasks on its behalf. Such authorization or delegation shall be within the scope of authorization under the power of attorney provided, and/or under

the rules, regulations, or orders prescribed by the Board. However, the delegation of authority and responsibility of the Board will not be in the form of authorization or delegation that enables the Board or the authorized person to approve the transactions between them and the person who may have a conflict of interest (as defined in the Notifications of the Securities and Exchange Commission or the Capital Market Supervisory Board) or may have a stake or benefit in any way, or any other conflict of interest with the Company or its subsidiaries, except for the approval of transactions under the policy and criteria already approved by the shareholders' meetings or by the Board.

In addition, the businesses of the Board which must be approved by the shareholders' meetings are as follows:

- Engagement in connected transactions and the acquisition or disposition of key assets of GPSC as required by law and the Capital Market Supervisory Board.
- Selling or transferring of GPSC's business wholly or partly to another party.
- Preparation, amendment, termination of the contract relating to the lease of all or some parts of GPSC's business, assignment any other person to manage the Company's business, or merger with another person for the purpose of profit and loss sharing.
- Amendment of GPSC's memorandum of association or articles of association.
- Increasing or decreasing GPSC's registered capital.
- GPSC's dissolution or merger with another company.
- Issuance of GPSC's bonds.

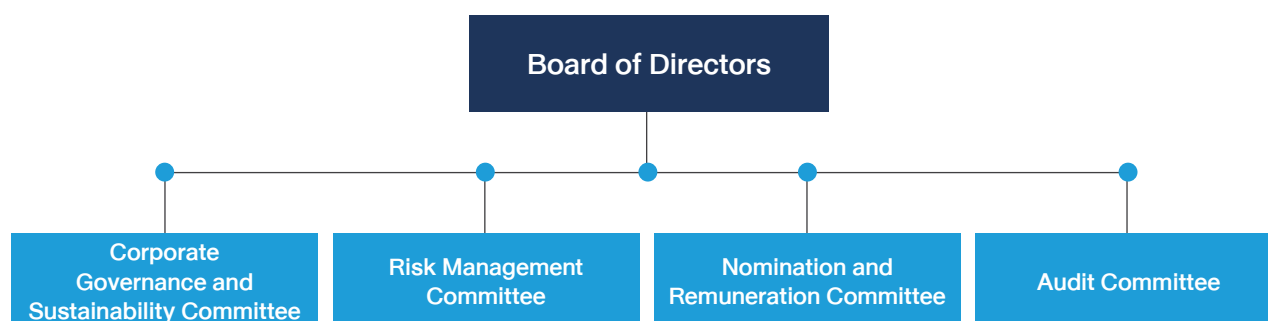
Roles and Responsibilities of the Chairman

1. Supervise, follow up, and oversee the performance of the Board to ensure efficiency and achieve the objectives and main goals of GPSC under the law, corporate governance code, and the scope of duties and responsibilities of the Board.

2. Play a key role in setting the agenda of Board meetings by discussing this matter with the President and CEO and overseeing that essential matters are included.
3. The Chairman or the person assigned by the Chairman is responsible for convening Board meetings by delivering meeting notices to the directors at least seven days before meeting dates, so that they have sufficient time to consider the information for decision-making.
4. Preside over Board meetings for controlling the proceedings for efficiency, allocating sufficient time for presentations and discussions on significant issues on every agenda, and encouraging all directors to consider matters with careful discretion and express opinions independently, as well as leading the meeting to vote and summarizing the resolutions of meetings.
5. Preside over the AGM by controlling the meeting to be effective and in line with the law and the Company's articles of association, as well as allocating sufficient time for making presentations and answering shareholders' questions thoroughly.
6. Supervise and encourage all directors to comply with the corporate governance code, and contribute to fostering an ethical corporate culture and corporate governance.
7. Strengthen good relations between the Board and management.

7.3 Subcommittees

7.3.1 Structure of the Board of Directors



7.3.2 Subcommittees

1. Audit Committee

The Audit Committee consists of three members:

No.	Name – Last Name	Position
1.	Mr. Chalermphol Pensoot	Chairman of the Audit Committee (Independent Director) Expert with knowledge and experience in accounting and financial statement audit
2.	Mr. Kurujit Nakornthap	Member of the Audit Committee (Independent Director)
3.	Mr. Somchai Meesen	Member of the Audit Committee (Independent Director)

Miss Attayar Sukotanang, Senior Vice President, Corporate Internal Audit, served as Secretary.

The Audit Committee of GPSC consists of three independent directors who are experts with experience in accounting and finance, engineering and energy business, law, and management, who are qualified to review the credibility of financial statements under the regulations of the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET).

Composition

The Audit Committee consists of one chairman and at least two but not more than four members. Every member must be independent director and has qualifications on independence according to the Announcement of the Securities and Exchange Commission on the qualifications and scope of work of the Audit Committee. At least one member must possess knowledge, understanding, and experience in finance and accounting to be able to verify the credibility of financial reports.

Scope, Duties, and Responsibilities

1. Establish regulations to ensure that its practices are under the Audit Committee Charter, and regularly review the appropriateness of such regulations.
2. Financial reports and auditing
 - 2.1) Review the Company's financial process and reports to ensure that the financial reports reflect an accurate and reliable financial position and disclose material information completely, and under accounting standards, laws, and related standards.
 - 2.2) Consider, select, nominate, and propose remuneration for the external auditor(s) to obtain independent auditor(s), as well as proposing removal of the auditor(s) if he/she is unable to perform the duties, or neglects to perform the duties, or acts improperly.
 - 2.3) Promote independence and provide opinions on the suitability of the auditor(s), as well as attending the meeting with the external auditor(s), without the presence of management, at least once a year.
3. Internal control
 - 3.1) Review to ensure that the Company commands an internal-audit system, an internal-control system, and a risk management system, according to an appropriate and effective internal control framework, and supervise Corporate Internal Audit to perform according to appropriate internal audit standards.
 - 3.2) Guide management to improve work process, or work system to reduce risks in various matters in order to have an efficient working system, including accurate and useful financial reports.
 - 3.3) Guide the formulation of the corporate governance policy, and monitor, evaluate, and report the performance, against corporate governance guidelines.
 - 3.4) Review the operation and process of corporate governance of GPSC to operate under relevant policies, rules, regulations, requirements, operational procedures, and laws, as well as instructions related to the operations of the Company.
 - 3.5) Arrange for management to set up a process to deal with complaints and whistleblowing.
4. Internal Audit
 - 4.1) Review the Company to ensure an appropriate and efficient internal-audit system, and supervise Corporate Internal Audit to comply with internal-audit standards, and consider the adequacy of the personnel and the independence of Corporate Internal Audit.
 - 4.2) Determine the scope of internal auditing by reviewing and approving the annual internal-audit plan and changes to the plan, and consider the audit result of the internal auditors.
 - 4.3) Evaluate the performance of the Chief of Corporate Internal Audit.
 - 4.4) Consider and approve the appointment, transfer, and removal of the Chief of Corporate Internal Audit.

- 4.5) Review and approve the Internal Audit Charter.
 - 4.6) Coordinate and foster common understanding among the Audit Committee, management, Corporate Internal Audit, and the external auditor, and consider the scope of the audit with the external auditor to be interrelated and mutually supportive.
5. Compliance with relevant laws and regulations
 - 5.1) Review compliance with the securities and exchange laws, SET's requirements, and other laws related to the business of the Company.
 - 5.2) Consider connected transactions or transactions that may have conflict of interest or potential corruption that may impact operations, under SET's laws and regulations. This is to ensure that such transactions are sensible and in the best interests of the Company.
 - 5.3) Approve the Audit Committee Charter before presenting it to the Board for approval, and arrange for a review at least once a year.
 - 5.4) Evaluate its own performance by self-assessment and report assessment results, together with problems and obstacles that may hinder it from achieving its objectives, and inform the Board every year.
 6. Reporting
 - 6.1) Prepare the report of the Audit Committee and disclose it in the annual report. Such report must be signed by the Chairman of the Audit Committee, and must contain at least the following information:
 - Opinions on the accuracy, completeness, and credibility of financial reports.
 - Opinions on the adequacy of the internal-control system.
 - Opinions on compliance with the Securities and Exchange Act, SET's requirements, or laws related to the business of the Company.
 - Opinions on the suitability of the external auditor.
 - Comments on the transactions with potential conflicts of interest.
 - Number of meetings of the Audit Committee and meeting attendance of each member.
 - Opinions or overall observations received by the Audit Committee from performing its duties under the Charter.
 - Other items that the shareholders and general investors should know under the scope of duties and responsibilities as assigned by the Board.
 7. Other functions
 - 7.1) If any auditing or any other operation of the Audit Committee requires knowledge and competency from expert on a particular subject, the Audit Committee shall propose to the Board to invite or hire expert(s) on a particular subject at the expense of GPSC. However, the hiring process shall be under the regulations of the Company. The Audit Committee is also empowered to appoint a working group to support its performance.
 - 7.2) When the Audit Committee receives an internal-audit report that there is violation of the laws, rules, regulations, work practices, notifications, and orders related to the Company's operations, it must notify senior executives to consider ordering the unit responsible for the Company's operations to rectify it to comply with policies, rules, regulations, requirements, practices, and relevant laws, and orders related to the operations of the Company.

If the Audit Committee receives an internal-audit report suspecting that there is a transaction or action that may cause serious damage to the Company's operations, namely:

- Conflict of interest.
- Corruption or irregular transactions or significant deficiency in the internal-control system.
- Violation of securities and exchange laws, SET's requirements, or other laws related to business.

The Committee must report it to the Board immediately so that improvements can be promptly made. If the Board or management fails to make due improvement within a reasonable time, any member of the Audit Committee may report to the SEC.

- 7.3) After the Audit Committee has been notified if the external auditor finds suspicious circumstances where a director, manager, or person responsible for the Company's operations committed an offense relating to

duties and responsibilities under the Securities and Exchange Act, Section 281/2, paragraph 2, Section 305, Section 306, Section 308, Section 309, Section 310, Section 311, Section 312, or Section 313, the Audit Committee shall inspect and report the preliminary internal-audit result to the Board for acknowledgment and report it to the SEC, SET, and the external auditor within 30 days from the date of receiving the notification from the auditor.

- 7.4) Perform any other task as assigned by the Board or the shareholders with the approval of the Audit Committee or as prescribed by law.

Regarding changes in the scope, duties, and responsibilities of the Audit Committee, GPSC shall disclose the resolution of changes in duties, list of names, and scope of work of the Audit committee that have been changed, under the format prescribed by the SET, to the SET within three workdays from the date of such change, by the method according to the regulations under the SET's notification on e-reporting.

2. Nomination and Remuneration Committee

The Nomination and Remuneration Committee consists of three members:

Order	Name - Last Name	Position
1.	General Santipong Thampiya	Chairman of the Nomination and Remuneration Committee (Independent Director)
2.	Mr. Noppadol Pinsupa	Member of the Nomination and Remuneration Committee
3.	Mr. Wuttikorn Stithit	Member of the Nomination and Remuneration Committee

Miss Pallapa Achanon, Senior Vice President, Company Secretary and Corporate Affairs/Company Secretary, served as Secretary.

Composition

The Nomination and Remuneration Committee consists of at least three members, and at least one person must be independent director. The members have the same tenures as their directorship. Retiring members are eligible for re-appointment.

Scope of Duties and Responsibilities

1. Select qualified candidates to be nominated as new directors and the President and CEO by establishing criteria and procedures for such selection, and ensure that the selection criteria and processes are rigorous and transparent, before proposing them to the Board and/or the shareholders' meetings for approval.
2. Consider remuneration guidelines for directors and the President and CEO by ensuring that the criteria or procedures are fair and reasonable, before proposing them to the Board and/or the shareholders' meetings for approval.
3. Nominate qualified directors as members of subcommittees before proposing them to the Board for appointment as deemed appropriate.
4. Provide opinions to the Board on the remuneration structure and composition of directors annually.
5. Evaluate the performance of the President and CEO and make recommendations to the Board to determine appropriate remuneration.
6. Review the succession plan for the President and CEO, and the list of candidates qualified for succession consideration.
7. Report the performance of the Nomination and Remuneration Committee to the Board for acknowledgment and prepare a report, endorsed by the Chairman, to be disclosed in the annual report.
8. Perform other tasks as assigned by the Board.

3. Corporate Governance and Sustainability Committee

The Corporate Governance and Sustainability Committee consists of four members:

No.	Name – Last Name	Position
1.	Mr. Kurujit Nakornthap	Chairman of the Corporate Governance and Sustainability Committee (Independent Director)
2.	Mrs. Nicha Hiranburana Thuvatham	Member (Independent Director)
3.	Mr. Somchai Meesen	Member (Independent Director)
4.	Mr. Lavaron Sangsnit	Member

Miss Pallapa Achanon, Senior Vice President, Company Secretary and Corporate Governance/Company Secretary, served as Secretary.

Composition

The Corporate Governance and Sustainability Committee consists of at least three members, with no less than half of the members being independent directors. The members have the same tenures as their directorship. Retiring members are eligible for re-appointment.

Scope, Duties, and Responsibilities

Corporate Governance

1. Determine, review, and recommend policies relating to the business ethics and code of conduct, as well as anti-corruption under the corporate governance code, and propose them to the Board for approval and implementation as part of GPSC's standard practices.
2. Offer advice and supervise the performance of directors and management to ensure adherence to the corporate governance code stipulated by supervisory institutions such as the SET, SEC, and/or other relevant regulatory agencies.
3. Encourage internal assessment of corporate governance standards and apply for assessment by recognized external organizations on a regular basis.
4. Advocate dissemination of the culture of corporate governance among all executives and employees for practical results in both GPSC and its affiliates.
2. Offer advice and encourage the formulation of GPSC's principles, policies, strategies, and operations under the principles of sustainable development of the business and the corporation to achieve objectives and prepare for CG ranking performed by neutral external organizations. And support the Board, executives, and employees to ensure their efficient compliance with GPSC's sustainable development guidelines.
3. Supervise, monitor, and assess sustainable development performance to ensure balance and efficiency in the best interests of the Company and stakeholders.

Other Duties

1. Consider and approve the assessment forms and the performance assessment results of the Board before presenting them to the Board.
2. Report the performance of the Corporate Governance and Sustainability Committee to the Board for acknowledgment and disclose it in Form 56-1 One Report. If there are factors or events that may affect the Company significantly, the Committee must report them to the Board for acknowledgment and consideration as soon as possible.
3. Regularly review the suitability of the Corporate Governance and Sustainability Committee Charter.
4. The Corporate Governance and Sustainability Committee is responsible for appointing its secretary as seen fit.
5. Perform other tasks as assigned by the Board.

Sustainability

1. Determine, and review policies, and strategies and improve GPSC's sustainable development goals with an appropriate balance in various aspects, including environmental, social, and governance (ESG), in compliance with corporate governance guidelines by national and international standards, as well as corporate social responsibility (CSR) of surrounding communities.

4. Risk Management Committee

The Risk Management Committee consists of four members:

No.	Name – Last Name	Position
1.	Mr. Noppadol Pinsupa	Chairman of the Risk Management Committee
2.	Gen. Santipong Thampiya	Member (Independent Director)
3.	Mr. Kongkrapan Intarajang	Member
4.	Mr. Worawat Pitayasiri	Member

Mr. Perapol Umpaivit, Acting Senior Vice President, Corporate Strategy and Risk Management, served as Secretary.

Composition

The Risk Management Committee consists of at least three directors, comprising executives and independent directors. The term of office is three years in line with the tenures of directors. Members who retire by rotation may be re-appointed by the Board.

Scope, Duties, and Responsibilities

1. Define and review the corporate risk management framework policies related to GPSC's business operations.
2. Supervise and support the implementation of corporate risk management in line with the business strategy and goals, including shifting circumstances.
3. Provide recommendations for guidelines, monitor, and assess risk management to the Risk Management and Internal Control Committee (RMCC, management level) for further implementation.
4. Consider corporate risk management reports and comment on the risks that may occur, including guidelines for setting control or mitigation measures and development of a corporate risk management system for the RMCC to ensure continuous efficiency.
5. Supervise risk management plans and risk management systems or processes to reduce impacts on GPSC's business, and monitor and assess the implementation of the risk management framework across the organization to ensure that the Company has adequate and appropriate risk management.
6. Supervise and support risk management operation that covers all aspects of risks, including environmental, social, and governance risks (ESG risks) as well as anti-corruption of GPSC and GPSC Group.
7. Support and develop risk management at all levels across the organization, including various tools, continuously and efficiently, and advocate the risk management culture.
8. Report corporate risk management results to the Board for acknowledgment. If there are factors or events that may affect GPSC significantly, the Committee must report them to the Board for acknowledgment and consideration as soon as possible.
9. Meetings of the Risk Management Committee must be held at least once every quarter.
10. Perform other tasks as assigned by the Board.



Board of Executives



Mr. Worawat Pitayasiri
President and CEO



Mr. Sirimet Leepagorn
Chief Operating Officer



Mr. Thitipong Jurapornsiridee
Chief Financial Officer



Mrs. Rosaya Teinwan
Executive Vice President,
Business Development



Mrs. Sriprapha Sumruatruamphol
Executive Vice President,
Commercial and Supply
Chain Management



Mr. Arjan van den Broek
Executive Vice President,
Operations and Maintenance



Mr. Kulapat Permbhusri
Executive Vice President,
Corporate Strategy and
Subsidiary Management



Mr. Wisit Srinuntawong
Executive Vice President,
Operational Excellence



Mrs. Prinda Ma-imjai

Senior Vice President,
Organization Effectiveness
and Acting Vice President,
Digitalization and Platform
Strategy



Mr. Jaruwat Singsomdee

Senior Vice President,
Subsidiary and Investment
Management



Miss Dutdao Suksamran

Senior Vice President,
Office of Legal



Miss Attayar Sukotanang

Senior Vice President,
Corporate Internal Audit



Miss Pallapa Achanon

Senior Vice President,
Company Secretary and
Corporate Governance



Mr. Laksanapreecha Krutkuntode

Senior Vice President,
attached to Executive
Vice President,
Business Development



Mr. Narongchai Visutrachai

Senior Vice President,
Government Relations and
Public Affairs



Mr. Reungpong Reunghirun

Senior Vice President,
Acting Vice President,
Business Development
Technical Intelligence

Board of Executives



Miss Sukittee Chaiyarak

Senior Vice President,
attached to the Chief Financial Officer
and seconded as Managing Director
to GPSC TC



Mrs. Sirobon Boontaworn

Senior Vice President,
Corporate Finance and
Investor Relations



Miss Suttasinee Pengsupaya

Senior Vice President,
attached to the Chief Financial
Officer



Mr. Sutthi Chuesook

Senior Vice President,
Plant Operations, Rayong Cogen



Mr. Surajit Bourtherng

Senior Vice President,
Plant Operations, Other Areas



Mr. Somsak Lertcharoensersuk

Senior Vice President,
Project Construction Management



Mr. Saochai Sookkasem

Senior Vice President,
SSHE



Mr. Suratchai Bangluang

Senior Vice President,
Maintenance Execution



Mrs. Mantana Kunakorn

Senior Vice President



Mr. Manatchai Kongrakkawin

Senior Vice President,
Customer Relations and
Contract Management



Mr. Augsuthon Puboonterm

Senior Vice President, Plant and
Production Optimization, and Acting
Manager, Gas and Coal Power Plant
Optimization



Mrs. Patchara Charoonwutthitham

Senior Vice President,
Business Performance and
Budgeting Analysis



Mr. Nutthapong Puangmanee

Senior Vice President,
Business Development Thailand
and International



Mr. Thananchai Chaisrakaew

Senior Vice President,
Plant Engineering and Improvement



Mr. Krittapong Tangsitthisilpa

Senior Vice President,
Finance and Accounting Shared
Service Center



Miss Sirichan Chotchaisathit

Senior Vice President,
Industrial Customers Sales



Mr. Prateep Putthathamraksa

Senior Vice President,
Procurement and Warehouse



Mr. Perapol Umpaivit

Acting Senior Vice President,
Corporate Strategy and
Risk Management

7.4 Management Information

7.4.1 As of December 31, 2022, GPSC's Senior Vice Presidents and over were:

No	Name	Position
1.	Mr. Worawat Pitayasiri	President and CEO
2.	Mr. Sirimet Leepagorn	Chief Operating Officer
3.	Mr. Thitipong Jurapornsiridee	Chief Financial Officer
4.	Mrs. Rosaya Teinwan	Executive Vice President, Business Development
5.	Mrs. Sriprapha Sumruatruamphol	Executive Vice President, Commercial and Supply Chain Management
6.	Mr. Arjan van den Broek	Executive Vice President, Operations and Maintenance
7.	Mr. Kulapat Permbhusri	Executive Vice President, Corporate Strategy and Subsidiary Management
8.	Mr. Wisit Srinuntawong	Executive Vice President, Operational Excellence
9.	Mrs. Prinda Ma-imjai	Senior Vice President, Organization Effectiveness and Acting Vice President, Digitalization and Platform Strategy
10.	Mr. Jaruwat Singsomdee	Senior Vice President, Subsidiary and Investment Management
11.	Miss Dutdao Suksamran	Senior Vice President, Office of Legal
12.	Miss Attayar Sukotanang	Senior Vice President, Corporate Internal Audit
13.	Miss Pallapa Achanon	Senior Vice President, Company Secretary and Corporate Governance
14.	Mr. Laksanapreecha Krutkuntode	Senior Vice President, attached to Executive Vice President, Business Development
15.	Mr. Narongchai Visutrachai	Senior Vice President, Government Relations and Public Affairs
16.	Mr. Reungpong Reunghirun	Senior Vice President, Acting Vice President, Business Development Technical Intelligence
17.	Miss Sukittee Chaiyarak	Senior Vice President, attached to the Chief Financial Officer and seconded as Managing Director to GPSC TC
18.	Mrs. Sirobon Boontaworn	Senior Vice President, Corporate Finance and Investor Relations
19.	Miss Suttasinee Pengsupaya	Senior Vice President, attached to the Chief Financial Officer
20.	Mr. Sutthi Chuesook	Senior Vice President, Plant Operations, Rayong Cogen
21.	Mr. Surajit Bourtherng	Senior Vice President, Plant Operations, Other Areas
22.	Mr. Somsak Lertcharoensersuk	Senior Vice President, Project Construction Management
23.	Mr. Saochai Sookkasem	Senior Vice President, SSHE
24.	Mr. Suratchai Bangluang	Senior Vice President, Maintenance Execution
25.	Mrs. Mantana Kunakorn	Senior Vice President
26.	Mr. Manatchai Kongrakkawin	Senior Vice President, Customer Relations and Contract Management
27.	Mr. Augsuthon Puboonterm	Senior Vice President, Plant and Production Optimization, and Acting Manager, Gas and Coal Power Plant Optimization

No	Name	Position
28.	Mrs. Patchara Charoonwutthitham	Senior Vice President, Business Performance and Budgeting Analysis
29.	Mr. Nutthapong Puangmanee	Senior Vice President, Business Development Thailand and International
30.	Mr. Thananchai Chaisrakaew	Senior Vice President, Plant Engineering and Improvement
31.	Mr. Krittapong Tangsitthisilpa	Senior Vice President, Finance and Accounting Shared Service Center
32.	Miss Sirichan Chotchaisathit	Senior Vice President, Industrial Customers Sales
33.	Mr. Prateep Putthathamraksa	Senior Vice President, Procurement and Warehouse
34.	Mr. Perapol Umpaivit	Acting Senior Vice President, Corporate Strategy and Risk Management

Executives No. 1-8 are classified as the first four executives according to the SEC's definition.

Duties and Responsibilities of the President and CEO

The President and CEO has the authority and duties relating to the management of GPSC's operations as assigned by the Board and must manage the Company according to the plans and budgets approved by the Board with stringency, honesty, and caution, while protecting the best interests of the Company and shareholders. These authority and duties include the following matters and activities:

- 1) Carry out GPSC's day-to-day operations
- 2) Implement the plans and budgets as approved by the Board
- 3) Prepare the reports, plans, and financial statements of GPSC and present them to the Board every quarter
- 4) Prepare GPSC's commercial policies and engage in any contracts or obligations relating to the sale of products on behalf of the Company, both now and in the future for a period of up to ten years and worth up to THB 5,000 million. If there is an additional investment, he/she must conform to the Company's regulations on investment criteria before approving any contract or obligation.
- 5) Engage in or cancel any contract or obligation other than those specified in Item 4, up to a value of THB 300 million.

- 6) Employ, appoint, remove, transfer, promote, demote, deduct salary or wage, take disciplinary action, or terminate employment of employees on behalf of GPSC, and appoint executives and delegate authority and duties to such personnel as deemed appropriate.

In addition, the Board has granted a power of attorney to the President and CEO for the task of managing the Company under the following principles and scope of authority:

- Authority to manage GPSC's business against the objectives, regulations, policies, rules, requirements, orders, and resolutions of the Board's and /or the shareholders' meetings in all respects.
- Authority to command, contact, order, and operate, and sign juristic acts, contracts, orders, announcements, or any necessary and appropriate documents to fulfill the above operations.
- Authority to delegate and/or assign others to perform specific tasks and such delegation and/or assignment must be within the scope of authorization under the specific letter of authorization and /or under the rules, regulations, requirements, or orders of the Board and/or GPSC.

However, the exercise of authority of the President and CEO as mentioned above cannot be applied if he/she has a vested interest or may have a conflict of interest in any manner with GPSC.

7.4.2 Compensation Policy for Management Directors and Management Executives

The remuneration for all executives is under the key performance indicators (KPIs) which are jointly set by the Board of Directors, President and CEO, and senior management. The KPIs comprise four perspectives namely financial, stakeholder, internal work process, and learning and growth of GPSC and its employees, covering both annual performance (short-term) and assessment of competency and leadership which will ensure that the organization will pursue its strategic goals in the long term. All executives have their respective performance indicators corresponding to their roles. Each year the Board will consider salary adjustments for the President and CEO, while the President and CEO will consider salary adjustments of senior management, based on their performances. Such salary adjustments must fall under GPSC's criteria.

7.4.3 Total Compensation for Management Executives

Cash Compensation

- Cash compensation for management executives:

	2022
Persons	34
Compensation (Baht)	141,663,345.00

Other compensation

- Other cash compensation, including provident fund contribution and other income:

	2022
Persons	34
Compensation (Baht)	88,795,359.11

7.5 Employee Data

Below is GPSC's employee headcount (excluding Senior Vice Presidents or higher) by function as of December 31, 2022 with details:

No.	Function	No. of Employees
		As of December 31, 2022
1	President and CEO	4
2	Chief Operating Officer	467
3	Chief Financial Officer	72
4	EVP, Corporate Strategy and Subsidiary Management	48
5	EVP, Business Development	50
6	EVP, Commercial and Supply Chain Management	81
7	Organization Effectiveness	34
8	Company Secretary and Corporate Governance	16
9	Corporate Internal Audit	5
10	Government Relations & Public Affairs	27
11	Office of Legal	11
Total		815

Employee Remuneration (excluding Senior Vice Presidents or higher)

Below is remuneration, which consists of salary, bonus, provident fund contributions, and other income in 2022 (from January 1 to December 31, 2022) with details as follows:

No.	Function	Remuneration
		As of December 31, 2022
1.	President and CEO	4,252,659.60
2.	Chief Operating Officer	693,918,569.67
3.	Chief Financial Officer	96,066,667.54
4.	EVP, Corporate Strategy and Subsidiary Management	93,758,837.89
5.	EVP, Business Development	77,036,465.81
6.	EVP, Commercial and Supply Chain Management	106,516,672.72
7.	Organization Effectiveness	49,555,696.21
8.	Company Secretary and Corporate Governance	20,202,949.51
9.	Corporate Internal Audit	16,550,212.88
10.	Government Relations & Public Affairs	40,644,513.08
11.	Office of Legal	20,721,636.00
Total		1,219,224,880.91

HR Management Policy

GPSC recognizes that employees are valuable resources and key to driving business growth. The Company therefore values human resource management, covering potential development, employee care, long-term talent retention, as well as incentives and employee engagement. The Company believes that efficient human resource management will increase the competitiveness of the business and drive the organization to achieve its goals, which will lead to the vision of being the international leading power company in innovation and sustainability.

GPSC's challenge in HR development for sustainable operations is to prepare and develop employees' potential in line with the strategic direction of the corporation under ever-changing world conditions of the economy, society, environment, and technology, which may affect the skills, knowledge, and abilities of employees, as well as promoting employee engagement. In 2022, the leadership potential of

executives and employees was strengthened to support the growth of the organization in the future, including recruitment of internal personnel who were ready to fill vacancies promptly.

Performance of Human Resources and Organizational Development Strategies

In 2022, for HR management, GPSC defined a human resource management strategic plan which was connected, consistent, and in the same direction as the Company's 4S business strategy, as well as shifting situations both in and outside GPSC, as follows:

- 1. Organization Transformation & Agile.** It aims to transform the organization for agility by reviewing the organization structure and operating model of GPSC Group, preparing a plan to improve the business process and workflow to be efficient and agile to support the new way of work and the SMART working environment to underlie future business transformation.

- 2. Introduce Adhocracy Culture.** It creates a work environment that encourages creativity, flexibility, entrepreneurship, and focus on innovation so as to be the innovator in the market. The Company reviews its ACT SPIRIT corporate values and expected behaviors consistent with the current way of working, including emphasis on communication to create knowledge and understanding of new expected behaviors that can be applied to efficient work performance.
- 3. Leadership Development and People Capability.** The Company is committed to developing leaders at all levels to support future business growth, including an intensive and ongoing focus on succession planning, individual development plans, and a mentor system to take care, help, support, and advise personnel in the Leadership Pool, as well as formulation of an HR strategy and policy to support the talent mobility strategy under the Company's strategic plan.
- 4. Creative Employees Experiences.** It fosters good employee experience to ensure their engagement and happiness at work through studying and analyzing data from interviews with executives and employees in an effort to design good work experiences for employees throughout the periods of their employment in the Company.
- 5. Lean Process with Single Data Platform.** It improves work processes, reduces operational processes that do not create value, studies guidelines for applying technology to work (automation) and improves a corporate-wide employee database for more efficient, more accurate, and faster work.

Key Performance Aligning with Human Resources and Organizational Development Strategies

GPSC values organizational development in parallel with HR development across all levels. Personnel with high potential will be the success factor in leading GPSC towards sustainable growth. The Company implements holistic employee care and capacity building as follows:

1. Organizational Development

GPSC aims to create and promote ACT SPIRIT as corporate values by adjusting the new set of behaviors in line with the strategy and global transformation and fosters the corporate culture through efficient work collaboration, communication, and creative activities. It provides useful information in working with each group of employees to ensure their happiness at work in the midst of Covid-19.

2. Human Resource Development

The potential of employees is critical to increase the competitiveness of the organization, especially under the ongoing transformation of the power business. Hence, GPSC recognizes the development of employees to command essential knowledge and skills according to the Company's direction by setting clear guidelines for employee development which is suitable for the Company's operations through the establishment of the GPSC Academy as the center for employee development programs.

3. Spark Accelerator Management Trainee Program

GPSC has set a key strategy to create the New S-Curve Business. Therefore, building and developing skilled leaders of the future is accorded high importance by the Company. Consequently, it has initiated the "Spark Accelerator Management Trainee Program" to develop future leaders of GPSC Group, the innovative flagship of the power business of PTT Group. This project has been created to prepare potential employees to become the Company's future leaders through learning mechanisms that are diverse and challenging, both domestically and internationally. The project is open to both employees and external personnel. Participants in the project will have the opportunity to go through three key job rotations of GPSC in three years, such as corporate strategy and subsidiary management, business development, commerce, financial management, and operation.

The Spark Accelerator Management Trainee Program selected four people for the first generation program. This project started in July 2020. For the second generation, 10 people were selected and the project would start in February 2023. The project lasts three years and six months, of which the first six months consist of the preparation of management trainees, and in which the program provides a mentor to take care of the employees who enter the program. In addition, there is a system to clearly report the results of operations to GPSC's senior executives. In addition, the Company has arranged for the employees to attend training courses on Leadership and Business online program to prepare and enhance the potential of the participants.

The Spark Accelerator Management Trainee Program is also the project used by the Company to actively retain high-potential employees with the organization. They play a key role in driving the Company's important strategy in line with its business growth plan.

4. Succession Planning

GPSC established a succession management strategy, prepared a succession plan for critical positions, and prepared potential executives to develop and inherit key positions from incumbent executives that will vacate those positions upon retirement or take up new positions arising from business expansion plan. The systematic succession plan for key positions and the key actions under the succession plan are:

1. Preparation of success profiles of critical positions.
2. Grouping of potential executives for key management positions.
3. Assessment of the competency of these executives through the assessment center, covering competency, interpersonal, business/management, and personal attributes.
4. Using the results of the assessment to determine individual development plans (IDPs).

In addition, to ensure that the Company has well prepared the leaders of the organization at various levels to support its growth, the success profiles and succession plans are prepared for mid-level executives. It designed and prepare career paths for all employees to aid them to participate in setting their own career progression goals to ensure shared success and sustainable progress between the employees and GPSC.

5. Knowledge Management

GPSC conducts a corporate knowledge management to develop its employees' knowledge and skills to ensure improved work efficiency, reduced risks, and operational excellence to support it to achieve goals under the vision and strategy by nurturing the ambience and creating a culture conducive to learning and exchange of knowledge. The Company aims for all employees to command the concept of lifelong learning, creating new knowledge and innovation, focusing on common learning among GPSC for the transfer and exchange of knowledge, experience and skills in parallel with receiving knowledge from the outside continually in order to further develop knowledge and creativity towards best practices by using technology to support convenient access to knowledge through the knowledge management portal system. The employees can create a body of knowledge, knowledge sharing, and study the knowledge from fellow employees to lead to further knowledge and innovation in the future.

6. Learning Management System (LMS)

GPSC relies on LMS, which administers learning activities for the Company. LMS houses online e-learning in various categories, totaling some 100 courses, including business, technology, and finance. Employees can access learning around the clock through the website and the iSPARK application. LMS has decreased training expenses as well as related expenses, including travel, food, venue, and accommodation. This year it trimmed expenses from estimated training expenditure by

about Baht 6.83 million for a total of 1,128 trainees (the entire workforce). LMS consists of:

1. Course management system, which consists of classroom learning and e-Learning. Users are of three levels: trainee, trainer, and system administrator. Access to the system can occur anywhere, anytime.
2. Content management, which consists of tools for creating contents, which work well with lessons in the form of text-based, VDO, and Infographics.
3. Test and evaluation system, which consists of test batteries and individual course evaluation
4. Course tools, which consist of assorted communication tools between the Company, trainee, and trainer, made possible by News Feed.
5. Data Management System and Training Record.

Performance Evaluation

In 2021, GPSC improved the performance management system (PMS) to ensure clear and systematic evaluation of employees' performance, which would drive the performance of the organization towards goals and continuous development. The Company adjusted the behavioral assessment in line with the core competency and ACT SPIRIT corporate values. The evaluation of the employees was divided into two aspects, namely behavioral evaluation and performance evaluation through the employees' KPIs. All employees must set individual indicators aligned with GPSC's strategy and goals. The assessment results would be used to plan for identifying suitable career development directions for the employees in the short and the long terms. It was also used as part of the consideration to adjust the remuneration and promotion in line with the corporate performance.

Key Projects

GPSC Academy Core Program

GPSC develops its employees through the "GPSC Academy", a center for employee development programs. In terms of core competency, it aims to develop employees at all levels. The Company

designs the curricula in collaboration with leading personnel development and leadership consultants, and organizes the development programs focusing on business management, people management, and teamwork by using a program entitled "Core Program". Under this program, there will be a special program for the employees in each group level, from the leading task development program, leading self-development program, leading people development program, to leading culture development program. The program ensures that employees are developed according to the appropriate level of potential at each group level. The design of each year's leadership development courses is based on the key business strategy and issues related to personnel stewardship, to be used to design the curriculum suitable for each year's situation.

Leadership Transformation Program

GPSC develops the group of leader employees to ensure that they understand their leadership roles as people managers, which will help them understand teams and support them efficiently, and enable the teams to see the overview of the organization's strategy that must be jointly driven to succeed. The Company also ensures that the employees are the leaders who understand the strategic direction of the organization under the ever-changing world in all aspects and can create targets that align with and support the goals of GPSC.

Labor treatment and labor rights

As for labor treatment and labor rights, GPSC Group abides by its personnel administration policy and aligns with the Labor Protection Act of 1998, which contains policies on hiring and fair dismissal. In addition, GPSC Group formed a welfare committee representing the three provinces it operates in, namely Rayong, Chon Buri, and Bangkok. The committee provides a negotiation channel for employees on welfare, work conditions, and other employee matters. Any GPSC Group employee is eligible to file for candidacy on the committee. In recruitment, the committee relies on representative election so that views may be

equitably expressed. Today there are 25 members on the committee, serving a two-year term. The committee formally discuss issues on labor treatment and labor rights with representatives of the employer every quarter of the year.

Diversity

GPSC accepts the culture of differences and diversity of each person, including gender, race, nationality, religion, political view, socio-economic status, age, domicile, disability, and physical disorder by recognizing that diversity in the organization will help the Company respond creatively to different needs of stakeholders and changing nature of business, resulting in sustainable benefit to the Company. Therefore, the Company specifies the qualifications for recruiting personnel and provides equality in human resource development to prepare all employees for career advancement. In 2022, the Company had 29.72% female executives.

Work safety

GPSC takes seriously employees' work safety and has declared related policies on the management of quality, security, safety, occupational health, and environment to ensure all employees' safety, namely

1. A policy on anti-narcotics and the drinking or consumption of alcoholic beverages of other substances that affect the nervous system
2. A policy on hearing conservation
3. Vision, corporate culture, and values on quality, security, safety, occupational health, and environment
4. Warning symbols about safety, occupational health, and work environment as well as messages about employer's and employee's rights and responsibility
5. A policy on 5S and maintenance of a good work environment
6. A policy on safe driving.

In addition, GPSC has appointed a work safety, occupational health, and work environment committee and appointed a work safety officer and a safety chief for every province and every sit

Employee Welfare

In addition to compensation in the form of salary and bonus, GPSC provides benefits to all employees in various forms that correspond to their needs:

1. Social Security Fund to provide security to those in the social security system to receive compensation benefits when experiencing mishaps, illness, disability, or death, which is not work-related, including maternity, child allowance, old age, and unemployment.
2. Provident Fund to provide security for employees and their families for those that voluntarily become members of the provident fund. GPSC will contribute to the provident fund, and employees will contribute to the fund as part of the savings, as set by the Company.
3. Medical coverage for employees and family members (father, mother, spouse, and children) according to the conditions set by the Company. The Company also provides annual health check-ups for employees.
4. Life insurance offers security to employees and their families.
5. Housing allowance for employees who work full time outside Bangkok, Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon and Nakhon Pathom, as specified by the Company.
6. Extra allowance for shift employees who work on odd days and hours from other employees as specified by the Company.
7. Additional allowance for employees on duty to support them on duty or on standby in the area or accommodation as specified by the Company.
8. Children's educational fund according to the levels and types of educational institutions as specified by the Company.

9. A service award is provided when employees' years of service reach certain periods as specified by the Company.
10. Optional welfare is the type of welfare that GPSC requires employees to express their intention to receive it or waive the right to do so but choose alternative welfare as specified by the Company.
11. Substitute welfare is the type of welfare that GPSC provides for employees who have waived their rights to optional welfare as specified by the Company.
12. Other allowances as specified by GPSC such as gym, phone bills, parking fees, and funeral assistance.
13. GPSC provides free transportation for employees working in Rayong and Chon Buri
14. GPSC provides other financial assistance, including gym contribution, phone subsidies, contribution to parking fees, and cremation contribution.

Enhancement of employee engagement

Since employee engagement is one of the driving forces of GPSC Group for achievement of its goals and a good corporate image, it requires an annual third-party survey on employee engagement. The findings are used to develop programs aiming at maintaining and promoting further engagement. Below is how it is done:

- Send out questionnaires
- Compile responses
- Present findings to executives
- Develop plans to maintain and promote further engagement.

GPSC focuses on enhancing employee engagement by relying on the ACT SPIRIT values to nurture the corporate culture, leveraging human resource systems and communication tools in addition to activities so that employees may learn, understand, and apply them to their work, thus breeding the desired work behavior. It also focuses on efficient internal communication

for mutual understanding among executives and employees and promoting satisfaction and employee engagement. This year the employee turnover rate was 5.76%, and the employee engagement score stood at 69%.

7.6 Other Key Information

7.6.1 List of officers responsible for the following key duties at GPSC:

Company Secretary

The Board of Directors' Meeting No. 7/2019 of July 26, 2019 appointed Miss Pallapa Achanon as the Company Secretary, with effect from August 1, 2019, with duties and responsibilities as follows:

- 1) Prepare and maintain the Company's documents such as the Director's Registrar, notices and minutes of the Board meetings, notices and minutes of the shareholders' meetings, and annual reports.
- 2) Maintain reports of conflicts of interest as submitted by directors or management.
- 3) Arrange Board meetings and shareholders' meetings.
- 4) Provide advice on the requirements and regulations that the Board and management should be aware of.
- 5) Organize training and orientations and provide information necessary for the performance of duties to current and newly appointed directors.
- 6) Supervise and coordinate to ensure that GPSC complies with laws, regulations, requirements, and resolutions of Board meetings and shareholders' meetings, as well as the corporate governance policies and business code of conduct completely and accurately.
- 7) Perform other tasks as specified by the Capital Market Supervisory Board.

In this regard, Miss Achanon possesses the following educational background and Company Secretary training as follows:

- Master of Business Administration (Finance), Kasetsart University
- Bachelor of Science (Business Administration), Kasetsart University
- Executive Program of Young Professionals (EYP), Class 1, Fiscal Policy Research Institute
- LDP1 Program, Class 2, PTT Leadership and Learning Institute, Executive Program
- SMP Program, Class 2, Fiscal Policy Research Institute
- Fundamentals for Corporate Secretaries, Thai Listed Companies Association
- Company Secretary Program (CSP), Class 99/2019, Thai Institute of Directors
- Director Accreditation Program (DAC), Class 163/2019, Thai Institute of Directors
- Board Reporting Program (BRP), Class 33/2020, Thai Institute of Directors
- Risk and Opportunity Management for Corporate Leaders, Thai Institute of Directors
- ASEAN CG Scorecard Coaching 2020, Thai Institute of Directors.

The profile and qualifications of the person holding the position of Company Secretary appear in Attachment 1.

Accounting Controller

GPSC has assigned Mr. Krittapong Tangsitthisilpa, Senior Vice President, Finance and Accounting Shared Service Center, to be directly responsible for supervising the accounting of the Company. His profile appears in Attachment 1.

Chief of Corporate Internal Audit

The Company assigned Miss Attayar Sukotanang, Senior Vice President, Corporate Internal Audit, to head Corporate Internal Audit. Her profile appears in Attachment 3.

Chief of Compliance

GPSC assigned Miss Pallapa Achanon, Senior Vice President, Company Secretary and Corporate Governance, to head Compliance and ensure corporate compliance with regulations applicable to the Company's businesses. Her profile appears in Attachment 1.

7.6.2 List of Chief Contacts for Investor Relations

Contact Information

1. Mrs. Sirobon Boontaworn

Vice President, Corporate Finance and Investor Relations

Phone: 0-2140-5354

Email: sirobon.b@gpscgroup.com

2. Mr. Pongsak Plai-ngam

Investor Relations Division Manager

Phone: 0-2140-4646

Email: pongsak.pl@gpscgroup.com

7.6.3 Audit and Other Fees

Audit Fees

GPSC Group paid a total of THB 8.06 million in audit fees in the past fiscal year to the external auditor: THB 0.94 million for its own audit and THB 7.11 million for subsidiaries' audits.

Other Fees

GPSC Group paid a total of THB 0.89 million in non-audit fees in the past fiscal year to the audit office where the external auditors belong for auditing GPSC Group's compliance with the terms and conditions of investment promotion certificates, review of financial ratios, counsel on accounting and tax. The group paid THB 3.43 million to auditors' related parties or businesses.

8 Key Corporate Governance Implementation

8.1 Performance of the Board of Directors in 2022

Corporate Governance and Code of Business Conduct

The Board of Directors has reviewed and improved the Corporate Governance and Code of Business Conduct Handbook (CG Handbook). The revision, which came into effect in 2020, provides guidelines for all employees to abide by in performing their duties and in conducting business to ensure that GPSC's operations are efficient and effective and that its management, characterized by development toward excellence, transparency, and accountability, will foster stakeholders' confidence in GPSC as a leading SET-listed company whose business is guided by governance toward sustainable growth.

Policies, Directions, Business Strategies, and Key Performance Indicators

- In 2022, the Board reviewed and defined the policies, directions, and business strategies of GPSC and its invested companies, as well as its vision, mission, and business goals.
- In 2022, the Board approved Key Performance Indicators (KPIs), both financial and non-financial, under the Balanced Scorecard. The indicators included Financial, Stakeholder (Customers' Satisfaction), Internal Process, and Learning & Growth Perspectives (Employee Engagement and Succession Planning).

8.1.1 Nomination, Development, and Performance Assessment of the Board

1) Independent Directors

As of December 31, 2022, out of the 13 directors on the Board, GPSC had a total of six independent directors, who are independent of the Company's management and major shareholders, in line with the SEC's criteria which stipulated that at least one third of the members of the Board, but no fewer than three, must be independent directors.

The Board has assigned the Nomination and Remuneration Committee to nominate directors, based on all shareholders' recommendations, and the Director's Pool of recognized organizations, which provides a list of qualified persons in different fields. This Committee considers the qualifications of each qualified candidate based on GPSC's definition of independent directors, considering those set forth in the notification of the Capital Market Supervisory Board, as detailed below.

1. Holds no more than 0.5% of the voting shares of GPSC, its parent company, subsidiary, associated company, major shareholder, or controlling person of GPSC, including the shares held by persons related to the independent director;
2. Is not or has never been an executive director, employee, worker, salaried consultant, or controlling person of GPSC, its parent company, subsidiary, associated company, sister company, major shareholder, or controlling person, unless such status has ceased for at least two years. However, the prohibited characteristics do not include cases where the independent director used to be a government official or an advisor in a government agency that is a major shareholder or controlling party of GPSC;
3. Is not related by blood or legally registered as the father, mother, spouse, sibling, and offspring, or spouse of the offspring of any other executive, major shareholder, controlling person, or any person who will be nominated as an executive, or controlling person of GPSC or its subsidiary;
4. Does not have or has never had any business relationship with GPSC, its parent company, subsidiary, associated company, major shareholder, or controlling person in a way that such relation may impede the person from exercising independent views, and should not be or has never been a key shareholder or controlling person for persons with business relations with GPSC, its parent company, subsidiary, associated company, major shareholder, or controlling person, unless such status has ceased for at least two years;

Such “business relationship” shall include conducting ordinary business transactions, offering or taking on leases of any immovable properties, conducting transactions relating to assets or services, or granting or accepting any financial support by way of offering or taking on loans, guarantees, asset-based collaterals, including any other similar action, which results in the Company or the counterparty being indebted to the other party in the amount of 3% or more of the net tangible assets of the Company or THB 20 million or more, whichever is lesser, based on the calculation of the related transaction value under the notification of the Capital Market Supervisory Board where the consideration of such indebtedness shall include any indebtedness taking place in one year before the commencement date of the business relationship with such person;

5. Is not or has never been an auditor of GPSC, its parent company, subsidiary, associated company, major shareholder, or controlling person, and should not be or has never been a key shareholder, a controlling person, or a partner of the current auditing firm of GPSC, or of its parent company, subsidiary, associated company, major shareholder, or controlling person, unless such status has ceased for at least two years;
6. Is not providing or has never provided professional services, legal consulting, nor financial consulting services with a fee more than THB 2 million per year from GPSC, its parent company, subsidiary, associated company, major shareholder, or controlling person, and should not be or has never been a key shareholder, controlling person, or partner of such professional services provider, unless such status has ceased for at least two years;
7. Is not a director appointed to represent GPSC, a major shareholder, or a shareholder connected to a major shareholder;
8. Is not operating under similar business nature and significant competition with GPSC or its subsidiaries, or not a significant partner of a partnership, executive director, worker, employee, or salaried consultant, or holding more than 1% of

voting shares of any other company operating under similar business nature and significant competition to GPSC or its subsidiaries; and

9. Is not under any conditions that may impede him or her from expressing independent views on GPSC's operations

GPSC's definition of independent directors is more stringent than that of the Capital Market Supervisory Board, such as the requirement that its independent directors must not hold more than 0.5% of the voting shares in GPSC, its parent company, subsidiary, associated company, major shareholder, or controlling person of GPSC, including the shares held by persons related to the independent director (this is 1% under the Capital Market Supervisory Board's definition), and has also limited the consecutive terms of office for independent directors to no more than nine years (or three consecutive terms).

2) Nomination of Directors and the Top Executives

The Board has appointed the Nomination and Remuneration Committee to select and nominate directors. In this process, the Committee takes into consideration recommendations from major shareholders and free float as well as Director's Pools of reliable organizations, which provides a list of qualified persons in different fields, before reviewing the qualifications of the candidates in the following aspects:

- Must be qualified and have none of the prohibited characteristics under the laws and the Public Company Limited Act, and possess no characteristics indicating a lack of appropriateness in respect of trustworthiness in managing business whose shares are held by public shareholders as specified by laws and in SEC's notifications.
- Must not be over 70 years of age.
- Must be knowledgeable, capable and possess diverse expertise, skills and work experience in line with GPSC's business strategies and “Director Skill Matrix”.
- Must be capable of devoting sufficient time to GPSC, in good health, capable of regularly

attending, contributing to and freely expressing opinions at Board meetings, and have a good reputation, good record of work performance and ethics, recognized by the society.

- Must command good leadership and be able to oversee performance of executives with efficiency and effectiveness.
- Must hold directorship in not more than four listed companies.

The diversity perspective is incorporated in the selection process which shall be free from discrimination on grounds of gender, race, nationality, religion, age, cultural background, or other differences.

Nomination of directors to replace those who complete their terms and retire at the upcoming AGM will be publicized on the Company website so that shareholders may propose qualified candidates for directorship in advance of the meeting. The Board considers their qualifications and propose qualified candidates at the AGM under GPSC's criteria.

Appointment of Directors

1) Appointment of Directors to Replace Directors Retiring by Rotation

The Nomination and Remuneration Committee shall select and nominate qualified candidates as defined by GPSC's nomination criteria to recommend to the Board for approval and to be subsequently proposed at the AGM for approval by a majority of votes of the total votes of shareholders attending the meeting. The candidates that win the next highest votes are also to be appointed to match the number of directorships up for appointment at the time.

- A shareholder shall have one vote for each share held.
- Shareholders shall vote for each individual candidate nominated for directorship
- In case the votes cast for candidates in descending order are tied, which would otherwise cause the number of directors to be exceeded, the chairman of the meeting shall cast the decisive vote.

2) Appointment of Directors to Fill Vacancies Incurred by Reasons Other Than Expiration of Term of Office

The Committee shall select and nominate qualified candidates as defined by GPSC's nomination criteria to recommend to the Board for appointment to fill vacancies. At least three-quarters (3/4) of the total votes of the remaining directors are required in the appointment of new directors, and newly appointed directors shall be in office for as long as the remaining term of office of their predecessors.

Termination of Directorship

1. At each AGM, one third (1/3) of the directors must retire from office by rotation. If the number is not a multiple of three, the number nearest to one third (1/3) of the total number of the directors must retire by rotation. A retiring director is eligible for re-election.
2. Apart from retirement upon expiry of the term of office, a director shall cease to hold office upon death, resignation, or having prohibited characteristic under the Public Company Limited Act, the Securities and Exchange Act, resolution of the shareholders' meetings or court order.
3. Any director who wishes to resign shall submit a resignation letter to GPSC. The resignation letter shall be effective from the date the letter reaches GPSC. A director who resigns may inform the registrar of his or her resignation.
4. Shareholders' meetings may reach a resolution removing any director from office before the expiration of the term of office, by a vote of no less than three-quarters (3/4) of the total voting shares from eligible shareholders attending the meeting, and the shares held by the voting shareholders shall, in aggregate, be no less than one-half of the number of shares held by the shareholders attending the meeting and eligible to vote.

Director Development

It is GPSC's policy to encourage its directors to continuously develop themselves to enhance their efficiency in fulfilling their duties. The training sessions attended by GPSC's directors were as follows.

Directors' Training with Thai Institute of Directors (IOD)

No.	Name - Last Name	DCP	DAP	RCP	ACP	AACP	RCL	RCC	Others
1.	Mr. Pailin Chuchottaworn	51/2004	24/2004						FND 14/2004 ACEP 4/2012
2.	Mr. Kurujit Nakornthap		64/2007		32/2010	43/2022		12/2011	R-CF 2/2013 C-Conference 1/2014 RFP 6/2022: Financial Reporting Cases: A Monitoring Guide for Board RFP 8/2022: Outbound Investment (Online)
3.	Gen. Santipong Thampiya		144/2018						BNCP 14/2022
4.	Mrs. Nicha Hiranburana Thuvatham		164/2019						
5.	Mr. Chalermphol Pensoot		196/2022						RFP 7/2022: Financial Reporting Cases: A Monitoring Guide for Board
6.	Mr. Somchai Meesen		161/2019			44/2022			RFP 6/2022: Financial Reporting Cases: A Monitoring Guide for Board FSD 45/2022
7.	Mr. Noppadol Pinsupa	146/2011							FSD 12/2011 Seminar Briefing on International Anti-Corruption International Cases and Practices
8.	Mr. Wuttikorn Stithit	158/2012							
9.	Mr. Kongkrapan Intarajang	119/2009		21/2009					
10.	Mr. Lavaron Sangsnit	205/2015							
11.	M.L. Peekthong Thongyai	15/2002							

No.	Name – Last Name	DCP	DAP	RCP	ACP	AACP	RCL	RCC	Others
12.	Miss Pannalin Mahawongtikul	279/2019				28/2022			SBM 9/2020 IOD National Director Conference 2019: “Board of the Future” IOD National Director Conference 2021: “Leadership Behind Closed Door”
13.	Mr. Worawat Pitayasiri	158/2012							

DCP : Director Certification Program

DAP : Director Accreditation Program

RCP : Role of the Chairman Program

ACP : Audit Committee Program

AACP : Advanced Audit Committee Program

ACEP : Anti-corruption for Executive Program

R-CF : R-CF-Chairman Forum

FGP : Financial Institutions Governance Program

ITG : IT Governance and Cyber Resilience Program

RFP : Refreshment Training Program

SBM : Strategic Board Master Class

RCL : Risk Management Program for Corporate Leaders

RCC : Role of Compensation Committee

FSD : Financial Statements for Directors

FND : Finance for Non-Finance Director

C-Conference : Collective Action Against Corruption Conference

DCPU : Director Certification Program Update

ELP : Ethical Leadership Program

BMD : Boards that make a difference

HRP : How to Develop a Risk Management Plan

BNCP : Board Nomination & Compensation Program

Additional Directors' Training in 2022

In 2022, the directors received additional training as follows:

- Mr. Kurujit Nakornthap attended the training organized by the Thai Institute of Directors (IOD) as follows:
 - Advanced Audit Committee Program (AACP) class 43/2022
 - Refreshment Training Program (RFP) class 6/2022 on the topic Financial Reporting Cases: A Monitoring Guide for Board
 - Refreshment Training Program (RFP) class 8/2022 on the topic Outbound Investment (Online)
- Gen. Santipong Thampiya attended the Board Nomination & Compensation Program (BNCP) class 14/2022 organized by the Thai Institute of Directors (IOD)

- Mr. Chalermphol Pensoot attended the Director Accreditation Program (DAP) class 196/2022 and the Refreshment Training Program (RFP) class 6/2022 on Financial Reporting Cases: A Monitoring Guide for Board organized by the Thai Institute of Directors (IOD)
- Mr. Somchai Meesen attended the training organized by the Thai Institute of Directors (IOD) as follows:
 - Advanced Audit Committee Program (AACP) class 44/2022
 - Refreshment Training Program (RFP) class 6/2022 on the topic Financial Reporting Cases: A Monitoring Guide for Board
 - Financial Statements for Directors (FSD) class 45/2022
- Miss Pannalin Mahawongtikul attended the Risk Management Program for Corporate Leaders (RCL) class 28/2022 organized by the Thai Institute of Directors (IOD).

Orientation of New Directors

GPSC organized an orientation for new directors before their first Board meeting to inform them of its business policies and applicable information such as the nature of the business, business strategies, organizational structure, shareholding structure, operating results, corporate governance, and code of business conduct, as well as laws and regulations beneficial to their roles as directors.

In 2022, four directors attended the Orientation of New Directors of the Company as follows:

- 1) Gen. Santipong Thampiya
- 2) Mr. Chalermphol Pensoot
- 3) M.L. Peekthong Thongyai
- 4) Miss Pannalin Mahawongtikul.

Performance Assessment of the Board and the Sub-committees of 2022

Assessment Process and Criteria

In 2022, GPSC conducted the performance assessment of the Board covering three assessment forms: Board Assessment Form (entire Board), Individual Director Assessment Forms (self-assessment and cross-assessment), and Sub-committee Assessment Forms (entire committee) for the four sub-committees.

Assessment scales: the percentages represent the assessment results as follows:

Over 85%	= Practice regularly / Excellent / Most Appropriate
Over 75%	= Practice most of the time / Very Good / Very Appropriate
Over 65%	= Practice sometimes / Good / Appropriate
Over 50%	= Rarely practice / Satisfactory
Below 50%	= Never practice / Poor / Need Improvement

Assessment Results of the Board and the Sub-committees:

1. The Board Assessment (entire Board) comprises seven topics:

- 1) Composition and qualifications of the Board
- 2) Monitoring of the Company's strategies and performance
- 3) Results of the Company's performance and succession plans for senior executives
- 4) Monitoring of the management and risk management
- 5) Environment, society and good governance
- 6) Meeting of the Board, and
- 7) Self-development of the Board.

► **Assessment result: "Excellent" (95.41%)**

2. Individual Director Assessment (self-assessment and cross-assessment) comprises five topics:

- 1) Accountability in decision-making and one's own actions on reasonable ground
- 2) Responsibility to perform duties to the full extent of ability and effectiveness
- 3) Uphold business ethics and the code of conduct in performing duties
- 4) Vision to create long-term value
- 5) Knowledge and capability.

► **Assessment result (self -assessment): "Excellent" (96.26%)**

► **Assessment result (cross-assessment): "Excellent" (97.35%)**

3. Sub-committee Assessment (entire committee) for the four Sub-committees comprises five topics:

- 1) Composition of the Sub-committees
- 2) Meeting of the Sub-committees
- 3) Satisfaction with the efficiency in performing duties of the Sub-committees
- 4) Roles, duties, and responsibilities of the committees

- 5) Relations with the internal auditor, external auditor, and the management (Audit Committee only).

▶ **Assessment result (Audit Committee): “Excellent” (96.67%)**

▶ **Assessment result (Nomination and Remuneration Committee): “Excellent” (96.11%)**

▶ **Assessment result (Corporate Governance Committee): “Excellent” (98.70%)**

▶ **Assessment result (Risk Management Committee): “Excellent” (97.08%)**

Rights of Minority Shareholders for Nominating Directors

One or more shareholders holding at least 1% of the total voting shares can propose meeting agenda item and nominate directors from October 1, 2020 to December 31, 2021 (at least three months before the 2022 AGM). Consideration criteria and process were disclosed on the Company’s website about the rights and equitable treatment of shareholders.

Nomination Criterion for the Chief Executive Officer (CEO)

Nomination and Appointment of the President and CEO

If the position of President and CEO becomes vacant, the Nomination and Remuneration Committee is required to review candidates with qualifications under applicable criteria and laws as well as other appropriate qualifications, such as knowledge, competency, experience, leadership, and breadth of vision, and nominate such candidates to the Board Meeting to be approved for appointment.

Performance Assessment and Remuneration Policy of the President and CEO

In 2022, the Board conducted performance assessment of the President and CEO, against criteria consisting of performance in relation to the KPIs, which included annual performance (short-term), and performance in pursuing the Company’s strategies in the long term to achieve sustainable growth which required managerial ability and leadership to contribute to the Company’s long-term sustainability. The Board, with a careful review by the Nomination and Remuneration Committee, conducted performance assessment and determined the remuneration of the President and CEO using such criteria in tandem with the self-assessment of the President and CEO.

Succession Plan and Management

GPSC has devised a succession planning system for key positions under which a list of individuals with potential for executive positions is compiled before they are assessed for their capacity as executives on competency and personal attributes. Subsequently, the assessment results are used to create Individual Development Plan (IDP) to prepare these individuals for succession, either by taking office left vacant by retirement or filling new positions created with future expansion of the business. The progress in succession planning is constantly being reported to management. In 2022, 45 executives were assessed and provided with IDPs, and more executives will be assessed soon.

8.1.2 Board Meeting Attendance

Under the corporate governance code, the Board designates dates of meetings in advance each year to enable the directors to allocate their time for the meetings. The Board may call special meetings to consider urgent matters if required. Directors who have unexpected engagement or urgent matters and are unable to attend a meeting must submit a leave of absence letter to the Chairman. Meeting notices and support documents are delivered to directors at least seven days before each meeting to give them adequate time to review the agenda before the meeting, except for urgent matters that require the calling of urgent meetings. If more information is needed, directors can request the Company Secretary to respond to queries in advance.

In addition, the Board values appropriate handling of conflicts of interest, and directors who have any conflict of interest with each agenda must not take part in the decision-making process of such agenda.

After the meeting, the minutes of the meeting are prepared for the Board's endorsement at the next meeting. The Chairman countersigns to endorse the minutes, which are systematically kept for further use.

In 2022, GPSC held a total of 16 Board Meetings: 12 ordinary meetings and 4 special ones, one Non-Executive Directors' Meeting, and one Independent Directors' Meeting. More importantly, GPSC has set up Protocols for Meetings of the Board to obtain a clear procedure, embracing meeting management processes to ensure their efficiency.



Meeting Attendance of GPSC Directors in 2022

Name - Last Name	Position	Board	Board (Special Meeting)	Audit Committee (AC)	Nomination and Remuneration Committee (NRC)	Corporate Governance and Sustainability Committee (CGSC)	Risk Management Committee (RMC)	Non-Executive Directors	Independent Director	Shareholders Meeting
		12 Meetings	4 Meetings	6 Meetings	3 Meetings	4 Meetings	9 Meetings	1 Meeting	1 Meeting	1 Meeting
1. Mr. Pailin Chuchothaworn	Independent Director/ Chairman of the Board of Directors	12/12	4/4	-	-	-	-	1/1	1/1	1/1
2. Mr. Kurujit Nakornthap	Independent Director/ Chairman of the Corporate Governance and Sustainability Committee/ Member of the Audit Committee	12/12	4/4	6/6	-	4/4	-	1/1	1/1	1/1
3. Gen. Santipong Thampiya ⁽¹⁾	Independent Director/ Chairman of the Nomination and Remuneration Committee	9/9	2/4 ⁽²⁾	-	1/1	-	-	1/1	1/1	N/A
4. Mrs. Nicha Hiranburana Thuvatham	Independent Director/ Member of the Corporate Governance and Sustainability Committee	12/12	4/4	-	-	4/4	-	1/1	1/1	1/1
5. Mr. Chalermphol Pensoot ⁽³⁾	Independent Director/ Chairman of the Audit Committee	9/9	3/4 ⁽⁴⁾	4/5 ⁽⁵⁾	-	-	-	1/1	1/1	N/A
6. Mr. Somchai Meesen ⁽⁶⁾	Independent Director/ Member of the Corporate Governance and Sustainability Committee/ Member of the Audit Committee	12/12	4/4	5/5	-	4/4	-	1/1	1/1	1/1

Name - Last Name	Position	Board	Board (Special Meeting)	Audit Committee (AC)	Nomination and Remuneration Committee (NRC)	Corporate Governance and Sustainability Committee (CGSC)	Risk Management Committee (RMC)	Non- Executive Directors	Independent Director	Shareholders Meeting
		12 Meetings	4 Meetings	6 Meetings	3 Meetings	4 Meetings	9 Meetings	1 Meeting	1 Meeting	1 Meeting
7. Mr. Noppadol Pinsupa ⁽⁷⁾	Director/ Chairman of the Risk Management Committee/ Member of the Nomination and Remuneration Committee	12/12	4/4	-	3/3	-	9/9	1/1	-	1/1
8. Mr. Wuttikom Stithit ⁽⁸⁾	Director	12/12	4/4	-	-	-	-	1/1	-	1/1
9. Mr. Kongkrapan Intarajang ⁽⁹⁾	Director/ Member of the Risk Management Committee	12/12	4/4	-	-	-	9/9	1/1	-	1/1
10. Mr. Lavaron Sangsnit	Director Member of the Corporate Governance and Sustainability Committee	11/12 ⁽¹⁰⁾	4/4	-	-	4/4	-	1/1	-	1/1
11. M.L. Peekthong Thongyai ⁽¹¹⁾	Director	1/1	N/A	-	-	-	-	N/A	-	N/A
12. Miss Pannalin Mahawongtikul ⁽¹²⁾	Director	1/1	N/A	-	-	-	-	N/A	-	N/A
13. Mr. Worawat Pitayasiri	Director/ Secretary to the Board/ Member of the Risk Management Committee/ President & Chief Executive Officer	12/12	4/4	-	-	-	9/9	-	-	1/1
14. Maj. Gen. Chaowalek Chayansupap ⁽¹³⁾	Independent Director/ Chairman of the Nomination and Remuneration Committee/ Member of the Audit Committee	3/3	N/A	1/1	2/2	-	-	N/A	N/A	1/1

Name - Last Name	Position	Board	Board (Special Meeting)	Audit Committee (AC)	Nomination and Remuneration Committee (NRC)	Corporate Governance and Sustainability Committee (CGSC)	Risk Management Committee (RMC)	Non-Executive Directors	Independent Director	Shareholders Meeting
		12 Meetings	4 Meetings	6 Meetings	3 Meetings	4 Meetings	9 Meetings	1 Meeting	1 Meeting	1 Meeting
15. Mrs. Saowanee Kamolbutr ⁽¹⁴⁾	Independent Director/ Chairman of the Audit Committee	3/3	-	1/1	-	-	-	N/A	N/A	1/1
16. Me. Jeerawat Pattanasomsit ⁽¹⁵⁾	Director	6/6	2/2	-	-	-	-	N/A	-	1/1
17. Mr. Atikom Terbsin ⁽¹⁶⁾	Director/ Member of the Nomination and Remuneration Committee	9/9	3/3	-	2/2	-	-	1/1	-	1/1
18. Mr. Wirat Uanarumit ⁽¹⁷⁾	Director/ Member of the Risk Management Committee	8/9 ⁽¹⁸⁾	2/3 ⁽¹⁹⁾	-	-	-	6/6	1/1	-	1/1
19. Mr. Pakorn Apaphant ⁽²⁰⁾	Independent Director/ Member of the Risk Management Committee	12/12	1/4 ⁽²¹⁾	-	-	-	8/9 ⁽²²⁾	0/1 ⁽²³⁾	1/1	1/1

Remarks:

N/A: Not attended; either the Director resigned or was appointed during 2022.

- ⁽¹⁾ Gen. Santipong Thampiya was appointed as an independent director replacing Maj. Gen. Chaowalek Chayansupap, who completed his term at the 2022 AGM on April 1, 2022, with effect from April 1, 2022 and was appointed as the Chairman of the Nomination and Remuneration Committee at Board Meeting No. 4/2022 (Special meeting) on April 1, 2022, with effect from April 1, 2022.
- ⁽²⁾ Gen. Santipong Thampiya was unable to attend Board Meeting No. 7/2022 (Special meeting) of May 28, 2022 and No. 13/2022 (Special meeting) of October 10, 2022 due to prior engagement.
- ⁽³⁾ Mr. Chalermphol Pensoot was appointed as an independent director replacing Mrs. Saowanee Kamolbutr, who completed her term at the 2022 AGM on April 1, 2022, with effect from April 1, 2022, and was appointed as the Chairman of the Audit Committee at Board Meeting No. 4/2022 (Special meeting) on April 1, 2022, with effect from April 1, 2022.
- ⁽⁴⁾ Mr. Chalermphol Pensoot was unable to attend Board Meeting No. 10/2022 (Special meeting) of August 5, 2022 due to prior engagement.
- ⁽⁵⁾ Mr. Chalermphol Pensoot was unable to attend Board Meeting No. 5/2022 of December 9, 2022 due to prior engagement.
- ⁽⁶⁾ Mr. Somchai Meesen was appointed as a member of the Audit Committee at Board Meeting No. 4/2565 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁷⁾ Mr. Noppadol Pinsupa was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022, and was re-appointed as a member of the Nomination and Remuneration Committee and as Chairman of the Risk Management Committee at Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁸⁾ Mr. Wuttikorn Stithit was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022.
- ⁽⁹⁾ Mr. Kongkrapan Intarajan was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022, and re-appointed as member of the Audit Committee at Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽¹⁰⁾ Mr. Lavaron Sangsnit was unable to attend Board Meeting No. 8/2022 of June 28, 2022 due to prior engagement.
- ⁽¹¹⁾ M.L. Peekthong Thongyai was appointed as director replacing Mr. Atikom Terbsiri, who resigned at Board Meeting No. 15/2022 of November 22, 2022, with effect from December 1, 2022.
- ⁽¹²⁾ Miss Pannalin Mahawongtikul was appointed as a director replacing Mr. Wirat Uanarumit, who resigned at Board Meeting No. 15/2022 of November 22, 2022, with effect from December 1, 2022.
- ⁽¹³⁾ Maj. Gen. Chaowalek Chayansupap completed his term at the 2022 AGM on April 1, 2022.
- ⁽¹⁴⁾ Mrs. Saowanee Kamolbutr completed her term at the 2022 AGM of April 1, 2022.
- ⁽¹⁵⁾ Mr. Jeerawat Pattanasomsit resigned as a director, with effect from July 1, 2022.
- ⁽¹⁶⁾ Mr. Atikom Terbsiri resigned as a director/member of the Nomination and Remuneration Committee, with effect from September 30, 2022.
- ⁽¹⁷⁾ Mr. Wirat Uanarumit resigned as a director/member of the Risk Management Committee, with effect from September 30, 2022.
- ⁽¹⁸⁾ Mr. Wirat Uanarumit was unable to attend Board Meeting No. 6/2022 of May 24, 2022 due to prior engagement.
- ⁽¹⁹⁾ Mr. Wirat Uanarumit was unable to attend Board Meeting No. 7/2022 (Special meeting) of May 28, 2022 due to prior engagement.
- ⁽²⁰⁾ Mr. Pakorn Apaphant resigned as a director/member of the Risk Management Committee, with effect from December 26, 2022.
- ⁽²¹⁾ Mr. Pakorn Apaphant was unable to attend Board Meetings No. 4/2022 (Special meeting) of April 1, 2022, No. 10/2022 (Special meeting) of August 5, 2022, and No. 13/2022 (Special meeting) of October 10, 2022 due to prior engagement.
- ⁽²²⁾ Mr. Pakorn Apaphant was unable to attend the Risk Management Committee Meeting No. 6/2022 of August 19, 2022 due to prior engagement.
- ⁽²³⁾ Mr. Pakorn Apaphant was unable to attend the 2022 Non-Executive Directors' Meeting of August 23, 2022 due to prior engagement.

Director Remuneration

In 2022, the Board, at the recommendation of the Nomination and Remuneration Committee, considered the remuneration of the Board and the Sub-committees, taking into account various factors, including the Company's operating results, dividend payouts to shareholders, the Board's performance, responsibility of the Board and the Sub-committees, and comparison with peer listed companies with similar sizes. The following remuneration scheme for the Board was proposed to and subsequently approved at the 2022 AGM.

1. Remuneration fees for Directors

1.1 Monthly remuneration

- Chairman 65,000 THB/month
- Directors 45,000 THB/month

1.2 Meeting allowance (only for those in attendance)

- Chairman 25,000 THB/meeting, for no more than 15 meetings per year
- Directors 20,000 THB/meeting, for no more than 15 meetings per year

2. Meeting allowance for Sub-committees

Meeting allowance for Sub-committees, namely the Audit Committee, Nomination and Remuneration Committee, Corporate Governance and Sustainability Committee, and Risk Management Committee (only for those in attendance)

- Chairman 37,500 THB/meeting; for no more than 15 meetings per year
- Directors 30,000 THB/meeting; for no more than 15 meetings per year

3. Annual Bonus

The 2022 AGM approved annual bonuses for the directors, including those who completed their terms and/or retired during 2021, at the rate of 0.5 percent of the 2021 net profit and up to THB 40 million. The bonus portion was based on the term of each director. The Chairman of the Board would receive 25 percent higher than other directors.

4. Other Remuneration

-None-



Remuneration of GPSC's Directors in 2022

(Unit: Baht)

Name - Last Name	Position	Board		Audit Committee		Nomination and Remuneration Committee		Corporate Governance and Sustainability Committee		Risk Management Committee		Bonus for 2021 ⁽¹⁾	Total
		Retention Fee	Meeting Allowance	Meeting Allowance	Meeting Allowance	Meeting Allowance	Meeting Allowance	Meeting Allowance	Meeting Allowance	Meeting Allowance	Meeting Allowance		
1. Mr. Pailin Chuchothaworn	Independent Director/ Chairman	780,000.00	375,000.00	-	-	-	-	-	-	-	-	3,050,383.02	4,205,383.02
2. Mr. Kurujit Nakornthap	Independent Director/ Chairman of the Corporate Governance and Sustainability Committee/ Member of the Audit Committee	540,000.00	300,000.00	210,000.00	-	-	-	150,000.00	-	-	-	2,440,306.42	3,640,306.42
3. Gen. Santipong Thampiya ⁽²⁾	Independent Director/ Chairman of the Nomination and Remuneration Committee	405,000.00	200,000.00	-	37,500.00	-	-	-	-	-	-	-	642,500.00
4. Mrs. Nicha Hiranburana Thuvatham	Independent Director/ Member of the Corporate Governance and Sustainability Committee	540,000.00	300,000.00	-	-	-	-	120,000.00	-	-	-	2,440,306.42	3,400,306.42
5. Mr. Chalempol Pensoot ⁽³⁾	Independent Director/ Chairman of the Audit Committee	405,000.00	220,000.00	150,000.00	-	-	-	-	-	-	-	-	775,000.00
6. Mr. Somchai Meesen ⁽⁴⁾	Independent Director/ Member of the Corporate Governance and Sustainability Committee/ Member of the Audit Committee	540,000.00	300,000.00	150,000.00	-	-	-	120,000.00	-	-	-	2,440,306.42	3,550,306.42

Name - Last Name	Position	Board		Audit Committee	Nomination and Remuneration Committee	Corporate Governance and Sustainability Committee	Risk Management Committee	Bonus for 2021 ⁽¹⁾	Total
		Retention Fee	Meeting Allowance						
7. Mr. Noppadol Pinsupa ⁽⁵⁾	Director/ Chairman of the Risk Management Committee/ Member of the Nomination and Remuneration Committee	540,000.00	300,000.00	-	90,000.00	-	337,500.00	407,832.03	1,675,332.03
8. Mr. Wuttikorn Stithit ⁽⁶⁾	Director	540,000.00	300,000.00	-	-	-	-	2,440,306.42	3,280,306.42
9. Mr. Kongkrapan Intarajang ⁽⁷⁾	Director/Member of the Risk Management Committee	540,000.00	300,000.00	-	-	-	270,000.00	2,440,306.42	3,550,306.42
10. Mr. Lavaron Sangsrit	Director/ Member of the Corporate Governance and Sustainability Committee	540,000.00	280,000.00	-	-	120,000.00	-	815,664.06	1,755,664.06
11. M.L. Peekthong Thongyai ⁽⁸⁾	Director	45,000.00	-	-	-	-	-	-	45,000.00
12. Miss Parnalin Mahawongtikul ⁽⁹⁾	Director	45,000.00	-	-	-	-	-	-	45,000.00
13. Mr. Worawat Pitayasiri	Director/ Secretary to the Board/ Member of the Risk Management Committee, President & Chief Executive Officer	540,000.00	300,000.00	-	-	-	270,000.00	2,440,306.42	3,550,306.42
Directors retired / resigned in 2022									
14. Maj.Gen. Chaowalek Chayansupap ⁽¹⁰⁾	Independent Director/ Chairman of the Nomination and Remuneration Committee/ Member of the Audit Committee	135,000.00	60,000.00	60,000.00	75,000.00	-	-	2,440,306.42	2,770,306.42
15. Mrs. Saowanee Kamolbut ⁽¹¹⁾	Independent Director/ Chairman of the Audit Committee	135,000.00	60,000.00	75,000.00	-	-	-	2,440,306.42	2,710,306.42

Name - Last Name	Position	Board		Board	Audit Committee	Nomination and Remuneration Committee	Corporate Governance and Sustainability Committee	Risk Management Committee	Bonus for 2021 ⁽¹⁾		Total
		Retention Fee	Meeting Allowance								
16. Mr. Jeerawat Pattanasomsit ⁽¹²⁾	Director	270,000.00	160,000.00	-	-	-	-	-	407,832.03	-	837,832.03
17. Mr. Atikom Terbsiri ⁽¹³⁾	Director/ Member of the Nomination and Remuneration Committee	403,500.00	240,000.00	-	-	60,000.00	-	-	2,440,306.42	-	3,143,806.42
18. Mr. Wirat Unarumit ⁽¹⁴⁾	Director/ Member of the Risk Management Committee	403,500.00	200,000.00	-	-	-	-	180,000.00	2,440,306.42	-	3,223,806.42
19. Mr. Pakom Apaphant ⁽¹⁵⁾	Independent Director/ Member of the Risk Management Committee	540,000.00	240,000.00	-	-	-	-	240,000.00	1,831,901.25	-	2,851,901.25
Directors retired/resigned in 2021 (bonus for the 2021 performance)											
20. Mr. Payungsak Chartsutipo ⁽¹⁶⁾	Independent Director/ Chairman of the Risk Management Committee/ Chairman of the Nomination and Remuneration Committee	-	-	-	-	-	-	-	608,405.16	-	608,405.16
21. Mr. Bandhit Thamprajamchit ⁽¹⁷⁾	Director/ Member of the Corporate Governance Committee	-	-	-	-	-	-	-	608,405.16	-	608,405.16
22. Mr. Todsaporn Boonyapipat ⁽¹⁸⁾	Director	-	-	-	-	-	-	-	1,417,383.45	-	1,417,383.45
23. Mr. Wittawat Svasti-Xuto ⁽¹⁹⁾	Director/ Chairman of the Risk Management Committee/ Member of the Nomination and Remuneration Committee	-	-	-	-	-	-	-	1,825,215.48	-	1,825,215.48
24. Mr. Pongpun Amornvivat ⁽²⁰⁾	Director/ Member of the Corporate Governance Committee	-	-	-	-	-	-	-	1,216,810.32	-	1,216,810.32
Total		7,887,000.00	4,135,000.00	645,000.00	262,500.00	510,000.00	1,297,500.00	36,592,896.14	51,329,896.14		

Remarks:

- ⁽¹⁾ Bonus for 2021 performance approved at the 2022 AGM was paid to directors on April 25, 2022
- ⁽²⁾ Gen. Santipong Thampiya was appointed as an independent director replacing Maj. Gen. Chaowalek Chayansupap, who completed his term at the 2022 AGM of April 1, 2022, with effect from April 1, 2022 and was appointed as Chairman of the Nomination and Remuneration Committee at Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽³⁾ Mr. Chalermphol Pensoot was appointed as an independent director replacing Mrs. Saowanee Kamolbutr, who completed her term at the 2022 AGM of April 1, 2022, with effect from April 1, 2022 and was appointed as Chairman of the Audit Committee at Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁴⁾ Mr. Somchai Meesen was appointed as a member of the Audit Committee at Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁵⁾ Mr. Noppadol Pinsupa was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022 and was re-appointed as a member of the Nomination and Remuneration Committee and Chairman of the Risk Management Committee at Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁶⁾ Mr. Wuttikorn Stithit was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022.
- ⁽⁷⁾ Mr. Kongkrapan Intarajan was re-appointed as a director at the 2022 AGM of April 1, 2022, with effect from April 1, 2022 and was re-appointed as a member of the Risk Management Committee at Board Meeting No. 4/2022 (Special meeting) of April 1, 2022, with effect from April 1, 2022.
- ⁽⁸⁾ M.L. Peekthong Thongyai was appointed as a director replacing Mr. Atikom Terbsiri, who resigned at Board Meeting No. 15/2022 of November 22, 2022, with effect from December 1, 2022.
- ⁽⁹⁾ Miss Pannalin Mahawongtikul was appointed as a director replacing Mr. Wirat Uanarumit, who resigned at Board Meeting No. 15/2022 of November 22, 2022, with effect from December 1, 2022.
- ⁽¹⁰⁾ Maj. Gen. Chaowalek Chayansupap completed his term at the 2022 AGM of April 1, 2022.
- ⁽¹¹⁾ Mrs. Saowanee Kamolbutr completed her term at the 2022 AGM of April 1, 2022.
- ⁽¹²⁾ Mr. Jeerawat Pattanasomsit resigned as a director, with effect from July 1, 2022.
- ⁽¹³⁾ Mr. Atikom Terbsiri resigned as a director/ member of the Nomination and Remuneration Committee, with effect from September 30, 2022.
- ⁽¹⁴⁾ Mr. Wirat Uanarumit resigned as a director / member of the Risk Management Committee, with effect from September 30, 2022.
- ⁽¹⁵⁾ Mr. Pakorn Apaphant resigned as a director/ member of the Risk Management Committee, with effect from December 26, 2022.
- ⁽¹⁶⁾ Mr. Payungsak Chartsutipol completed his term at the 2021 AGM of April 2, 2021.
- ⁽¹⁷⁾ Mr. Bandhit Thamprijamchit completed his term at the 2021 AGM of April 2, 2021.
- ⁽¹⁸⁾ Mr. Todsaporn Boonyapipat resigned as a director, with effect from August 1, 2021
- ⁽¹⁹⁾ Mr. Wittawat Svasti-Xuto resigned as a director/Chairman of the Risk Management Committee/member of the Nomination and Remuneration Committee, with effect from October 1, 2021
- ⁽²⁰⁾ Mr. Pongpun Amornvivat resigned as a director/member of the Corporate Governance Committee, with effect from October 1, 2021

Remuneration of GPSC's Independent Directors Seconded to GPSC's Parent Company, Subsidiaries, or Sister Companies, as of December 31, 2022

(Unit: Baht)

Name – Last Name	Name of Company	Position	Term Duration in 2022	Remuneration (THB)
1. Mr. Pailin Chuchottaworn	Thai Oil Plc	Independent Director	January 1, 2022 - December 31, 2022	3,204,758.08
Total				3,204,758.08

8.1.3 Governance of Affiliates

GPSC, valuing policy and operations of its affiliates (subsidiaries, associates, and related companies) and in ensuring their efficient operations and sustainable growth, has established a “GPSC Group Way of Conduct” as an administrative mechanism for GPSC Group. This is a collection of guidelines and processes in GPSC and GPSC Group to align all practices and create a standard for the connection and coordination in business of all GPSC companies to attain investment targets.

The GPSC Group Way of Conduct comprises five governance practices:

1. Key Strategic Positions

GPSC has a long-standing practice of seconding executives and employees to key strategic positions in its affiliates under agreed commitment or business conditions. It has defined “Criteria for Recruitment and Appointment of Directors of Invested Companies” for its selection of directors and executives of subsidiary companies and associates. The number of directors in subsidiary companies and associates depends on GPSC’s equity or as agreed.

The responsibility of GPSC’s representatives is to provide due diligence for subsidiaries, associates, and related companies and ensure strict adherence to operational and management requirements, as well as best practices in line with the policy framework and business strategic directions of the Company, including policies on corporate governance, legal compliance, accounting and finance, quality management, safety, health, and environment (QSHE), human resource management, as well as other key policies. In addition, GPSC has defined clear operational indicators to ensure that the operation of the management of GPSC Group is effectively and efficiently driven.

2. Rules and Regulations

The Company requires that rules, regulations, requirements, policies, as well as orders are part of the governance principles to generate linkage and coordination under GPSC’s governance policies and successful application of these policies. The various rules, regulations, requirements, and policies, as well as orders are what GPSC representatives will be using in their service as directors, top executives, executives, or operators in affiliates and are required to follow and establish as uniform standards in GPSC Group.

3. Reporting Line and Performance Management

GPSC requires that a performance report and operational outcomes of GPSC Group management be submitted to GPSC’s management and/or Company’s directors under the following guidelines:

- Monitor and provide recommendations for all operations of each subsidiary, associate, and related company to ensure compliance with various contracts and applicable rules and regulations.
- Constantly follow up on performance outcomes of each subsidiary, associate, and related company as well as providing recommendations to ensure that each performance is achieved on target and that each can manage obstacles in a timely and appropriate manner.
- Consider, monitor, and provide recommendations for each subsidiary, associate, and related company to feature appropriate disclosure of information and internal control as well as a system to sustain business operations effectively and efficiently.
- Consider, monitor, and provide recommendations for regular review and improvement of key policies and plans of each subsidiary, associate, and related company to ensure updated and appropriate business operations.

4. Multi-level Governance

To unify the management of GPSC Group and ensure that procedures are clear and connected, the Company has designed a multi-level governance system by

direct knowledge transfer of the GPSC Group Way of Conduct to a daughter company with the authority to conduct due diligence through GPSC executives serving as the top executive of a given affiliate. This company must establish a group management system of its own to cascade the GPSC Group management approach down to each next company that they hold shares in. The transfer must be made to a company with the capacity of governance and must comprise governance principles and a strategic alignment policy to provide a unified standard throughout GPSC Group.

5. Management Committee

GSPC has appointed a GSPC Group Management Committee to help formulate systematic and standardized guidelines, operational practices, and work procedures as a model for each affiliate in GSPC Group to practice and apply in their operations and in driving the GSPC Group Management for efficiency and effectiveness.

The Company must also define plans and implement them to ensure that each subsidiary, associate, and related company disclose their performance data and financial status, including other data that must be made available to regulators, applicable state organizations and outside investors, including the public, accurately, completely, and credibly. If it is necessary for the affiliate to have related transactions or engage in potential conflicts of interest, it must monitor the affiliate's action to make sure that the transaction is made with transparency and fairness. The Company must strictly comply with the criteria of related transactions as well as acquisition and sale of assets as stated by regulators.

8.1.4 Monitoring of Compliance with Corporate Governance Policy and Guidelines

1) Prevention of Conflicts of Interest

GPSC's directors, executives, and employees must produce disclosure reports that may result in possible conflicts of interest of themselves or their

related persons with the Company (annual report), new employees (first report), every time a conflict is encountered (incident report) by using the designated "GPSC Conflict of Interest Disclosure Form" and notify their supervisor to sign his/her name for acknowledgment and then send the "GPSC Conflict of Interest Disclosure Form" to Compliance.

Compliance will then compile the information and summarize connected transactions of potential conflicts of interest to the Management Committee for acknowledgment and management to prevent such actions by related parties, and report to the Corporate Governance Committee for acknowledgment yearly.

In 2022, GPSC compiled and analyzed the annual report, the first report, and the incident report and found no statistics on the wrongdoing of connected transactions.

Moreover, GPSC ensured knowledge transfer to executives and employees through the E-learning system on prevention of conflicts of interest under the "GPSC's code of business conduct and anti-fraud and anti corruption policy" course.

2) Supervision of the Abuse of Inside Information

GPSC has developed a policy on the protection against abuse of inside information in compliance with laws and the corporate governance code, which has been disseminated among GPSC's directors, executives, and employees. The policy and measures against abuse of inside information for unlawful gain are described as follows:

Policy on the Protection against Abuse of Inside Information

- 1) GPSC's directors and executives have been informed of their duties to submit reports of change in securities holding of themselves, their spouses, and their minor children to the Securities and Exchange Commission (SEC), a duty as stipulated in the Securities and Exchange Act B.E. 2535 (1992) (including its amendment).

- 2) GPSC's directors and executives must report changes in their holding of GPSC's securities at Board meetings.
- 3) GPSC's directors and executives, including executive officers in accounting or finance at or above the vice president level and employees involved in operations that give them knowledge of inside information material to changes in securities prices, must suspend their trading of GPSC's securities until the public disclosure of financial statements or positions. These individuals will be informed of their suspension in written form at least 30 days before the public disclosure and should wait at least 24 hours after the disclosure before engaging in any trade. They are also prohibited from disclosing such material information to other people.
- 4) GPSC's directors, executives, and employees are prohibited from exploiting inside information that may affect changes in GPSC's securities prices that has not been publicly disclosed but is accessible to them because of their offices or positions to purchase or sell, offer to purchase or sell, or invite any other person to purchase, sell or offer to purchase or sell GPSC's stocks or securities (if any or directly or indirectly) in such a way as to harm GPSC, whether such an act is done for their own or another person's benefit or to disclose such information so that they may receive consideration from the person who engages in such acts.
- 5) GPSC's directors, executives, and employees, both current and former, are prohibited from disclosing inside information and classified information as well as confidentiality of GPSC's suppliers accessible to them because of their duties to an external person even if such disclosure may not harm GPSC and its suppliers.
- 6) GPSC's directors, executives, and employees, both current and former, must safeguard GPSC's confidentiality and/or inside information and must use inside information solely for its business operations. In addition, GPSC's directors, executives, and employees are prohibited from exploiting GPSC's confidentiality and/or inside information to benefit any other company in which they are shareholders, directors, executives, employees, and workers.
- 7) Disciplinary actions shall be enforced for any violation of the use of inside information for personal gain, ranging from warning notifications, payment cuts, temporary suspension without pay, to termination of employment. The severity of the disciplinary action is based on the intention and the gravity of the violation.

Protection against Abuse of Inside Information

- 1) New directors and executives of GPSC are informed and made aware of their duty to report changes in securities holdings of themselves, their spouses, and their minor children within three workdays after such changes via SEC's online system. In addition, current directors and executives are also reminded regularly via notices and emails to submit reports in changes in securities holdings (if applicable).
- 2) GPSC's directors, executives, and relevant employees are notified in writing of black-out periods designated by GPSC before public disclosure of material information to changes in securities prices.
- 3) The securities holdings of GPSC's directors and executives are disclosed in Form 56-1 One Report and on GPSC's website. In addition, the Board tracks changes in securities holdings of GPSC's directors and executives monthly through reports at the Board meetings. In 2022, no director or executive was found to have conducted trading in securities during the period prohibited by the Company.

Directors and Executives' Shareholding in GPSC in 2022 (including Spouses and Minors)

Name – Last Name	Number of Shares		Increase/ (Decrease) during the year	Remarks
	Dec. 31,2021	Dec. 31, 2022		
Directors				
1. Mr. Pailin Chuchottaworn	-	-	-	-
2. Mr. Kurujit Nakornthap	57,029	57,029	-	-
3. Gen. Santipong Thampiya	-	-	-	-
4. Mrs. Nicha Hiranburana Thuvatham	-	-	-	-
5. Mr. Chalermphol Pensoot	-	-	-	-
6. Mr. Somchai Meesen	-	-	-	-
7. Mr. Noppadol Pinsupa	137,300	137,300	-	-
8. M.L. Peekthong Thongyai	N/A	-	-	-
9. Mr. Wuttikorn Stithit	-	-	-	-
Spouse	10,000	10,000	-	-
10. Mr. Kongkrapan Intarajang	-	-	-	-
11. Mr. Lavaron Sangsnit	-	-	-	-
12. Miss Pannalin Mahawongtikul	N/A	9,409	-	-
13. Mr. Worawat Pitayasiri	-	-	-	-
Executives (under SEC’s definition)				
1. Mr. Worawat Pitayasiri	-	-	-	-
2. Mr. Sirimet Leepagorn	-	-	-	-
3. Mrs. Rosaya Teinwan	28,228	28,228	-	-
4. Mr. Thitipong Jurapornsiridee	-	-	-	-
Spouse	11,500	11,500	-	-
5. Mrs. Sriprapha Sumruatruamphol	-	-	-	-
6. Mr. Arjan van den Broek	-	-	-	-
7. Mr. Kulapat Permbhusri	-	-	-	-
8. Mr. Wisit Srinuntawong	-	-	-	-

Remarks:

N/A means directors who were appointed in 2022.

- * One director with indirect shareholding through his spouse was Mr. Wuttikorn Stithit
- * One executive with indirect shareholding through his spouse was Mr. Thitipong Jurapornsiridee
- * As of December 31, 2022, the total GPSC shares held directly and indirectly by directors and executives equaled 0.0075801 percent.

3) Campaign activities to promote CG code, code of business conduct, and anti-fraud and anti-corruption

- GPSC prescribed its internal-control measure for actions against bribing domestic and foreign government officers and international organization officers under the notification of the National Anti-Corruption Commission.
- Reviewed compliance with operation and the code of business conduct to ensure that the Company appropriately and completely implemented the code of business conduct. The assessment results revealed the Company's completed implementation in all topics.
- Focused on personnel as important resources and foundation of the CG code which GPSC regularly provides training and communication with personnel such as orientation of new employees, annual training through E-Learning, and activities organized for communication and awareness. In 2022, the Company focused on management of conflict of interest, confidentiality, anti-corruption, No-Gift Policy, compliance with laws and international human rights, as well as political rights and neutrality, and others.
- Hosted training sessions and communicated with stakeholders about the anti-fraud and anti-corruption policy, guidelines for accepting/giving gifts, receptions, and other benefits, and the whistleblowing and whistleblower protection policy as detailed below:
 - On November 23, 2022, GPSC and PTT Group organized PTT Group CG Day 2022 activities under the theme of "Togetherverse CG Power for Sustainability & Beyond" for PTT Group employees. Relevant government agencies and the suppliers were invited to witness PTT Group's commitment to corporate governance in operating its businesses. The event was held through the hybrid mode (on-site and online) under the New Normal situation.
 - Provided training to employees of IRPC Clean Power Co., Ltd. under the theme of "CG code in business operations" as well as anti-fraud and anti-corruption.
- GPSC required directors, executives, and employees to submit their complete annual conflict-of-interest reports online to the supervisor of each unit for acknowledgment and management in case of personnel's conflict of interest.
- GPSC secured recertification as member of the Thai Private Sector Collective Action against Corruption (CAC) with effect from June 7, 2018 for three years and have maintained that certification until today. GPSC has been a CAC Re-Certified Company since December 31, 2020. The Company was committed to maintaining the standards of continuous anti-fraud and anti-corruption actions. It plans to submit for recertification in 2023. To this end, the Company's preparation includes review and improvement of the policy contents of anti-fraud and anti-corruption, the implementation of the anti-fraud and anti-corruption policy, accepting/giving gifts, receptions, or other benefits in line with CAC's assessment criteria.
- GPSC underwent CG code assessment from external agencies inside and outside the country for certification of CG code as follows:
 - GPSC underwent CG code assessment of listed companies in Thailand (CGR Checklist). The Company garnered an "excellent" CGR level by Thai Institute of Directors for the seventh consecutive year.
 - GPSC underwent CG code assessment of listed companies in ASEAN (ASEAN CG Scorecard). The Company was ranked at ASEAN Asset Class. This year, the project set the ASEAN Corporate Governance Scorecard Virtual Awards on December 1, 2022.

- Announced its No-Gift Policy during the New Year and other occasions at www.gpscgroup.com
- Promoted the practice of CG code for directors and executives as follows:
 - Orientation for new directors
 - Organize training for directors
 - Meetings of the directors without the management
 - Meetings of the independent directors
 - Prepared the report of the CG Code of SEC
 - Protection against the abuse of inside information (Warning of the report of the changes in securities holdings of directors and executives (Form 59-2) and warning of the Black-Out Period set by the Company, where the Company would make important information disclosure that might impact its securities prices, and so the information had to be disseminated to the public first)
 - GPSC supervised and warned directors and executives to report conflicts of interest in line with the Board policy
 - GPSC reviewed the Board and the Sub-committee Charters. In 2022, the Company improved the Corporate Governance Charter and changed the name to the Corporate Governance and Sustainability Committee consistent with the criteria of the new CGR.
 - GPSC assessed the Board's performance
- Stakeholders' rights (minority shareholders)
 - Organized the AGM in compliance with the CG code
 - Provided the opportunity for shareholders to propose the meeting agenda and nominate directors at the AGM.
- Public awareness through information disclosure as follows:
 - Prepared information disclosure on the Company's CG Compliance and Internal Control in the Annual Report, 56-1 One Report, and Sustainability Report.
 - Prepared the information on the Company's CG and Compliance for assessment by the external auditor to improve on the Dow Jones Sustainability Indices (DJSI).

4) Compliance with laws and corporate regulations

To ensure that GPSC operates business in strict compliance with the laws, rules, regulations, requirements, orders, announcements both internal and external, and to ensure that the business runs smoothly and properly under the laws, the Company implements the CG policy in compliance with laws, regulations and their processes to allow personnel to perform their tasks correctly and appropriately. In 2022, the Company implemented the following policy and processes:

- Regular monitoring of new laws with impact on business operations, and supervision to ensure complete and correct compliance with applicable laws
- Improved the Compliance Monitoring System (CMS) to ensure complete and efficient processes of compliance
- Reviewed the completeness of the Company's permit extension and annually reviewed the compliance with laws of applicable agencies
- Encourage employees' Compliance Procedure through training, processes of compliance with applicable laws and regulations through E-learning and other media channels such as E-mail, Intranet, Official Line on a regular basis to ensure employees' awareness and acknowledgment

- Compliance with the Personal Data Protection Act as follows:
 - Reviewed the relevant departments' compliance by which each department prepared the documentation and implementation as specified by law
 - Changed the Privacy Committee on June 15, 2022
 - Appointed a Data Protection Officer (DPO) and notified the Office of the Personal Data Protection Committee for acknowledgment
 - Sought approval for personal data processing of personal data owners as specified by law
 - Prepared the Data Processing Agreement (DPA) to prescribe the duties and responsibilities of each party on personal data processing
 - Communicated and geared up for the enforcement of the Personal Data Protection Act to raise employees' awareness through E-mail and knowledge provided for the employees through E-learning.
- To ensure that GPSC's employees operate business with propriety, transparency, fairness, and accountability in line with the rules, regulations, CG policy, and code of business conduct, and to provide the opportunity to employees and stakeholders to have access to whistleblowing channels, the Company implemented the whistleblowing and protection policy by devising appropriate complaint channels and management.

6) Whistleblowing

GPSC provides the following complaint channels:

Mailing Address:

Global Power Synergy Plc
555/2 Energy Complex Building B, 5th Floor, Vibhavadi-Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok 10900

E-mail Address:

whistleblowing_complaint@gpscgroup.com

Website:

<http://www.gpscgroup.com/th/cg/whistle-blowing>

In person

Compliance Division
Phone: 0-2140-4600

Between January 1, 2022 - December 31, 2022, GPSC received no complaint and detected no act of fraud or corruption.

5) Guidelines for Information Disclosure on Anti-Fraud and Anti-Corruption Measures

In 2022, GPSC prevented involvement in fraud and corruption of business operations of the Group through the following measures:

- GPSC announced its anti-fraud and anti-corruption measures through its No-Gift Policy (on accepting/ giving gifts, receptions, and other benefits), whistleblowing and a whistleblower protection policy approved by the Board to ensure implementation by GPSC's employees. It also raised their awareness and training held to foster their understanding. Upon violation, the Company would exercise the most severe penalty of employment termination and might take legal action if damage was done to the Company.

8.2 Performance Report of the Sub-committees

8.2.1 Audit Committee Report

Dear Shareholders,

The Audit Committee consists of three independent directors, all of whom possess pertinent expertise and experience in financial accounting, engineering, energy business, legal affair, and management. They are, therefore, qualified to review credibility of financial statements in accordance with the regulations of the Office of Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET). The Audit Committee comprises the Chairman, Mr. Chalermphol Pensoot, and two audit committee members, namely Mr. Kurujit Nakornthap, and Mr. Somchai Meesen. Serving as secretary to this Audit Committee is Ms. Attayar Sukotanang, Senior Vice President, Corporate Internal Audit of GPSC.

The Audit Committee independently performed its duties as prescribed by GPSC's Board and as specified in the Audit Committee Charter and Corporate Policies, which is updated and approved by the Board annually, in compliance with all the rules stipulated by the SEC and SET. The Audit Committee strives to ensure good corporate governance and comprehensive reviews of financial reports, connected transactions, risk management, internal controls, and internal audit systems. The Audit Committee also ensures that the Company remains in compliance with laws and regulations and monitors GPSC's domestic and overseas operations in order to create value added to the organization.

In 2022, the Audit Committee held 6 meetings with the Management, Internal Audit Staff, and the External Auditor. This year's performance highlights are as follows:

1. Review of Financial Statements: The Audit Committee reviewed material items and issues of quarterly and annual financial statements of GPSC and its subsidiaries, in compliance with the Thai Financial Reporting Standards (TFRS), with the cooperation of related members of the Management Committee and the External Auditor. The Audit Committee also considered satisfactory clarifications from the Top Executives of the companies and

the External Auditor, which ultimately led to the conclusion that GPSC's financial statements and disclosures in the notes to the financial statements are aligned with Thai financial regulations and standards. Thus, the Audit Committee approved the aforementioned financial statements, as reviewed and examined by the External Auditor. Ms. Amornrat Permpoonwathanasuk gave an unqualified opinion. The auditor also opined that the internal control evaluation results were appropriate, no data were concealed, and the auditor was able to work independently. In addition, the Audit Committee met with the auditors, without presence of company executives, to ensure independent discussions related to access and retrieval of data, the examination of data essential to production of financial statement, and disclosure of information in compliance with reporting standards and beneficiary to users, as well as key audit matters.

2. Review of Connected Transactions: The Audit Committee reviewed connected transactions, particularly those posing potential conflicts of interest with GPSC and its subsidiaries under the guidelines of the Stock Exchange of Thailand (SET)'s and the Securities and Exchange Commission (SEC)'s announcements. This review revealed that GPSC and its subsidiaries operated under regular business practices, exercised fairness and sensibility, and showed no siphoning practice. In addition, its disclosure of information was carried out timely with accuracy and completeness in compliance with GPSC's corporate governance policies as well as the SEC's and the SET's notifications.

3. Review of Risk Management: The Audit Committee reviewed the overall efficiency and appropriateness of GPSC's risk management, for which risk identification must consider internal and external factors, in terms of policy and processes in order to ensure that GPSC and its subsidiaries have in place appropriate risk management processes that minimize any negative impact and respond to

changes effectively and promptly. Risk management practices were effectively executed under the stated policy and plans, and were in line with GPSC and its subsidiaries' short-term and long-term goals and strategic plans. The Audit Committee also enquired about the management of risks arising from the price increase and volatility of the main raw materials and fuels used in the production process, which may affect the Company's long-term goals as well as the powerplant's mitigations to reduce the impact on business operations and build customer confidence in the services.

4. **Review of Internal Control System:** The Audit Committee reviewed compliance with the law and relevant regulations, together with the Management, under the Three Lines of Defense concept, in which legal and regulatory compliance was audited, monitored, assessed, and reported on regular basis. In addition, the executives also assessed the internal control systems using the internal control assessment questionnaires prepared under the framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The conduct of operations of GPSC and subsidiaries has been both efficient and effective and has good internal control system. Moreover, the external auditor also expressed that they found no material defects nor problem.
5. **Review of Internal Audit System:** Having Corporate Internal Audit Unit report directly to the Audit Committee ensure the unit's independence as is specified in the Audit Committee Charter. The Audit Committee also reviewed and approved the annual internal audit plans and long-term plan covering GPSC, its subsidiaries, and their joint ventures. The Audit Committee also supervised the unit's operation to comply with Internal International Standards for the Professional Practice of Internal Auditing (the Standard), also to align with the strategies and directions of GPSC. This included the oversight for internal audit quality assessment in order to enhance internal auditor's qualification and competency correlating to the Standard. In addition, the Audit Committee assessed the annual performance of the Corporate Internal Audit and reviewed its structural suitability and efforts in the continuous development of personnel in order

to enhance their qualification and competency correlating to the Standard. In 2022, the Audit Committee emphasized the importance of strengthen efficiency and effectiveness of internal audit work by applying Robotic Process Automation (RPA) and Data Analytics for systemic data analysis; and also establish the ability of Management, Operators, and Relevant Departments to self-evaluate their internal control efficiency.

6. **Appointment of the External Auditor for 2023:**

The Audit Committee nominated external auditor candidates from PricewaterhouseCoopers ABAS Limited (PWC), namely Ms. Amornrat Permpoonwathanasuk (CPA 4599), or Mr. Boonruang Lertwisetwit (CPA 6552), or Ms. Rodjanart Banyatananusard (CPA 8435), or Ms. Wanvimol Preechawat (CPA 9548), to the GPSC Board of Directors. This nomination is to be proposed by the Board at the Annual General Meeting to the Shareholders for approval and appointment as the Company's External Auditor for the year 2023, along with the approval of audit fees.

In summary, the Audit Committee carried out its duties and responsibilities in the manner as stated in the Audit Committee Charter, employing their diverse expertise, care, prudence, and adequate independence while also providing recommendations for the equitable benefit of all stakeholders. The Audit Committee's opinion is that GPSC's financial reports are accurate and credible, and are also fully consistent with generally accepted accounting standards; GPSC's operations were in full compliance with all relevant laws and business obligations. Furthermore, the Audit Committee found that GPSC had implemented good corporate governance, put in place adequate risk management, suitable and effective internal control, and efficacious internal audit systems.

On behalf of the Audit Committee.



(Mr. Chalermphol Pensoot)

Chairman of the Audit Committee

8.2.2 Report of the Nomination and Remuneration Committee

Dear Shareholders,

The Board of Directors of Global Power Synergy Plc (GPSC) has appointed a Nomination and Remuneration Committee consisting of at least three directors, one of whom must be an independent director. The current Committee comprises three directors, namely Gen. Santipong Thampiya (independent director) serving as chairman, with Mr. Noppadol Pinsupa (director) and Mr. Wuttikorn Stithit (director) serving as members.

In 2022, the Committee held three meetings, as highlighted below:

1. Reviewed the 2021 performance assessment of the President & CEO, the findings of which were forwarded to the Board for approval.
2. Screened and proposed Board compensation for 2022 by reviewing GPSC's performance results and business size as well as those of peer

companies and Board responsibility for the Board's endorsement before forwarding it to the 2022 AGM for approval.

3. Nominated candidates for directorship succeeding those who had completed their terms and submitted to the Board for approval before forwarding to the 2022 AGM for appointment as directors succeeding those who had completed their terms.
4. Nominated candidates for Sub-committees by reviewing them against Sub-committee compositions, specifically expertise and appropriate skills for such service, before submitting them for the Board's appointment.
5. Nominated suitable candidates for directorship succeeding those who had resigned before term completion to be submitted to the Board for appointment as directors succeeding those who had resigned before term completion.

On the behalf of the Nomination and
Remuneration Committee



(Gen. Santipong Thampiya)

Chairman of the Nomination and
Remuneration Committee

8.2.3 Report of the Corporate Governance and Sustainability Committee

Dear Shareholders,

Recognizing the importance of corporate governance (CG) to the foundation of corporate sustainability, which promotes business efficiency, the Board of Directors appointed a Corporate Governance Committee to steer tasks relating to CG practices, the code of business conduct, sustainability management, and stewardship of society, communities, and the environment. The current Committee is made up of four directors, namely Mr. Kurujit Nakornthap (Chairman), Mrs. Nicha Hiranburana Thuvatham (independent director), Mr. Somchai Meesen (independent director), and Mr. Lavaron Sangsnit serving as members.

In 2022, the Committee held a total of four meetings, highlighted as follows:

1. Endorsed the 2021 Corporate Governance Report (CGR) on CG Code compliance for disclosure in the 2021 Form 56-1 One Report.
2. Endorsed the improved scope, authority, duty, and responsibility of the President & Chief Executive Officer
3. Endorsed the report on CG implementation and corporate compliance for the first half of 2022
4. Endorsed the report on stewardship of society, communities, and the environment for the first half of 2022
5. Endorsed the report on sustainability management for the first half of 2022
6. Endorsed the criteria for shareholders to propose the meeting agenda and nominate directors at the 2023 AGM
7. Endorsed the criteria and assessment form of the Board's 2022 performance
8. Endorsed the renaming and revision of the Corporate Governance Committee and the Corporate Governance Committee Charter
9. Endorsed GPSC's improved best practices and information disclosure policy in accordance with those of PTT Group
10. Endorsed the 2022 report on the stewardship of society, communities, and the environment and considered the 2023 operation plan
11. Endorsed the 2022 report on sustainability management and considered the 2023 operation plan
12. Endorsed the 2022 annual report on CG implementation and corporate compliance and considered the 2023 operation plan
13. Endorsed the improved anti-corruption policy
14. Endorsed the results of the Board's performance assessment for 2022.

Thanks to GPSC's commitment to running its businesses with CG, GPSC garnered the following domestic awards for CG and sustainability management:

- Excellence rating by The Thai Institute of Directors (IOD) under its Corporate Governance Report of Thai Listed Companies (CGR) 2021 program for the seventh consecutive year
- Underwent assessment under the ASEAN CG Scorecard Project by The Thai Institute of Directors (IOD), graded as ASEAN Asset Class

- CAC (Thailand's Private Sector Collective Action Coalition against Corruption) membership was renewed for three years from the date of recertification between March 31, 2021 and March 31, 2024
- Was ranked in the Dow Jones Sustainability Indices (DJSI) in the Emerging Markets Index, Electric Utilities category, for 2022 for the first year
- B (Management) rating for the sixth consecutive year in recognition of its management on climate change, attested by an international non-profit organization, Carbon Disclosure Project (CDP) 2022, for disclosure of information on climate change
- SET Awards 2022, Sustainability Excellence, Highly Commended Sustainability Awards category, organized by SET in collaboration with the Money and Banking Magazine, given to listed companies with outstanding sustainable business operations
- Thailand Sustainability Investment (THSI) Awards 2021 from SET, citing GPSC's outstanding Environmental, Social, and Governance (ESG) management, successfully passing selection for the fifth year
- Low Carbon and Sustainable Business Index (LCSB) Excellence Award, presented by Thailand Greenhouse Gas Management Organization (Public Organization), which reflects GPSC's strong determination and commitment to greenhouse gas management and reduction as well as maintaining balanced business in operations and economic, social and environmental sustainability.

On behalf of the Corporate Governance
and Sustainability Committee



(Mr. Kurujit Nakornthap)

Chairman of the Corporate Governance
and Sustainability Committee

8.2.4 Report of the Risk Management Committee

Dear Shareholders,

GPSC has undertaken the business strategies and goals as committed to all shareholders and stakeholders to drive the organization for robust growth and achieve its goals in domestic and international energy and renewable-energy business expansion, battery business development, energy storage systems, and related businesses as well as GPSC's New S-Curve undertaking, maintaining production and distribution stability, to increase the potential of business operation of suppliers and customers, leading to balance in business operations in response to long-term communal, social, and environmental sustainability. The past year was truly a challenging one for GPSC to achieve its business goals due to the economic slowdown and financial volatilities at the micro level, fuel price fluctuations arising from geopolitical conflicts, wars, and political polarization at the international level, as well as the policy to adjourn adjusted electricity prices which reflected the real costs of the government and new threats such as cyber threats.

Hence, GPSC emphasized concrete risk management under the situations to maintain efficiency of its operations, potential impact mitigations and new business opportunities arising from risk management. GPSC steered corporate risk management through the Risk Management Committee (RMC) which comprises three knowledgeable and experienced directors of the Board, namely Mr. Noppadol Pinsupa, Chairman, Mr. Kongkrapan Intarajang, Mr. Wirat Uanarumi⁽¹⁾, Mr. Pakorn Apaphant⁽²⁾ and Mr. Worawat Pittayasiri

(members). This Committee executed its tasks to the best of its ability in integrating risk management and monitoring management's operational efficiency to ensure that GPSC's performance is in line with the prevailing business directions, both short-term and long-term. This past year, the Risk Management Committee held nine meetings to screen and consider issues of significance, summarized as follows:

1. Defined and reviewed the risk management policy together with the scope of corporate risk management and reviewed GPSC's risk appetite in keeping with the volatile business environment.
2. Screened and commented on the preparation of short-term and long-term corporate risk management and monitored management's operations to ensure efficiency, thus leading to the goals in a sustainable way.
3. Monitored and analyzed various external circumstances, including economic and energy/fuel price fluctuations as well as international conflicts which represented emerging risks. Advocated new models of management to enable GPSC to manage impacts efficiently and promptly.
4. Considered and provided recommendations and opinions on risk issues in assorted aspects to support investment decisions. Followed up and evaluated the progress of operations to ensure efficiency under controlling measures or concrete mitigation plans and an acceptable risk appetite for maximum benefit.

⁽¹⁾ Mr. Wirat Uanarumit resigned from director of NRC effective on 30 September 2022.

⁽²⁾ Mr. Pakorn Apaphant resigned from director of NRC effective on 26 December 2022. The meeting of Board of Director No. 1/2023 on 24 January 2023 appointed Gen. Santipong Thampiya Independent Directors as Director of NRC replacing Mr. Pakorn Apaphant since 25 January 2023.

5. Monitored and supported management's risk implementation to ensure its efficiency in line with prevailing circumstances.

At the same time, the Risk Management Committee stresses the importance of supervising and supporting the tasks of the Risk Management and Internal Control Committee (RMCC) to ensure that the factors with potential impact on GPSC are promptly dealt with by all departments.

The Risk Management Committee is committed to performing duties with responsibility and supporting corporate risk management to its full capacity to achieve GPSC's business goals and mission, leading to sustainable growth and utmost benefits for all groups of shareholders and stakeholders.

On behalf of the Risk Management Committee



(Mr. Noppadol Pinsupa)

Chairman of the Risk Management Committee



9. Internal Control and Related-Party Transactions

9.1 Internal Control

Under the framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), GPSC's internal-control system covers all three aspects including efficiency and effectiveness of the operations, reliability of reporting, and legal, regulatory, and procedural compliance.

Our Control Self-Assessment (CSA) is mandatorily conducted annually during the third quarter. The essence of CSA is to ensure sufficiency on qualitative assessment of system efficiency and system applications, as well as descriptive assessment under the guidelines stated in the announcement of the Securities and Exchange Commission (SEC) Thailand through seminars, interviews, and reviews of relevant documents. CSA results are reported to the Executive Committee, the Audit Committee, and the Board of Directors and published in the annual registration statement and annual report in line with the guidelines and format of the PTT Group Way of Conduct.

The resolution approved by the Audit Committee on December 9, 2022, at the Audit Committee Meeting No. 5/2565, indicated that the Company's 2022 internal-control system was sufficiently effective and suitable to the operating businesses. The Board, at the No. 16/2565 meeting on December 13, 2022, acknowledged the internal-control system report and comments made by the Audit Committee.

The overall outlook of GPSC's internal-control system in 2022 was framed by five major facets.

1. Control Environment

We have provided a work environment sufficiently and appropriately to the business operations, with suitable charters, policies, and an organizational structure. The corporate culture has been developed to fully

comply with business ethics and good governance of GPSC Group, including the culture of internal control, good role modeling of members of the Board and executive teams, and good management in line with internal-control best practices.

- **Ethical Conduct and Good Governance**

The Corporate Governance (CG) and Code of Conduct are clearly defined and endorsed by the Board. All executives and employees must sign on and acknowledge the CG and Code of Conduct, and fully comply with the operating procedures stipulated in the manual, including reporting strictly all events with conflicts of interest either annually or immediately, participating in the awareness survey on GPSC's code of conduct, integrity, and ethics, as part of the corporate culture known as ACT SPIRIT.

- **Independence and Roles and Responsibility of the Board**

Under the Charter of the Board of Directors with clear roles, responsibility, and authority, directors are truly independent of the roles and duties of management. Directors are responsible for supervising business operations to achieve the corporate business targets, regularly monitoring overall work progress conducted by management to ensure alignment with corporate strategies and objectives and corporate governing policies. The Audit Committee supervises internal audits and offers comments and opinions on financial statements and assessment of sufficiency of the existing internal-control system.

- **Reporting Line Structure, Authority, and Delegation of Authority**

The GPSC organizational structure, line of command, job titles and positions, and manpower are designed under the Three Lines of Defense audit principle that provides comprehensive checks and balances, including operating authority and financial authority of

executives as well as types of approval published in the table of authorities into separate duties for approval, execution, recording, and management of all assets.

- **Human Resource Management for Corporate Success**

Our human resource management is structured with clearly defined policy and strategies, system and processes designed to support for corporate success, including manpower planning, recruitment, development, and retention of knowledgeable and competent executives and employees, notably those identified as potential successors, suitable for performance evaluation and continuous improvement to cope with the changing work environment and corporate needs. GPSC routinely communicates with all employees on its internal-control system, roles and duties of executives and staff under the Three Lines of Defense, and regularly conducts awareness surveys to ensure full awareness of the internal-control system and nurture this corporate culture.

2. Risk Management

Recognizing the importance of risk management and its applicable tools to support direct and indirect business operations, COSO ERM Framework 2017 and USI 31000:2009 are the enterprise-wide risk management standards we are strictly adhered to.

- **Definition of Corporate Strategic Objectives and Goals**

Striving to become the leader of the innovative energy for sustainability, GPSC has clearly defined its business targets and objectives of each business aspect, and delegated these to all business units and divisions to subsequently develop their respective business and operating plans.

- **Extensive Risk Identification and Analysis**

The risk identification and analysis process involve all risks facing the corporate strategic objectives, business goals, business operating nature and directions, related key success factors, and internal and external work

environment affecting the corporate performance. The process includes details and a variety of risks at different levels such as the corporate or business unit level, risk treatment and risk owners, and progress reports to the Risk Management Committee to ensure full aspects of strategic, operating, reporting, and regulatory/procedural compliance risks.

External risk exposures represented the focus for risk management process review in 2022. These include impacts from the Covid-19 pandemic, trade wars, geopolitics and global economic shifts, global energy shortages, technological disruptions, and power energy transition. The review was made against the corporate objectives, including business targets and capital planning, business transformation, and existing human resource capability. These processes were managed to ensure clear linkage of all activities in all business units and divisions throughout GPSC and effectiveness of risk management and, wherever possible, improvement and additional tools can be made and introduced to the existing risk management system.

- **Determination of Conditions for Corrupt Practices**

With full awareness of possible corruption and corrupt practices, GPSC has integrated the risk management process with the risk-based audit against corrupt practices under supervision of the Audit Committee, intended to avoid and prevent any work condition which could create chances of corrupt practices. This is in line with the corporate intention and compliance under the joint participation with the Private Sector Collective Action against Corruption (CAC).

- **Change Identification and Assessment Affecting Internal-Control System**

Recognizing that new types of risks continuously face the business, we routinely identify emerging risks and develop respective proper risk treatments. Two major emerging risks in 2022 are cybersecurity and managing under uncertainty, particularly that of the Covid-19 pandemic. These emerging risks were

continually closely monitored, with progress updates reported to all parties in charge of risk management. To ensure uninterrupted business operations against these emerging risks, GPSC has put in place the business continuity management (BCM) system, apart from the annual drill, to handle any emergency.

3. Control Activities

All the operation activities are controlled, including those manual controls and automated controls. All these controls are integrated and managed efficiently under the acceptable level of risk or proper risk treatments.

- **Internal-Control Measures to Restrain Risks at the Acceptable Level**

GPSC's internal-control system covers all aspects of the corporate key work processes including communication, monitoring, and reporting of all operating performances, with proper sign-on by respective personnel to assure efficiency of system applications.

A major development and adjustment of the internal-control system in 2022 was made to the automated control of the enterprise ERP Consolidation under the SAP S/4 HANA for proper management and higher efficiency, as well as standardization of the system for major business processes: supply chain management, commercial, industry solution utility, operation and plant maintenance, engineering and project management, finance and accounting, and human resources.

- **Development of General Control Activities with Technology Systems**

Our IT design is risk-based, that is, equipped with system custodians, integration of program management on all technology systems, and fully controlled operating systems with advanced identity verification by all users. The technology system is routinely checked and modified for upgrade.

With many more reports on impacts from cyberattacks and cyberthreats, additional controls were made to the internal-control system in 2022; review and modification of the Company Policy on IT Security, adjustment of the monitoring system on emerging cyberthreats to plant and office IT systems, promoting awareness and providing knowledge of emerging risks, and system and standard stress tests.

- **Policy-Driven Internal Control**

Under the GPSC Group Way of Conduct, relevant policies and operating procedures were reviewed and adjusted, including key policies and the work manual for company directors, such as internal control, risk management, anti-corruption and anti-corrupt practices, receiving and giving of gifts and interests, regulatory compliance, and standard operating procedures. To fully comply with the new SET provision on related party transactions, GPSC revised procedure to clearly specify the sensibility and rationale of such transactions, benefit to GPSC, and the approval process with no conflict of interest. Communications on company policies and their updates with all directors, executives, and employees are routinely managed, together with evaluation of awareness and relevant knowledge within the company and among GPSC Group.

4. Information Technology System and Data Communication

The information technology and data communication systems are designed with safety, transparency, and efficiency approaches to optimize communication efficiency with all internal and external agencies and stakeholders.

- **IT Data Quality Control**

The IT on data management and data sharing system under the corporate data structure and system architecture is operated with data governance to ensure optimum safety management and data quality control. Additional inclusion to the system were a personal data protection policy and measures to comply with the Personal Data Protection Act.

- **Internal Communication**

To optimize the use of internal communication through various communication channels designed and provided, we have put in place a security system to ensure efficiency, reliability, and safety of the internal-control system.

- **External Communication**

Data disclosure to external agencies and authorities, as well as to all stakeholders, including data accuracy, completeness of information, transparency and timely for financial and non-financial data, is our commitment. Corporate Communications is responsible for communicating disclosable data to all stakeholders and external agencies and authorities, and Investor Relations oversees the sharing of financial and key performance data with shareholders and investor groups.

In addition, we have created multiple communication channels to share company data including news, activity updates, and annual reports with all interested parties through electronic mailing and our website. Interested parties can access these channels, search for additional company data for various purposes, and inform the company for any malpractices or corrupt-practices through the safe and confidential whistleblower channel provided.

5. Monitoring System and Activities

GPSC has installed a tracking system to continually assess sufficiency and efficiency of the internal-control system. The system also provides additional improvement to further increase system efficiency and suitability under the changing work environment as follows:

- **Internal-Control System Monitoring and Evaluation**

Under the good governance code, all executives and staff strictly adhere to the guidelines for good governance and code of conduct manual, with emphasis on benefit to the Company and stakeholders.

Corporate Internal Audit, reporting directly to the Audit Committee, routinely reviews the efficiency and effectiveness of the controlling supervision of all activities executed under the operating policy and within the procedural controls, and regularly reports to the Audit Committee and notifies the management team.

Key monitoring and evaluation results in 2022:

- (1) Reports of potential conflicts of interest, both included in the annual report and whenever such conflicts took place during 2022. The report was satisfactorily made and rated 100% against the target.
- (2) The key workflow evaluation was completed against the table of delegation of authority, including those related to procurement and financial-accounting-budgeting operating processes.
- (3) GPSC progress reports of the internal-control system development and improvement on system sufficiency evaluation for GPSC Group.

- **Internal-Control Assessment and Communication**

Under the Three Lines of Defense, particularly on the Third Line Role, Corporate Internal Audit performs auditing and making suggestions independently, exchanging data with the operators or the First Line Role, and risk owners, to continuously improve the efficiency and effectiveness of operations and management. These roles can be performed through wrap-up meetings or meetings focusing only on summaries, exit meetings, or meetings focusing only on audit results to the business unit leaders, and audit reports or details of the audit to the Audit Committee. All suspicious transactions and activities that might cause severe damage to GPSC and business performance, including conflicts of interest, corrupt practices, anomalies, and critical shortcomings, must be immediately analyzed and reported to the Audit Committee and top management team for immediate corrective actions.

9.2 Connected Transactions

9.2.1 GPSC and subsidiaries' connected transactions with potential parties of conflict

9.2.1.1 PTT Plc ("PTT")

PTT holds 47.27% of GPSC's shares. There are five members of GPSC's Board of Directors who concurrently hold directorship or executive positions at PTT, namely Mr. Noppadol Pinsupa, M.L. Peekthong Thongyai, Mr. Wuttikorn Stithit, Ms. Pannalin Mahawongtikul, and Mr. Worawat Pitayasiri.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam, and industrial water - Revenue - Receivable	683.25 37.72	GPSC and PTT entered individual sales agreements of each product, with prices and terms considered normal business practice.
Other income from pipe-rack rental - Revenue - Payable	0.67 2.14	GPSC Group leased out its pipe racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.
Purchase of natural gas - Expenses - Payable	60,571.06 4,815.05	GPSC Group purchased natural gas as a raw material for power generation with prices and terms considered normal business practice.
PTT secondment - Expenses - Payable	110.29 49.96	PTT seconded its employees to GPSC in support of GPSC's business with prices and terms considered normal business practice.
Expenses on pipe-rack rental - Expenses	5.78	GPSC requested rental of pipe racks with prices and terms considered normal business practice.
Expenses on gas pipeline system inspection - Expenses	0.22	GPSC hired PTT to run a standard safety test of the pipeline system to ensure its operability with prices and terms considered normal business practice.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Use of PTT's Service Center - Expenses	0.29	PTT set up a Service Center within its headquarters and the Energy Complex (EnCo), including a medical care center, fitness center, air booking center, and training center. It charged fees at the same rate charged to PTT Group with prices and terms considered normal business practice.
Expenses on technical advisers - Expenses	3.79	GPSC requested personnel support on technology research and development (R&D) with prices and terms considered normal business practice.
Expenses on lease of land - Expenses - Interest payment on financial lease agreement	6.78 2.99	PTT entered an agreement to obtain rights of superficies for its operations with prices and terms considered normal business practice.

9.2.1.2 PTT Global Chemical Plc ("GC")

GC holds 10.00% of GPSC's shares. There are two members of the Board of Directors who concurrently hold directorship or executive positions at GC, namely Mr. Noppadol Pinsupa and Mr. Kongkrapan Intarajang.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam, and industrial water - Revenue - Receivable	10,325.51 938.82	GPSC Group and GC entered individual sales agreements of each product, with prices and terms considered normal business practice.
Income from engineering design, procurement and construction (EPC) service - Revenue	0.91	GPSC Group entered an agreement with GC to provide EPC services with prices and terms considered normal business practice.
Other income from pipe-rack rental - Revenue - Advance revenue	8.66 0.05	GPSC Group leased out its pipe racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on tail gas purchase - Expenses - Payable	409.42 21.59	GPSC Group purchased tail gas for power generation at a price and under terms considered normal business practice.
Expenses on pipe-rack rental - Expenses - Payable	0.49 3.01	GPSC Group requested rental of pipe racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.
Expenses on request for land use - Expenses - Interest payment on financial lease agreement	0.82 0.55	GPSC entered an agreement with GC to request land use to install high-voltage power lines at the rental rates and under terms considered normal business practice.

9.2.1.3 Thai Oil Plc. ("TOP")

TOP holds 10.00% of GPSC's shares. There are two members of the Board of Directors who concurrently hold directorship or executive positions at TOP, namely Mr. Pailin Chuchottaworn and Miss Pannalin Mahawongtikul.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of electricity from solar power (PPA) - Revenue - Receivable	1.14 0.45	GPSC Group entered the Solar Power Purchase Agreement (PPA), with prices and terms considered normal business practice.
Expenses on purchase of diesel - Expenses - Payable	16,199.72 3,074.43	GPSC uses diesel as reserve fuel at the power plant in case of natural gas delivery interruption, with prices and terms considered normal business practice.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on land rental		GPSC's power plant lies on state property over which TOP earned possession and usage rights. TOP subleased such land to GPSC with prices and terms considered normal business practice.
- Expenses	0.23	
- Interest payment on financial lease agreement	2.51	
- Deposit	0.40	
Expenses on raw-water pipe rental		GPSC rented TOP's raw-water pipes at the power plant area, linked to Eastern Water Resources Development and Management Plc (EW)'s raw-water pipes, to buy water from EW with prices and terms considered normal business practice.
- Expenses	3.95	
- Payable	38.52	

9.2.1.4 IRPC Plc ("IRPC")

GPSC and IRPC have a common major shareholder, namely PTT, which holds 45.05% of IRPC's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power and steam		GPSC Group and IRPC entered individual sales agreements, with prices and terms considered normal business practice.
- Revenue	3,134.58	
- Receivable	422.87	
Income from IRPC secondment		GPSC seconded its employees to IRPC in support of IRPC's business, with prices and terms considered normal business practice.
- Revenue	1.57	
- Receivable	0.35	
Expenses on purchase of power, steam, industrial water and wastewater treatment		GPSC Group's power plants were on the compound of IRPC's plants. It purchased each product and paid treatment charges to IRPC for system testing with prices and terms considered normal business practice.
- Expenses	42.12	
- Payable	3.45	

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on office space rental, water and electricity bills, and central utilities - Expenses - Interest on financial lease agreement - Payable	2.89 0.07 1.27	GPSC rented EnCo's office space. With most of its business partners' headquarters located at EnCo, the company conveniently coordinated with business partners. The rent and terms are considered normal business practice.
Expenses on technical advisers - Expenses	0.05	GPSC requested personnel support on technology R&D at a price and contractual terms considered normal business practice.
Expenses on air pollution reduction project - Expenses	112.53	IRPC-CP jointly developed an air pollution reduction project with IRPC, with an annual fee charged at rates and terms considered normal business practice.

9.2.1.5 PTT Treasury Center Co., Ltd. ("PTT TCC")

GPSC and PTT TCC have a common major shareholder, namely PTT, which holds 100.00% of PTT TCC's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Long-term loans - Loans - Interest expense - Accrued interest	16,100.00 263.38 2.32	GPSC received financial assistance from PTT TCC totaling THB 16,100 million at an interest rate of 2.63%, a market rate comparable to the interest rate of short-term loans issued by commercial banks with comparable payment periods and terms.

9.2.1.6 Business Services Alliance Co., Ltd. (“BSA”)

GPSC holds 25.00% preferred shares of BSA's paid-up registered capital. Also, both companies have common major shareholders, namely PTT, which owns BSA's common shares accounting for 25.00% of BSA's paid-up registered capital, and GC, which holds 25.00% preferred shares of BSA's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on staff outsourcing service		GPSC Group hired BSA to provide outsourcing services of personnel to fit GPSC's objectives with prices and terms considered normal business practice.
- Expenses	114.01	
- Payable	62.16	

9.2.1.7 PTT Phenol Co., Ltd. (“PPCL”)

GPSC and PPCL have a common major shareholder, namely GC, which wholly owns PPCL.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam, industrial water, and nitrogen		GPSC and PPCL entered individual sales agreements of each product, with prices and terms considered normal business practice.
- Revenue	4,426.88	
- Receivable	384.03	
Other income from pipe-rack rental		GPSC leased out pipe-racks with rental rates and terms considered normal business practice. Payment was made in advance, which was booked as income received in advance for the long-term right to use such asset while gradually booking income throughout the contract period.
- Revenue	0.93	

9.2.1.8 GC Maintenance and Engineering Co., Ltd. (“GCME”)

GPSC and GCME have a common major shareholder, namely GC, which wholly owns GCME.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on machinery maintenance and repair		GPSC entered a power plant maintenance service agreement with GCME, an expert in maintenance service, with prices and terms considered normal business practice.
- Expenses	31.63	
- Payable	14.10	

9.2.1.9 NPC Safety and Environmental Service Co., Ltd. (“NPC S&E”)

GPSC and NPC S&E have a common major shareholder, namely GC, which wholly owns NPC S&E.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on operating safety training and purchase of PPE		GPSC engaged in an operating safety training service agreement with NPC S&E, an expert with its own training center and a supplier of standard PPE, with prices and terms considered normal business practice.
- Expenses	22.30	
- Payable	3.88	

9.2.1.10 AGC Vinythai Plc (“AVT”)

GPSC and AVT have a common major shareholder, namely GC, which holds 32.72% of VNT’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power and steam		GPSC and AVT entered individual sales agreements of each product, with prices and terms considered normal business practice.
- Revenue	4,611.07	
- Receivable	501.40	
Other income from pipe-rack rental		GPSC Group leased out its pipe-racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.
- Revenue	1.00	

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on purchase of industrial chemicals		GPSC Group entered an agreement to purchase industrial chemical in support of GPSC's operations with prices and terms considered normal business practice.
- Expenses	7.26	
- Payable	1.79	

9.2.1.11 HMC Polymers Co., Ltd. ("HMC")

GPSC and HMC have a common major shareholder, namely GC, which holds 41.44% of HMC's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam and industrial water		GPSC and HMC entered individual sales agreements of each product, with prices and terms considered normal business practice.
- Revenue	2,268.13	
- Receivable	307.92	
Other income from pipe-rack rental		GPSC leased out its pipe-racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.
- Revenue	0.56	
- Advance revenue	0.01	

9.2.1.12 PTT Tank Terminal Co., Ltd. ("PTT Tank")

GPSC and PTT Tank have a common major shareholder, namely PTT, which wholly owns PTT Tank.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of nitrogen		GPSC and PTT Tank entered a sales agreement with prices and terms considered normal business practice.
- Revenue	17.42	
- Receivable	3.28	
Income from pipe-rack rental		GPSC leased out pipe-racks in Map Ta Phut Industrial Estate, with prices and terms considered normal business practice.
- Revenue	1.32	
- Receivable	0.26	

9.2.1.13 PTT Asahi Chemical Co., Ltd. (“PTTAC”)

GPSC and PTTAC have a common major shareholder, namely GC, which holds 50.00% of PTTAC's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam, industrial water and nitrogen - Revenue - Receivable	440.89 37.42	GPSC and PTTAC entered individual sales agreements of each product, with prices and terms considered normal business practice.
Income from pipe-rack rental - Revenue - Receivable	4.78 0.97	GPSC leased out pipe-racks in Map Ta Phut, with prices and terms considered normal business practice.
Expenses on the purchase of steam - Expenses - Payable	322.71 21.85	Due to excess steam in PTTAC's processes, GPSC purchases such steam at prices and under terms considered normal business practice.
Advance income from sale of steam under Minimum Take-or-Pay terms - Receivable	31.48	Since the annual actual value of product purchase was lower than the minimum value specified in the contract, GPSC requested advance payment (Minimum Take-or-Pay: MTOP). If the purchase volume exceeds the minimum volume specified in the contract within the agreed period, PTTAC can seek refund of such advance payment commensurate with the excess volume consumed. GPSC will book the remaining MTOP as the revenue for the year if PTTAC is unable to consume steam over the minimum volume.

9.2.1.14 GC Logistics Solutions Co., Ltd. (“GCL”)

GPSC and GCL have a common major shareholder, namely GC, which wholly owns GCL.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power and steam		GPSC and GCL entered individual sales agreements of each product, with prices and terms considered normal business practice.
- Revenue	76.50	
- Receivable	8.04	
Income from operation and maintenance service		GPSC entered an agreement with GCL to provide operation and maintenance service for solar rooftop PV and energy storage system (ESS) with prices and terms considered normal business practice.
- Revenue	1.30	

9.2.1.15 Energy Complex Co., Ltd. (“EnCo”)

GPSC and EnCo have a common major shareholder, namely PTT, which owns 50.00% of EnCo’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of electricity from solar power (PPA)		GPSC Group entered a Solar Power Purchase Agreement with prices and terms considered normal business practice.
- Revenue	0.60	
- Receivable	0.10	
Expenses on office space rental and other related services, including parking fee, water and electricity bills, and equipment repair		GPSC rented EnCo’s office since most of its business partners are headquartered at EnCo, making it convenient to coordinate matters with them. Prices and terms are considered normal business practice.
- Expenses	14.13	
- Advance expenses	0.50	
- Interest payment on financial lease agreement	0.80	
- Payable	0.44	

9.2.1.16 PTT Digital Solution Co., Ltd. (“PTT Digital”)

GPSC and PTT Digital have common major shareholders, namely GC, PTT and TOP, holding 40.00%, 20.00%, and 20.00% of PTT Digital’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from fiber optic rental		Since GPSC had surplus fiber optic capacities, it engaged in a memorandum of agreement for fiber optic use with PTT Digital, with prices and terms considered normal business practice.
- Revenue	0.19	
- Receivable	1.15	
Expenses on ICT		GPSC Group hired PTT Digital for their specialization in ICT services for server networks, the internet, emails, training, and installation of ICT support system for meetings, together with SAP system maintenance. The service fees are considered normal business practice.
- Expenses	72.17	
- Payable	65.38	

9.2.1.17 GC Glycol Co., Ltd. (“GCGC”)

GPSC and GCGC have common major shareholder, namely GC, which wholly owns GCGC.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam and industrial water		GPSC and GCGC entered individual sales agreements of each product, with prices and terms considered normal business practice.
- Revenue	559.45	
Other income from pipe-rack rental		GPSC leased out its pipe-racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.
- Revenue	0.10	

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Advance income for steam sale under Minimum Take-or-Pay terms - Advance revenue	36.74	Since the annual actual value of product purchase was lower than the minimum value specified in the contract, GPSC requested advance payment (Minimum Take-or-Pay: MTOP) from GCGC. If the purchase volume exceeds the minimum volume specified in the contract within the agreed period, GCGC can seek refund of such advance payment commensurate with the excess volume consumed. GPSC will book the remaining MTOP as the revenue for the year if GCGC is unable to consume steam over the minimum volume.

9.2.1.18 Global Green Chemicals Plc (“GGC”)

GPSC and GGC have a common major shareholder, namely GC, which holds 72.29% of GGC’s paid-up registered capital, and have a common director in Mr. Kongkrapan Intarajang.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam and industrial water - Revenue - Receivable	566.11 67.98	GPSC and GGC entered individual sales agreements of each product, with prices and terms considered normal business practice.

9.2.1.19 Thai Fatty Alcohol Co., Ltd. (“TFA”)

GPSC and TFA have a common major shareholder, namely GC, which wholly owns TFA through GGC.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam and industrial water - Revenue	99.06	GPSC and TFA entered individual sales agreements of each product, with prices and terms considered normal business practice.

9.2.1.20 Thai Ethoxylate Co., Ltd. (“TEX”)

GPSC and TEX have a common major shareholder, namely GC, which owns 50.00% of TEX’s paid-up capital through GGC.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam and industrial water - Revenue - Receivable	28.81 3.49	GPSC and TEX entered individual sales agreements of each product, with prices and terms considered normal business practice.
Advance income from sale of power under Minimum Take-or-Pay terms - Advance revenue	1.87	Since the annual actual value of product purchase was lower than the minimum value specified in the contract, GPSC requested advance payment (Minimum Take-or-Pay: MTOP) from TEX. If the purchase volume exceeds the minimum volume specified in the contract within the agreed period, TEX can seek refund of such advance payment commensurate with the excess volume consumed. GPSC will book the remaining MTOP as the revenue for the year if TEX is unable to consume power over the minimum volume.

9.2.1.21 Advanced Biochemical (Thailand) Co., Ltd. (“ABT”)

GPSC and ABT have a common major shareholder, namely GC, which owns 32.72% of ABT’s paid-up capital through AVT.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power and steam - Revenue - Receivable	401.00 37.80	GPSC and ABT entered individual sales agreements of each product, with prices and terms considered normal business practice.
Income from pipe-rack rental - Revenue	0.76	GPSC leased out its pipe-racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.

9.2.1.22 Eastern Fluid Transport Co., Ltd. (“EFT”)

GPSC and EFT have a common major shareholder, namely GC, which directly and indirectly owns 15.00% of EFT’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Other income - Revenue	0.59	GPSC’s employee served as a director of EFT. GPSC thus received monthly director fees and bonuses, booked as its revenue.
Expenses on pipe-laying structural maintenance - Expenses - Payable	25.52 0.38	GPSC hired EFT to maintain its pipelaying structures. EFT was the sole provider of such service in the industrial estate where this structure was located. Prices and terms for such work followed the service agreement, considered normal business practice.
Expenses on training service - Expenses	0.11	Course fee for the Confined Space Entry integrated for personnel development, focusing on knowhow and skills, with terms considered normal business practice.

9.2.1.23 Vencorex (Thailand) Co., Ltd. (“VCX”)

GPSC and VCX have a common major shareholder, namely GC, which indirectly owns 100.00% of VCX’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam, and industrial water - Revenue - Receivable	60.37 3.33	GPSC and VCX entered individual sales agreements of each product, with prices and terms considered normal business practice.
Advance income from sale of power under Minimum Take-or-Pay terms - Advance revenue	25.81	Since the annual actual value of product purchase was lower than the minimum value specified in the contract, GPSC requested advance payment (Minimum Take-or-Pay: MTOP) from VCX. If the purchase volume exceeds the minimum volume specified in the contract within the agreed period, VCX can seek refund of such advance payment commensurate with the excess volume consumed. GPSC will book the remaining MTOP as the revenue for the year if VCX is unable to consume power over the minimum volume.

9.2.1.24 Sak Chaisidhi Co., Ltd. (“SAKC”)

GPSC and SAKC have a common major shareholder, namely TOP, which holds 80.52% of SAKC’s paid-up registered capital through TOP SOLVENT.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from pipe-rack rental - Revenue	1.38	GPSC entered a pipe-rack rental agreement with SAKC, with prices and terms considered normal business practice.

9.2.1.25 TOP SPP Co., Ltd. (“TOP SPP”)

GPSC and TOP SPP have a common major shareholder, namely Thai Oil Plc (TOP), which holds 99.99% of TOP SPP’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on reserve power supply - Expenses - Payable	1.37 0.09	Backup power for the power plant in case of power generation interruption, with prices and terms considered normal business practice.

9.2.1.26 PTT Exploration and Production Plc (“PTTEP”)

GPSC and PTTEP have a common major shareholder, namely PTT, which holds 63.79% of PTTEP’s paid-up registered capital, and have a common director in Mr. Wuttikorn Stithit.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from engineering design, procurement and construction (EPC) service - Revenue	3.51	GPSC Group entered an agreement with PTTEP to provide EPC services, with prices and terms considered normal business practice.
Expenses on business project development - Expenses	8.56	PTTEP entered an agreement with GPSC to develop business projects, with prices and terms considered normal business practice.
Expenses on office space rental, water and electricity bills, and central utilities - Expenses - Interest on financial lease agreement - Deposit	0.44 0.05 2.32	GPSC rented additional office space belonging to PTTEP in EnCo to house its headquarters to expand its Bangkok office. The rental followed the rates set under an agreement with PTTEP, considered normal business practice.

9.2.1.27 PTTEP Services Co., Ltd. (“PTTEP Services”)

GPSC and PTTEP Services have a common major shareholder, namely PTT, which wholly owns PTTEP Services through PTTEP.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Consulting services for the battery plant construction project - Expenses	3.50	GPSC hired an expert consultant from PTTEP Services to support the construction of the Battery Plant Project. The prices and terms specified in the agreement were considered normal business practice.

9.2.1.28 PTT Oil and Retail Business Plc (“OR”)

GPSC and OR have a common major shareholder, namely PTT, which holds 75.00% of PTTOR’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power - Revenue	0.75	GPSC Group and OR entered a power purchase agreement with prices and terms that followed the same guidelines as those for other customers, both related and unrelated to GPSC.
Income from engineering design, procurement and construction (EPC) service - Revenue - Receivable	217.21 106.77	GPSC Group entered an agreement with OR to provide EPC services, with prices and terms considered normal business practice.
Expenses on lubricants - Expenses - Payable	0.47 1.20	GPSC purchased lubricants for its operation, with prices and terms considered normal business practice.
Expenses on fuels - Expenses - Payable	4,405.68 352.34	GPSC purchased diesel for use in production, with prices and terms considered normal business practice.

9.2.1.29 PTT Retail Management Co., Ltd. (“PTTRM”)

GPSC and PTTRM have a common major shareholder, namely PTT, which holds 75.00% of PTTRM’s paid-up registered capital through OR.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on purchase of goods - Expenses	0.06	GPSC Group purchased general products, considered normal business practice.

9.2.1.30 GC Estate Co., Ltd. (“GCEC”)

GPSC and GCEC have a common major shareholder, namely GC, which wholly owns GCEC.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on industrial water		GPSC bought industrial water, with prices and terms considered normal business practice.
- Expenses	28.08	
- Payable	2.37	
Expenses on the right and land use fee for laying pipes for receiving and draining effluents		Cost of the right and land use fees for laying pipes for receiving and draining effluents in support of the Central Utility Plant at a price and on terms following an agreement, considered normal business practice.
- Expenses	5.59	
- Interest payment on financial lease agreement	3.09	
Expenses on facilities maintenance		GPSC paid for facilities maintenance in the Asia Industrial Estate, where its Central Utility Plant was located. Prices and terms followed an agreement, considered normal business practice.
- Expenses	1.21	

9.2.1.31 NPC S&E Security Guard Co., Ltd. (“NPCSG”)

GPSC and NPCSG have a common major shareholder, namely GC, which wholly owns NPCSG.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on security service		GPSC Group paid NPCSG for security service at a price and under contractual terms considered normal business practice.
- Expenses	48.86	
- Payable	11.77	

9.2.1.32 GC-M PTA Co., Ltd. (“GCMPTA”)

GPSC and GCMPTA have a common major shareholder, namely GC, which holds 74.00% of GCMPTA's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power and steam		GPSC Group and GCMPTA entered individual sales agreements of each product, with prices and terms considered normal business practice.
- Revenue	765.39	
- Receivable	76.69	
Other expenses for pipe-rack rental		GPSC Group rented pipe-racks from GCMPTA at a price and under terms and conditions considered normal business practice. GPSC made payment in advance and was booked as a fee for the long-term right to use the asset; however, expense was gradually booked throughout the contract period.
- Expenses	0.08	

9.2.1.33 GC Polyols Co., Ltd. (“GCP”)

GPSC and GCP have a common major shareholder, namely GC, which holds 82.10% of GCP's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam, industrial water, and nitrogen		GPSC and GCP entered individual sales agreements of each product, with prices and terms considered normal business practice.
- Revenue	172.28	
- Receivable	31.36	
Other income from pipe-rack rental		GPSC leased out its pipe-racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.
- Revenue	1.48	

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Advance income from sale of power under Minimum Take-or-Pay terms - Advance revenue	56.02	Since the annual actual value of product purchase was lower than the minimum value specified in the contract, GPSC requested advance payment (Minimum Take-or-Pay: MTOP) from GCP. If the purchase volume exceeds the minimum volume specified in the contract within the agreed period, GCP can seek refund of such advance payment commensurate with the excess volume consumed. GPSC will book the remaining MTOP as the revenue for the year if GCP is unable to consume power over the minimum volume.

9.2.1.34 GC Oxirane Co., Ltd. ("GCO")

GPSC and GCO have a common major shareholder, namely GC, which wholly owns GCO.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power, steam, industrial water, and nitrogen - Revenue - Receivable	1,303.65 95.33	GPSC and GCO entered individual sales agreements of each product, with prices and terms considered normal business practice.
Other income from pipe-rack rental - Revenue	0.64	GPSC leased out its pipe-racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.

9.2.1.35 Thai PET Resin Co., Ltd. (“TPRC”)

GPSC and TPRC have a common major shareholder, namely GC, which holds 74.00% of TPRC’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power		GPSC Group and TPRC entered power purchase agreement, with prices and terms considered normal business practice.
- Revenue	109.34	
- Receivable	11.23	

9.2.1.36 Tiger Energy Trading Pte. Ltd. (“TET”)

GPSC and TET have a common major shareholder, namely PTT, which wholly owns TET.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on coal		GPSC Group bought coal for their processes, with prices and terms considered normal business practice.
- Expenses	2,349.72	

9.2.1.37 PTT MCC Biochem Co., Ltd. (“PTTMCC”)

GPSC and PTTMCC have a common major shareholder, namely GC, which holds 50.00% of PTTMCC’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power		GPSC and PTTMCC entered power purchase agreement, with prices and terms considered normal business practice.
- Revenue	55.86	
- Receivable	6.02	

9.2.1.38 Business Professional Solutions Co., Ltd. (“BPS”)

GPSC and BPS have a common major shareholder, namely PTT, which wholly owns BPS through BSA.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on the staff outsourcing service		GPSC Group hired BPS to provide outsourcing services of personnel to fit GPSC's objectives, with prices and terms considered normal business practice.
- Expenses	3.69	
- Payable	3.29	

9.2.1.39 PTT Energy Solutions Co., Ltd. (“PTTES”)

GPSC and PTTES have common major shareholders, namely PTT, GC, and TOP, holding 40.00%, 20.00%, and 20.00% of PTTES's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on consultation services		GPSC Group sought/hired expertise from PTTES, with prices and terms considered normal business practice.
- Expenses	4.20	

9.2.1.40 Global Renewable Power Co., Ltd. (“GRP”)

GPSC and GRP have a common major shareholder, namely PTT, which holds 50.00% of GRP's paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from shared services		GPSC provided shared services to GRP in support of GRP's business, with prices and terms considered normal business practice.
- Revenue	0.14	
Loans		GRP received financial assistance from GPSC at an interest rate comparable to rates for loans issued by commercial banks, with comparable payment periods and terms.
- Interest earned	30.24	
- Receivable	12.46	

9.2.1.41 Global Renewable Power Operating Co., Ltd. (“GRPO”)

GPSC and GRPO have a common major shareholder, namely PTT, which holds 50.00% of GRPO’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Transaction description		GRPO entered an agreement with GPSC Group to receive operation and maintenance services for the solar rooftop PV system with prices and terms considered normal business practice.
Expense on solar farm maintenance		
- Expenses	2.47	
- Payable	1.38	

9.2.1.42 P.P. Solar Co., Ltd. (“PPS”)

GPSC and PPS have a common major shareholder, namely PTT, which holds 50.00% of PPS’s paid-up registered capital through GRP.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from engineering design, procurement and construction (EPC) service		GPSC Group entered an agreement with PPS to provide EPC services, with prices and terms considered normal business practice.
- Revenue	0.67	

9.2.1.43 N.P.S. Stargroup Co., Ltd. (“NPS”)

GPSC and NPS have a common major shareholder, namely PTT, which holds 50.00% of NPS’s paid-up registered capital through GRP.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from engineering design, procurement and construction (EPC) services		GPSC Group entered an agreement with NPS to provide EPC services, with prices and terms considered normal business practice.
- Revenue	18.35	

9.2.1.44 Global Renewable Power Co., Ltd. 1 (“GRP1”)

GPSC and GRP1 have a common major shareholder, namely PTT, which holds 50.00% of GRP1’s paid-up registered capital through GRP.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Loans		
- Loans	585.00	
- Interest earned	8.50	GRP received financial assistance from GPSC Group at an interest rate comparable to the interest rate for loans issued by commercial banks, with comparable payment period and terms.
Income from consultation services		
- Revenue	73.38	GPSC provided consultation services to GRP1 at rates and under terms considered normal business practice.

9.2.1.45 Kuraray GC Advanced Materials Co., Ltd. (“KGC”)

GPSC and KGC have a common major shareholder, namely PTT, which holds 33.40% of KGC’s paid-up registered capital through GC.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power		
- Revenue	153.29	
- Receivable	30.61	GPSC and KGC entered power purchase agreement, with prices and terms considered normal business practice.
Other income from pipe-rack rental		
- Revenue	0.33	
- Advance revenue	11.95	GPSC leased out its pipe-racks at a price and under terms and conditions considered normal business practice. Payment was made in advance and was booked as a fee for the long-term right to use the asset; however, income was gradually booked throughout the contract period.

9.2.1.46 ENVICCO Limited (“ENVICCO”)

ENVICCO have a major shareholder, namely GC, which holds 70.00% of ENVICCO’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power and steam		GPSC and ENVICCO entered power and steam purchase agreements, with prices and terms considered normal business practice.
- Revenue	56.18	
- Receivable	5.47	
Advance income from sale of power under Minimum Take-or-Pay terms		Since the annual actual value of product purchase was lower than the minimum value specified in the contract, GPSC requested advance payment (Minimum Take-or-Pay: MTOP) from ENVICCO. If the purchase volume exceeds the minimum volume specified in the contract within the agreed period, ENVICCO can seek refund of such advance payment commensurate with the excess volume consumed. GPSC will book the remaining MTOP as the revenue for the year if ENVICCO is unable to consume power over the minimum volume.
- Advance revenue	1.73	

9.2.1.47 IRPC Technology Co., Ltd. (“IRPC Technology”)

GPSC and IRPC Technology have a common major shareholder, namely PTT, which holds 99.99% of IRPC Technology’s paid-up registered capital through IRPC.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from sale of power		GPSC Group and IRPC Technology entered power purchase agreements, with prices and terms considered normal business practice.
- Revenue	1.73	
- Receivable	0.18	

9.2.1.48 EVME PLUS Co., Ltd. (“EVME”)

GPSC and EVME have a common major shareholder, namely PTT, which wholly owns EVME through Arun Plus.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on EV rentals		GPSC rented electric vehicles from EVME, with prices and terms considered normal business practice.
- Payable	0.12	
- Interest payment on financial lease agreement	0.06	

9.2.1.49 Nuovo Plus Co., Ltd. (“Nuovo Plus”)

GPSC and Nuovo Plus have a common major shareholder, namely PTT, which holds 51.00% of Nuovo Plus’s paid-up registered capital through Arun Plus.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Income from operations		GPSC paid for water, electricity, and tax for Nuovo Plus to support its operations, with prices and terms considered normal business practice.
- Revenue	5.25	
- Receivable	1.61	
Transfer of assets		GPSC transferred assets to Nuovo Plus. Disposed transactions concerned related-party assets or services to set up the joint venture. GPSC’s proposed rates were the median of fair values based on project costs.
- Revenue	435.01	
- Receivable	9.72	
- Payable	0.63	
Expenses on consultation services		GPSC hired an expert consultant from Nuovo Plus to support its operations, with prices and terms considered normal business practice.
- Expenses	0.59	

9.2.1.50 Sarn Palung Social Enterprise Co., Ltd. (“SPE”)

GPSC and SPE have a common major shareholder, namely PTT, which holds 20.00% of SPE’s paid-up registered capital.

Transaction description	Connected transaction value for the year ended December 31, 2022 (THB million)	Justification and sensibility
Expenses on the installation of a solar power system	0.63	GPSC supported PTT Group’s social enterprise, joining in the resolution of problems facing communities, society, and the environment while advocating local labor hiring in line with PTT Group’s approach.

9.2.2 Approval Measures and Procedures for Connected Transactions

For connected transactions involving GPSC and/or its subsidiaries with potential parties of conflict, vested interests, or potential future conflicts of interest, the Audit Committee provides its views on the justification of transaction engagement and the price sensibility of such transactions. The committee's aim is to ensure that the terms involved follow the normal course of business, that third-party price comparison or market price comparison is made, that prices or terms of such transactions at the same level exist for third parties, or that such transaction engagement can apparently contain sensible or fair prices or terms, or all of these. If the Audit Committee cannot scrutinize potential connected transactions, GPSC may arrange for an independent expert or its own external auditor to comment on such transactions in support of decisions by the Board, the Audit Committee, or the shareholders, as seen fit. The essential guidelines for such scrutiny are:

1. **Product sales prices or service fees:** These must be normal-business transactions or those in support of normal businesses. Prices and commercial terms must at arm's length for all customers, both related and unrelated to GPSC.
2. **Product purchase prices or service fees:** These must be normal business transactions or those in support of normal businesses. Prices and commercial terms must be set under compatible criteria to those charged by the business partners in question to other customers. Finally, engagement in such transactions must not compromise GPSC's interests.
3. **Asset transactions:** These could periodically arise as needed and as seen suitable, including acquisition of businesses to grow business under GPSC's investment plans and expansion plans. In engaging in such transactions, management or independent experts, or both (as seen fit), assess and comment on the sensibility of prices and commercial terms involved.

As for the approval of connected transactions, those potential parties of conflict or vested interests have no voting rights on transaction approval. This move ensures that such engagement does not transfer or siphon interests between GPSC and its shareholders. Rather, the transactions must be in all shareholders' best interests. GPSC will disclose connected transactions in the notes to the audited financial statements, countersigned by the external auditor in the Annual Information Form / Annual Report (Form 56-1 One Report).

GPSC complies with the laws, regulations, and procedures of SEC, the Capital Market Supervisory Board, and SET on connected transactions, related-party transactions, and acquisition or disposal of assets under applicable rules for listed companies.

Independent Directors' Views

Independent directors concur with the Board of Director's views.

9.2.3 Policy for Connected Transactions

1. GPSC's directors and management prepare reports on their individual vested interests with related parties and notify the company for use as reference for acting under applicable requirements for connected transactions.
2. Avoid engagement in connected transactions with potential conflicts of interest.
3. If a connected transaction proves unavoidable, GPSC must follow the procedures and comply with applicable laws, which include those criteria set by SEC and SET.
4. Set arm's-length prices and terms for connected transactions that are fair, sensible, and in the best interests of GPSC and all shareholders. If such prices are unavailable, GPSC must compare prices or service fees with third-party sources under the same or similar terms.

5. Those with vested interests in connected transactions cannot approve or vote on them.
6. In scrutinizing connected transactions, GPSC may appoint an independent assessor to evaluate and compare prices for significant ones to ensure that such connected transactions are sensible and in the best interests of GPSC and all shareholders.

9.2.4 Trends for Connected Transactions with Potential Parties of Conflict

For future connected transactions, GPSC must comply with all laws on securities and exchanges, regulations, announcements, directives, or requirements of the Capital Market Supervisory Board, SEC, and SET. Engagement in such transactions must not produce benefit transfers or siphoning of interests between GPSC or its shareholders, or both, but must be in the best interests of GPSC and all shareholders.

For routine transactions likely to regularly occur, GPSC must follow the criteria and approaches of general commercial practices, with price references and terms that are suitable and fair, sensible, and auditable. Such engagement must follow principles on agreements with general commercial terms approved by the Board. To this end, management must prepare a summary of connected transactions for reporting to the Audit Committee each year.

Disclosure of GPSC's connected transactions must comply with all laws and regulations set by SEC and SET.

GPSC's connected transactions in the last three years are available for shareholders and/or investors in the Annual Reports or Form 56-1 on GPSC's website <https://www.gpscgroup.com/th/investor-relations/downloads/one-reports>.



Attachment

Attachment 1

Details about Directors, Executives,
Chief Financial Officer, Chief Accountant,
and Company Secretary

Attachment 2

Details of Directors in the Subsidiary Companies,
as of December 31, 2022

Attachment 3

Details about the Chief of Internal Audit

Attachment 4

Details of Operating Asset

Attachment 5

Full version of the Corporate Governance
Policy and Guidelines

Attachment 6

Report of the Audit Committee





Attachment 1

Details about Directors, Executives, Chief Financial Officer, Chief Accountant, and Company Secretary

Mr. Pailin Chuchottaworn

Chairman of the Board / Independent Director (Non-Executive Director)

Date Appointed April 2, 2021 (2nd Term)
September 1, 2019 (1st Term)

Age 66 years old

Education

- Doctor of Engineering in Chemical Engineering from Tokyo Institute of Technology Japan (Japanese government scholarship), 1985
- Master of Engineering in Chemical Engineering from Tokyo Institute of Technology Japan (Japanese government scholarship), 1982
- Bachelor of Engineering in Chemical Engineering with 1st Class Honor, Chulalongkorn University, 1979

Training Record with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 51/2004)
- Director Accreditation Program (DAP 24/2004)
- Finance for Non-Finance Directors (FND 14/2004)
- Anti-corruption for Executive Program (ACEP 4/2012)

Other Training Record

- Certificate in Top Executives in the Energy Education Program (Class of 1st), Thailand Energy Academy (TEA)
- Corporate Governance Program for Directors and Executives of State Enterprises and Public Organizations (Class of 7th), King Prajadhipok's Institute
- Diploma, The Joint State-Private Sector Course, National Defence College (Class of 22nd), National Defence College
- Top Executive Program (Class of 8th), Capital Market Academy (CMA)
- Top Executive Program in Commerce and Trade (TEPCoT) (Class of 1st), Commerce Academy
- PTT-GE Executive Leadership Program 2008, GE Crotonville, U.S.A.

- NIDA-Wharton Executive Leadership Program 2007, Wharton University of Pennsylvania, U.S.A.
- Industrial Liaison Program (ILP) 2005, Massachusetts Institute of Technology, U.S.A.

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand 2 Organizations

- Independent Director, Chairman of the Technology Committee and Member of the Executive SCB X Public Company Limited
- Independent Director (Non-Executive) / Chairman of the Risk Management Committee Thailoil Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

16 Organizations

- Director of SCB 10X Co., Ltd
- Chairman of Vidyasirimedhi Institute of Science and Technology Council
- Chairman of Governing Board Kamnoetvidya Science Academy (KVIS)
- Board, National Higher Education Science Research and Innovation Policy Council
- Chairman, Committee on Economic Steering
- Advisor to the Prime Minister
- Board Member, The Board of Investment of Thailand. (BOI)
- Director of National Electric Vehicle Policy Committee Ministry of Energy
- Advisory Committee of Devawongse Varopakarn Institute of Foreign Affairs (DVIFA)
- Member of Office of the National Economic and Social Development Council
- Chairman of Visup Company Limited
- Chairman of Visai Ai Company Limited
- Expert commissioners of the Public Sector Audit Evaluation Committee, Office of the Public Sector Development Commission
- Chairman of Subcommittee of the Public Sector Audit Evaluation Committee, Office of the Public Sector Development Commission
- Chairman of SCB Datax Co., Ltd.
- Chairman of SCB Tech X Co., Ltd.

Working Experience (5-Year Past Experience)

Sep 19, 2019 - May 31, 2022	Independent Director / Member of the Executive Committee / Member of the Technology Committee / The Siam Commercial Bank Public Company Limited	2017 - Nov 17, 2017	Subcommittee on Personnel Development, Research and Innovation National, Research and Innovation Policy Council
2020 - Apr 30, 2021	Independent Director / Chairman of the Enterprise Risk Management Committee, PTT Public Company Limited	2017 - Nov 17, 2017	Independent Committee for Education Reform
2020 - Apr 14, 2021	Board Member, Oman Oil Company SAOC	2017 - Nov 17, 2017	Expert Member, Board of Directors, Ministry of Digital Economy and Society
2017 - Jul 15, 2019	Deputy Minister of Transport	2017 - Nov 17, 2017	Expert Member, Committee on Education Management Development Collaboration with High-Potential Foreign Higher Education Institutions
Mar 11, 2019 - Jul 15, 2019	Advisor to the Prime Minister	2017 - Nov 17, 2017	Director, Committee National Quality Award, Office Institute for Productivity
2015 - Nov 17, 2017	Director of Thai Institute of Directors	2017 - Nov 17, 2017	Advisor, Chulalongkorn University Council
2015 - Nov 17, 2017	Chairman of VISTEC Council, Vidyasirimedhi Institute	2017	Board of Commissioners, Digital Economy Promotion Agency
2015 - Nov 17, 2017	Chairman of the Board of Governors, Kamnoetvidya Science Academy	2015 - 2017	Member of the Committee for Special Economic Zone Development Bureau of Industrial Potential of the Nation Office of Industrial Economics Ministry of Industry
2016 - Nov 17, 2017	Expert commissioners, Public Organization Development and Promotion Committee		
2016 - Nov 17, 2017	Expert commissioners, The Securities and Exchange Commission	2015 - 2017	Advisor, Sasin Graduate Institute of Business Administration of Chulalongkorn University
2016 - Nov 17, 2017	Expert commissioners, National Research Council of Thailand		
2016 - Jul 31, 2017	Director, Bangkok Bank Public Company Limited	2012 - Jul 31, 2017	Member, Board of Trustees, Mahidol University
2016 - 2017	Director of the Faculty of Economics, Thammasat University		
2017 - Nov 17, 2017	Director, Power of innovation and power of learning		
2017 - Nov 17, 2017	Director of the University Council, Kasetsart University		

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mr. Kurujit Nakornthap

Independent Director / Chairman of the Corporate Governance and Sustainability Committee / Member of the Audit Committee (Non-Executive Director)

Date Appointed June 4, 2020 (2nd Term)
April 3, 2017 (1st Term)

Age 67 years old

Education

- Ph.D. in Petroleum Engineering, University of Oklahoma, U.S.A.
- Master of Engineering in Petroleum Engineering University of Oklahoma, U.S.A.
- Bachelor of Engineering in Petroleum Engineering, University of Oklahoma, U.S.A.

Training Record with Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP 64/2007)
- Audit Committee Program (ACP 32/2010)
- Role of Compensation Committee (RCC 12/2011)
- R-CF-Chairman Forum (R - CF 2/2013)
- Collective Action Against Corruption Conference (C - Conference 1/2014)
- Advance Audit Committee Program (AACP 43/2022)
- Financial Reporting Cases: A Monitoring Guide for Board (RFP 6/2022)
- Outbound Investment (Online) (RFP 8/2022)

Other Training Record

- The National Defence Course (Batch 51), National Defence College
- Senior Judicial Process Administrators (Baw Yaw Saw), Class 24, Judicial Training Institute
- Top Executive Program in Commerce and Trade (TEPCoT) (Batch 3), Commerce Academy, University of the Thai Chamber of Commerce

- Training Course on Administrative Justice for Executives, (Batch 2), Office of the Administrative Courts of Thailand
- Capital Market Academy Leader Program (Batch 13), Capital Market Academy
- Top Executives in the Energy Education Program (Batch 1), Thailand Energy Academy
- Bhumipalung Phandin Course for Executives (Batch 2), Chulalongkorn University
- Civil Service Executive Program: Visionary and Moral Leadership, (Batch 46), Office of the Civil Service Commission
- Senior Executive Program (SEP), (Batch 60), London Business School, United Kingdom
- Training Course on Leadership for Change (Batch 2), Right Livelihood Foundation & Matichon Publishing Group
- Systematic Problem Solving and Decision Making (SPSDM), Office of the Civil Service Commission in cooperation with ACI Consultants Company Limited
- Academic Seminar : Money Laundering
- Seminar : Anti-corruption: Leadership Role of the Board

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand 2 Organizations

- Independent Director, Bound And Beyond Public Company Limited
- Independent Director, NFC Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

3 Organizations

- Executive Director, Petroleum Institute of Thailand Foundation
- Member of the Council of State
- Co-Chairman (Thailand), Malaysia - Thailand Joint Authority

Working Experience (5-Year Past Experience)

Oct, 2015 - Aug, 2017	Chairman of Energy Affairs Committee and Member of the National Reform Steering Assembly (NRSA)
Feb, 2016 - Oct, 2016	Executive Member of the National Research Council of Thailand
Jun, 2015 - Sep, 2015	Permanent Secretary, Ministry of Energy
Oct, 2014 - Jun, 2015	Deputy Permanent Secretary, Ministry of Energy
Oct, 2014 - Sep, 2015	Member of National Reform Steering Assembly
Jul, 2014 - Sep, 2014	Director - General, Department of Mineral Fuels, Ministry of Energy
2011 - 2014/2015	Director and Chairman of the Board, Electricity Generating Authority of Thailand

Shareholding in GPSC (including spouse and minor)

- Self 57,029 shares (0.00020225%)

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Gen. Santipong Thampiya**Independent Director / Chairman of the Nomination and Remuneration Committee (Non-Executive Director)**

Date Appointed April 1, 2022 (1st Term)

Age 60 years old

Education

- Master of Public Administration, Burapha University
- Bachelor of Science, Chulachomklao Royal Military Academy

Training Record with Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP 144/2018)
- Board Nomination Compensation Program (BNCP 14/2022)

Other Training Record

- Capital Market Leader Program, Capital Market Academy
- Command and General Staff College (CGSC), class 74
- The National Defense College, class 59
- Negotiation course, Oxford University
- The Rule of Law for Democracy, Class 8

Current Position in Other Organizations**Listed Company-The Stock Exchange of Thailand**

- None

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)**

- None

Working Experience (5-Year Past Experience)

Present	Retired soldier, Royal Thai Army
2021-2022	Secretary General, Internal Security Operations Command (ISOC)
2021	Chief of Staff, Royal Thai Army
2020	Deputy Chief of Staff, Royal Thai Army
2019	Director of Civil Affairs, Royal Thai Army
2016 - 2019	1 st Army Area Deputy Commander

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mrs. Nicha Hiranburana Thuvatham**Independent Director / Member of the Corporate Governance and Sustainability Committee (Non-Executive Director)**

Date Appointed	April 2, 2021 (2 nd Term) April 3, 2018 (1 st Term)
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Age	55 years old
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Education

- Master's Degree, International Studies, Ohio University, U.S.A. (Foreign Student Scholarship)
- Bachelor of Political Science (Second Class Honors), Chulalongkorn University

Training Record with Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP 164/2019)

Other Training Record

- Senior Management Course - Visionary and Ethical Leadership, Office of the Civil Service Commission
- Advanced Certificate Course in Promotion of Peaceful Society, King Prajadhipok's Institute
- Human Resources Management for Public Sector, Office of the Civil Service Commission
- Public Sector Management Certificate
- The National Defence Course (Batch 64), National Defence College
- Executive Program, Political and Electoral Development Institute (Class 9/2018)

Current Position in Other Organizations**Listed Company-The Stock Exchange of Thailand**

- None

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)****1 Organization**

- Deputy Secretary-General to the Prime Minister for Administrative Affairs, Secretariat of the Prime Minister Office of the Prime Minister

Working Experience (5-Year Past Experience)

March 7, 2016	Deputy Secretary-General to the Prime Minister for Administrative Affairs, Secretariat of the Prime Minister Office of the Prime Minister
	Deputy Director, Prime Minister Delivery Unit
April 1, 2015	Assistant Secretary-General to the Prime Minister
2010 - 2014	Advisor to the Prime Minister on Social, Secretariat of the Prime Minister

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mr. Chalermphol Pensoot**Independent Director / Chairman of the Audit Committee (Non-Executive Director)**

Date Appointed April 1, 2022 (1st Term)

Age 58 years old

Education

- Master of Business Administration Program (Marketing), Sripatum University
- Bachelor of Laws, Dhurakij Pundit University

Training Record with Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP 196/2022)
- Financial Reporting Cases: A Monitoring Guide for Board (RFP 7/2022)

Other Training Record

- Diploma, National Defence College, The National Defence Course Class 56
- 81st The Civil Service Executive Development Program: Visionary and Moral Leadership
- The Training Program "Role of Law for Democracy" Class 9, The College of the Constitutional Court

Current Position in Other Organizations**Listed Company-The Stock Exchange of Thailand**

- None

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)****6 Organizations**

- Qualified director, office of the Prosecutor's Board
- Member of The National Economic and Social Development Council
- Member of EEC Policy committee
- Member of Executive Board, King Prajadhipok's Institute Organization
- Member of GPF Board of Director
- Judicial Administration Commission

Working Experience (5-Year Past Experience)

Present	Director, Budget Bureau
2020	Deputy Director, Budget Bureau
2018	Senior Advisor, Budget Bureau
2017	Director, Economic Sector Budget Preparation 2 Division
2016	Director, Social Sector Budget Preparation 3 Division
2015	Director, Area and Foreign Administration for Integrated Budget Preparation Division, and Director, Budget Preparation Area 2 Division

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mr. Somchai Meesen

Independent Director / Member of the Corporate Governance and Sustainability Committee / Member of the Audit Committee (Non-Executive Director)

Date Appointed June 4, 2020 (1st Term)

Age 54 years old

Education

- Master of Political Science (Politics), Thammasat University
- Bachelor of Arts (History), Chiang Mai University

Training Record with Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP 161/2019)
- Financial Statements for Directors (FSD 45/2022)
- Financial Reporting Cases: A Monitoring Guide for Board (RFP 6/2022)
- Advance Audit Committee Program (AACP 44/2022)

Current Position in Other Organizations**Listed Company-The Stock Exchange of Thailand****1 Organization**

- Director and Vice Chairman of the Executive Committee, Nation Group (Thailand) Public Company Limited

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)****2 Organizations**

- Chairman of the Board – Nation Foundation
- Director - Nation Digital Content Company Limited

Working Experience (5-Year Past Experience)

19 Oct 2022 - Present	Board of Directors Thai Parcels Public Company Limited
21 Oct 2019 - 15 Sep 2020	Director - Nat Business Connect Company Limited
Feb 2018 - Mar 2020	Chief Executive Officer - Nation Multimedia Group Public Company Limited

Jun 2016 - Dec 2019	Chairman of the Board of Directors, Max Metal Corporation Public Company Limited
Mar 2018 - Aug 2019	Director, Nation International Edutainment Public Company Limited
Feb 2018 - Jan 2019	Vice Chairman of the Board - Nation Broadcasting Corporation Public Company Limited
Jan 2017 - Jun 2018	Director, AQ Estate Public Company Limited
Jan 2017 - Jun 2018	Director, AQ Village Company Limited
Jan 2017 - Jun 2018	Director, Aquarius Estate Company Limited
Jan 2017 - Jun 2018	Director, Baan Chidtara Company Limited
Mar 2017 - Jun 2018	Director, Aquarius Hotels and Resorts Company Limited
Jan 2017 - Dec 2017	Director, Spring News Corporation Company Limited
Jun 2016 - Dec 2017	Managing Director, Thansettakij Multimedia Company Limited

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mr. Noppadol Pinsupa

Director / Member of the Nomination and Remuneration Committee / Chairman of the Risk Management Committee (Non-Executive Director)

Date Appointed April 1, 2022 (2nd Term)
November 1, 2021 (1st Term)

Age 57 years old

Education

- Master of Engineering (Electrical Engineering), Chulalongkorn University
- Bachelor of Engineering (Electrical Engineering), Chulalongkorn University

Training Record with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 146/2011)
- Financial Statements for Directors Program (FSD 12/2011)
- Briefing on International Anti-Corruption... International Cases and Practices (14 October 2015)

Other Training Record

- The Executive Program in Energy Literacy for a Sustainable Future, Class 14/2019, Thailand Energy Academy (TEA)
- Diploma, National Defence College, the National Defence Course Class 60, National Defence College (NDC)
- TIJ Executive Program on the Rule of Law and Development (RoLD Program), 2017, Thailand Institute of Justice (TIJ)
- Capital Market Leader Program (Class 22/2016), Capital Market Academy
- G-20Y Summit 2015, France
- Mitsui-Harvard Business School Global Management Academy 2015 Japan - U.S.A.
- Program for Senior Executive on Justice Administration Batch, Class 19/2014, Judicial Training Institute
- Leadership Development Program III, PTT Leadership and Learning Institute

- Breakthrough Program for Senior Executives International Leading Business School (IMD) Lausanne, Switzerland
- Assessor Training Program, Thailand Quality Award (TQA)

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand 2 Organizations

- Chief Operating Officer Downstream Petroleum Business Group, PTT Public Company Limited
- Acting President and Chief Executive Officer and Director / Member of the Risk Management Committee / and the Secretary to the Board of Directors, Thai Oil Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

- None

Working Experience (5-Year Past Experience)

1 Oct 2022 - Present	Chief Operating Officer Downstream Petroleum Business Group, PTT Public Company Limited	3 Jul 2020 - 30 Nov 2020	Senior Executive Vice President, PTT Public Company Limited, working on a secondment as President and Chief Executive Officer, IRPC Public Company Limited
1 Oct 2021 - 11 Nov 2021	Director to the Nomination & Remuneration Committee, PTT Global Chemical Public Company Limited	1 Feb 2019 - 3 Jul 2020	Senior Executive Vice President, PTT Public Company Limited, working on a secondment as President, IRPC Public Company Limited
2 Jul 2021 - 1 Dec 2022	Director, Arun Plus Company Limited	Feb 2019 - Aug 2019	Chairman, PTT Energy Solutions Company Limited
1 Oct 2021 - 30 Sep 2022	Chief New Business and Infrastructure Officer, PTT Public Company Limited	Oct 2017 - Jan 2019	Chairman, PTT Global LNG Company Limited
1 Dec 2020 - 30 Sep 2021	Senior Executive Vice President, Innovation and Digital, PTT Public Company Limited	2017	Chairman, PTT LNG Company Limited
		Apr 2016 - Jan 2019	Senior Executive Vice President, Gas Business Unit, PTT Public Company Limited
		Oct 2015 - Jan 2019	Director, and Member of the Risk Management Committee, Thai Oil Public Company Limited
		2014 - 2018	Chairman, PTT Natural Gas Distribution Company Limited
		2015 - 2016	Executive Vice President working on Acting Senior Executive Vice President, Gas Business Unit, PTT Public Company Limited

Shareholding in GPSC (including spouse and minor)

- Self 137,300 shares (0.00048693%)

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

M.L. Peekthong Thongyai**Director (Non-Executive Director)****Date Appointed** December 1, 2022 (1st Term)**Age** 55 years old**Education**

- Master of Business Administration (Finance), SASIN Graduate Institute of Business Administration of Chulalongkorn University
- Bachelor of Science, Petroleum Engineering, The University of Texas at Austin, USA

Training Record with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 15/2002)

Other Training Record

- APAC Energy Transition Leadership Program (A-ETLP/2022), GE Crotonville, USA
- Leadership Development Program III/2019, PTT Leadership and Learning Institute
- Leadership Development Program II/2014, PTT Leadership and Learning Institute

Current Positions**Listed Company-The Stock Exchange of Thailand****1 Organization**

- Senior Executive Vice President, Gas Business Unit, PTT Public Company Limited

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)****1 Organization**

- Director, PTT Tank Terminal Company Limited

Working Experience (5-Year Past Experience)

1 Oct 2021 - 30 Sep 2022	Senior Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited
1 Oct 2021 - 31 Oct 2022	Director/ Director to the Risk Management Committee, PTT Global Chemical Public Company Limited
17 Sep 2021 - 30 Nov 2022	Director, GPC International Terminal Company Limited
1 Oct 2019 - 30 Sep 2021	Director, Gulf MTP LNG Terminal Company Limited
1 Nov 2016 - 30 Sep 2021	Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited, working on a secondment as Acting Managing Director, PTT Tank Terminal Company Limited
1 Aug 2015 - 31 Oct 2016	Executive Vice President, Policy and Economics, PTT Public Company Limited, working as Manager at Thailand Energy Academy

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its subsidiaries

- None

Mr. Wuttikorn Stithit**Director (Non-Executive Director)**

Date Appointed April 1, 2022 (2nd Term)
April 1, 2019 (1st Term)

Age 58 years old

Education

- Master Degree Master of Business Administration (Finance and Banking), Kasetsart University
- Master Degree M.S.(Science), Ohio University, U.S.A.
- Bachelor Degree Electrical Engineering, King Mongkut's Institute of Technology Ladkrabang

Training Record with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 158/2012)

Other Training Record

- Leadership Development Program 3 (LDP3), PLLI
- Leadership Succession Program (LSP)
- Senior Executive Education Program, SIBA 2017
- Power of the Kingdom Class 4/2015 (Bhumipalung Phandin), Chula Unisearch, Chulalongkorn University
- Leadership Development Program 2 (LDP2), PLLI
- Senior Executive Program, SASIN 2011
- National Defence College of Thailand
- Energy Literacy for a Sustainable Future (TEA Class 16)

Current Position in Other Organizations**Listed Company-The Stock Exchange of Thailand
2 Organizations**

- Chief Operating Officer, Upstream Petroleum and Gas Business Group, PTT Public Company Limited
- Director, PTT Exploration and Production Company Limited

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)****1 Organization**

- Chairman, PTT Global LNG Company Limited

Working Experience (5-Year Past Experience)

- | | |
|--------------------------|--|
| 1 Oct 2022 - Present | Chief Operating Officer, Upstream Petroleum and Gas Business Group, PTT Public Company Limited |
| 1 Feb 2018 - 30 Sep 2022 | Senior Executive Vice President, Gas Business Unit, PTT Public Company Limited |
| 1 Nov 2015 - 31 Jan 2018 | Executive Vice President, Natural Gas Supply & Trading, PTT Public Company Limited |
| 1 Nov 2015 - 31 Oct 2015 | Executive Vice President, Natural Gas Distribution, PTT Public Company Limited |

Shareholding in GPSC (including spouse and minor)

- | | |
|----------|-----------------------------|
| • Self | None |
| • Spouse | 10,000 shares (0.00003546%) |
| • Total | 10,000 shares (0.00003546%) |

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- Mrs. Sasitorn Stithit, Mr. Wuttikorn Stithit's spouse is serving as PTT's Vice President, Corporate Governance and Compliance

Mr. Kongkrapan Intarajang

Director / Member of the Risk Management Committee (Non-Executive Director)

Date Appointed April 1, 2022 (3rd Term)
April 1, 2019 (2nd Term)
August 15, 2017 (1st Term)

Age 55 years old

Education

- Doctor of Philosophy (Ph.D.) in Chemical Engineering, University of Houston, U.S.A.
- Bachelor of Engineering (Chemical Engineering) (Second-class Honors), Chulalongkorn University

Training Record with Thai Institute of Directors (IOD)

- Role of the Chairman Program (RCP 21/2009)
- Director Certification Program (DCP 119/2009)

Other Training Record

- Executive Development Training Program, The Royal Thai Police
- Capital Market Leader Program (Class 30), Capital Market Academy
- Leadership Development Program (LDP 3) Class 4, PTT Leadership and Learning Institute
- The Executive Program in Energy Literacy for a Sustainable Future, Class 14, Thailand Energy Academy (TEA)
- Diploma, National Defence College, The National Defence Course Class 60, National Defence College of Thailand (NDC)
- Breakthrough Program for Senior Executives, IMD Business School

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand 3 Organizations

- Director and Secretary to the Board of Directors / Director to the Risk Management Committee and Chief Executive Officer & President, PTT Global Chemical Public Company Limited
- Senior Executive Vice President reporting to Chief Operating Officer, Downstream Petroleum Business Group, PTT Public Company Limited
- Chairman, Global Green Chemicals Public Company Limited

Other Organizations / Companies (Not Listed in the Stock Exchange of Thailand)

14 Organizations

- Director and Member of The Nomination Committee and Remunerating Committee, Thai Institute of Directors Association (IOD)
- Advisor to the Board of Directors, Institute of Small and Medium Enterprises Industry (SMI) Federation of Thai Industries
- Chairperson of Advisory Committee in relation to its investment in Allnex, PTTGC International (Netherlands) B.V.
- Chairman, PTTGC International (Netherlands) B.V.
- Chairman, PTTGC International Private Limited
- Director, Association of Capital Market Academy Alumni
- Director, The Federation of Thai Industries
- Vice President (Supporting), Thailand Swimming Association
- Honorary Member of Vidyasirimedhi Institue Council
- Member of Trustee, The Petroleum Institute of Thailand (PTIT)
- Council of Trustee, Thailand Business Council of Sustainable Development (TBCSD)
- Executive Director, Thailand Energy Academy
- Director, Kamnoetvidya Science Academy (KVIS)
- Co-Chairman, France – Thailand Business Forum

Working Experience (5-Year Past Experience)

1 Oct 2020 - 31 Mar 2022	Advisor of the Member Relations, the Federation of Thai Industries	Nov 2008 - Sep 2019	Director, Emery Specialty Chemicals Sdn. Bhd.
1 Sep 2020 - 15 Feb 2022	Chairman, GC International Corporation	Sep 2014 - Dec 2018	Director, NatureWorks LLC
1 Sep 2015 - 15 Feb 2022	Chairman, PTTGC America LLC	Sep 2014 - Dec 2018	Director/Vice President, PTTGC International (USA) Inc.
1 Jul 2015 - 15 Feb 2022	Chairman, PTTGC America Corporation	Oct 2014 - Mar 2017	Executive Vice President - International Business Operations, PTT Global Chemical Public Company Limited
24 Aug 2020 - 25 Mar 2021	Committee Member of Sustainable Energy Foundation		
31 Oct 2019 - Aug 2020	Director, GC International 31 Corporation		
9 Sep 2008 - 31 Aug 2020	Director, PTTGC International Private Limited		
6 Nov 2019 - 20 Oct 2020	Director, Global Green Chemicals Public Company Limited		
May 2017 - Jan 2020	Director, Thai Tank Terminal Limited		
Apr 2017 - Sep 2019	Chief Operating Officer - Upstream Petrochemical Business, PTT Global Chemical Public Company Limited		
Jul 2015 - Sep 2019	Director and President & CEO, PTTGC America Corporation		
Apr 2015 - Sep 2019	Director, PTTGC Innovation America Corporation		
Feb 2015 - Sep 2019	Director, PTTGC International (Netherlands) B.V.		
Jan 2015 - Sep 2019	Director, Vencorex Holding		
Nov 2008 - Sep 2019	Director, Emery Oleochemicals (M) Sdn. Bhd.		

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mr. Lavaron Sangsnit

Director / Member of the Corporate Governance and Sustainability Committee (Non-Executive Director)

Date Appointed September 1, 2021 (1st Term)

Age 55 years old

Education

- M.S. (Economic Policy and Planning), Northeastern University, U.S.A.
- Bachelor of Economics Chulalongkorn University

Training Record with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 205/2015)

Other Training Record

- The Executive Program in Energy Literacy for a Sustainable Future Class of 12 Thailand Energy Academy (TEA)
- Capital Market Academy Programs Class of 25, Capital Market Academy
- Thailand National Defense College Class of 58, National Defence studies Institute
- The Rules of Law for Democracy Training Program Class 10, College of the Constitutional Court

Current Positions**Listed Company-The Stock Exchange of Thailand****1 Organization**

- Director of Krungthai Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

2 Organization

- Chairman of the Board of the Government Lottery
- Director General of the Revenue Department

Working Experience (5-Year Past Experience)

21 May 2022 - Present	Director General of The Revenue Department
2020 - 20 May 2022	Director General of The Excise Department
2018 - 2020	Director General of the Fiscal Policy Office
2016 - 2018	Inspector General of Ministry of Finance
2013 - 2016	Financial Policy Advisor
2012 - 2013	Deputy Director General of the Fiscal Policy Office

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its subsidiaries

- None

Miss Pannalin Mahawongtikul

Director (Non-Executive Director)

Date Appointed December 1, 2022 (1st Term)

Age 58 years old

Education

- Master of Business Administration (M.B.A.), Thammasat University, Thailand
- Thailand Bachelor of Science in Accounting (B.B.A.), Thammasat University, Thailand

Training Record with Thai Institute of Directors (IOD)

- In-house PTTEP, Corporate Governance: Regulation and Disclosure, Director Accreditation Program (CG PTTEP/2017)
- Director Certification Program (DCP 279/2019)
- Strategic Board Master Class (SBM 9/2020)
- Risk Management Program for Corporate Leaders (RCL 28/2022)

Other Training Record

- Executive Development Program (EDP) (Class of 2nd), Thai Listed Companies Association
- PTT-HBS Leadership Development Program II, Harvard Business School, U.S.A.
- NIDA-Wharton Executive Leadership Program (ELP), The Wharton School, University of Pennsylvania, U.S.A.
- Leadership Development Program (LDP) III, PTT Leadership and Learning Institute (PLLI)
- CMA-Greater Mekong Subregion (CMA-GMS), (Class of 1st), Capital Market Academy
- Leadership Succession Program (LSP), (Class of 6th), Institute of Research and Development for Public Enterprises

- Executive Program for Senior Management (EX-PSM), (Class of 3rd), Fiscal Policy Research Institute Foundation
- Capital Market Academy Leader Program, (Class of 24th), Capital Market Academy (CMA)
- The Resilient Leader (TIJ Executive Program on the Rule of Law and Development), RoLD 2020
- E-Learning CFO's Refresher Course, The Stock Exchange of Thailand
- Certificate, Executive Program in Energy Literacy for a Sustainable Future, (Class of 15th), Thailand Energy Academy (TEA)

Current Positions

Listed Company-The Stock Exchange of Thailand 2 Organizations

- Chief Financial Officer, PTT Public Company Limited
- Director / Member of the Risk Management Committee, Thai Oil Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

7 Organizations

- Executive Director, Thailand Energy Academy
- Club President, Thai Investor Relations Club
- Member of Vidyasirimedhi Institute of Science and Technology Council For short: Member of VISTEC Council
- Member of VISTEC Executive Committee
- Chairman of VISTEC Finance and Budget Sub-Committee
- Director / Member of the Audit Committee, Thai Listed Companies Association (TLCA)
- Director / Lotus Pharmaceutical Co. Ltd. (Listed Company in Taiwan)

Working Experience (5-Year Past Experience)

Oct 1, 2018 - Present	Chief Financial Officer, PTT Public Company Limited
Jan 1, 2016 - Sep 30, 2018	PTT Plc secondment to PTT Exploration and Production Plc as Senior Executive Vice President, Finance and Accounting Group
Feb 1, 2015 - Dec 31, 2015	Executive Vice President, Financial and Accounting Group, PTT Public Company Limited
Aug 1, 2014 - Jan 31, 2015	(Act.) Executive Vice President, Financial and Accounting Group, PTT Public Company Limited

Shareholding in GPSC (including spouse and minor)

- Self 9,409 shares (0.00033368%)

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its subsidiaries

- None

Mr. Worawat Pitayasiri**Director / Secretary to the Board / Member of the Risk Management Committee / President and Chief Executive Officer (Executive Director)**

Date Appointed April 2, 2021 (2nd Term)
December 1, 2020 (1st Term)

Age 56 years old

Education

- Master of Business Administration, Thammasart University
- Bachelor of Engineering (Chemical Engineering), Chulalongkorn University

Training Record with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 158/2012)

Other Training Record

- National Defense Course (NDC) Class 64, Thailand National Defence College
- Advanced Certificate Course Politics and Governance in Democratic Systems for High Level Executives, Class 22nd, King Prajadhipok's Institute
- NIDA-Wharton Executive Leadership Program, Class of 2009, The Wharton School of the University of Pennsylvania, USA
- Asia Petrochemical Industry Conference (APIC), Class 2/2017, Japan Petrochemicals Industry Association
- Senior Executive Program (SEP), Class 26/2012, Sasin Graduate Institute of Business Administration, Chulalongkorn University
- PTT Group VP Leadership Development Program

Current Positions

Listed Company-The Stock Exchange of Thailand

1 Organization

- Senior Executive Vice President, PTT Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

14 Organizations

- Director, Xayaburi Power Company Limited
- Director, Ratchaburi Power Company Limited
- Director, Glow Energy Public Company Limited
- Director, Glow Co., Ltd.
- Director, Glow SPP 2 Co., Ltd.
- Director, Glow SPP 3 Co., Ltd.
- Director, Glow IPP 2 Holding Co., Ltd.
- Director, Glow SPP 11 Co., Ltd.
- Director, Glow IPP Co., Ltd.
- Director, Global Renewable Power Company Limited
- Director, NUOVO PLUS Company Limited
- Director / Executive Director, Board of The Federation of Thai Industries (FTI) (Term 2022-2024)
- Vice President, Committee of the Institute of Industrial Energy (Term 2022 - 2024),
- Executive Director, Thailand Energy Academy

Working Experience (5-Year Past Experience)

July 2015 -	President, PTT MCC Biochem
March 2016	Company Limited
March 2016 -	Executive Vice President,
September 2016	Downstream Business Group
	Collaboration, PTT Public
	Company Limited
October 2016 -	Executive Vice President,
September 2018	Downstream Business
	Group Planning, PTT Public
	Company Limited
September 2018 -	Senior Executive Vice
November 2020	President, Innovation and
	Digital, PTT

Shareholding in GPSC (including spouse and minor)

- None

Qualified According to Related Laws and Does Not Have Prohibited Qualifications

- Qualified

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Details about Management Executives

Mr. Sirimet Leepagorn

Chief Operating Officer

Date Appointed November 1, 2021

Age 55 years old

Education

- Master of Business Administration, Burapha University
- Bachelor of Science (Chemistry), Chiang Mai University

Training Record with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 205/2015),
- Strategic Board Master Class (SBM 6/2019), Thai Institute of Directors
- Boardroom for Business Breakthrough, Director Refreshment Program (DRP1/2021), Thai Institute of Directors
- Leading Your Business through Uncertainties, Director Refreshment Program (DRP2/2021), Thai Institute of Directors
- Lessons Learnt from Financial Cases: How Board should React, Director Refreshment Program (DRP3/2021), Thai Institute of Directors
- Role of the Chairman Program 50 (RCP50/2022), Thai Institute of Directors

Other Training Record

- PTT Leadership Development Program (LDP II), Harvard Business School
- GE Leadership Development Program, New York, USA
- Senior Executive Program, Sasin Executive Education
- Advanced Management Program 3 (AMP3) Business & People Management Module 2019
- EXCLUSIVE MEDIA TRAINING 2019
- Authentic You, Authentic Leader 2019
- Leadership Development Program 3 (LDP 3)
- Coaching for Leaders 2019
- Brain 4, The Federation of Thai Industries 2020

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand 1 Organization

- Executive Vice President, PTT Public Company Limited

Other Organizations / Companies (Not Listed in the Stock Exchange of Thailand)

16 Organizations

- Chairman, IRPC Clean Power Company Limited
- Chairman, GHECO-One Company Limited
- Chairman, Glow IPP 3 Company Limited
- Chairman, Houay Ho Thai Company Limited
- Chairman, Houay Ho Power Company Limited
- Director, Glow Energy Public Company Limited
- Director, Glow Company Limited
- Director, Glow SPP 2 Company Limited
- Director, Glow SPP 3 Company Limited
- Director, Glow SPP 11 Company Limited
- Director, Glow IPP Company Limited
- Director, Glow IPP 2 Holding Company Limited
- Director, Global Renewable Power Company Limited
- Director, Combined Heat and Power Producing Company Limited
- Director, Nava Nakorn Electricity Generating Company Limited
- Director, GPSC Holding (Thailand) Company Limited

Working Experience (5-Years Past Experience)

Sep 2021 - Apr 2022	Director, Global Renewable Synergy Taiwan Company Limited
Jun 2021 - Apr 2022	Director, Global Renewable Synergy Company Limited
Feb 2020 - Mar 2022	Director, Xayaburi Power Company Limited
May 2019 - Mar 2021	Director, Energy Recovery Unit Company Limited
Dec 2018 - Apr 2022	Chairman, Global Renewable Power Operating Company Limited
Dec 2018 - Apr 2022	Chairman, N.P.S. Stargroup Company Limited

Dec 2018 - Apr 2022	Chairman, World X Change Asia Company Limited
Dec 2018 - Apr 2022	Chairman, P.P. Solar Company Limited
Dec 2018 - Mar 2022	Chairman, Nam Lik 1 Power Company Limited
Apr 2020 - Oct 2021	Executive Vice President Corporate Strategy and Subsidiary Management, Global Power Synergy Public Company Limited
Oct 2018 - Mar 2020	Executive Vice President, Asset Management, Global Power Synergy Public Company Limited
Jan 2018 - Sep 2018	Executive Vice President, Strategic Transformation and Result Deliver, IRPC Public Company Limited
Jan 2016 - Dec 2017	EVEREST Project Director, IRPC Public Company Limited
Sep 2014 - Sep 2018	Director, IRPC Clean Power Company Limited
Jan 2014 - Jun 2018	Acting President, IRPC Clean Power Company Limited
Oct 2014 - Oct 2015	Executive Vice President, Corporate Business Planning, IRPC Public Company Limited
July 2013 - Sep 2014	Acting Executive Vice President, Corporate Business Planning, IRPC Public Company Limited
Feb 2012 - Sep 2018	Director, IRPC Oil Company Limited

Shareholding in GPSC (including spouse and minor)

- None

Family Relation with Directors, other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mr. Thitipong Jurapornsiridee

Chief Financial Officer

Date Appointed January 1, 2021

Age 53 years old

Education

- Master of Business Administration, Thammasat University
- Bachelor of Engineering (Electrical Engineering), Chulalongkorn University

Training Record with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 267/2018)

Current Position in Other Organizations

1 Organization

- Executive Vice President, PTT Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

15 Organizations

- Director, IRPC Clean Power Company Limited
- Director, Nam Lik 1 Power Company Limited
- Director, Ratchaburi Power Company Limited
- Director, GHECO-ONE Company Limited
- Director, Glow IPP 3 Co., Ltd.
- Director, GPSC Treasury Center (GPSC TC)
- Director, Energy Recovery Unit Company Limited
- Director, Global Renewable Synergy Company Limited
- Director, Combined Heat and Power Producing Company Limited
- Director, Global Renewable Synergy Taiwan Company Limited
- Director, Nuovo Plus Company Limited
- Director, Houay Ho Thai Company Limited
- Director, Houay Ho Power Company Limited
- Director, GPSC Holding (Thailand) Company Limited
- Director, Avaada Energy Private Limited

Working Experience (5-Year Past Experience)

Oct 2020 - Dec 2020	Acting Executive Vice President, Finance and Accounting, PTT Global Chemical Public Company Limited
Jun 2019 - Sep 2020	Senior Vice President, Corporate Finance and Strategy, PTT Global Chemical Public Company Limited
Oct 2011 - Jun 2019	Vice President - Corporate Finance & Investor Relations, PTT Global Chemical Public Company Limited
Jan 2011 - Sep 2019	Director, PTTGC Innovation America Corporation

Shareholding in GPSC (including spouse and minor)

• Self	None
• Spouse	11,500 shares
• Total	11,500 shares

Family Relation with other Directors, Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Remark : Mr. Thitipong Jurapornsiridee was assigned the highest responsibility in accounting and finance.

Mr. Kulapat Permbhusri**Executive Vice President Corporate Strategy and Subsidiary Management**

Date Appointed 1 May 2022

Age 59 years old

Education

- Master of Science in Electrical Engineering, Tufts University, U.S.A
- Bachelor of Science in Electrical Engineering, Boston University, U.S.A
- Bachelor of Science in Physics, Boston College, U.S.A

Training Record with Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP)
- Successful Formulation and Execution of Strategy (SFE)
- Director Certification Program (DCP)

Other Training Record

- PTT Leadership Development Program (LDP II)

Current Position in Other Organizations**Listed Company-The Stock Exchange of Thailand**

- None

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)****15 Organizations**

- Director, Nava Nakorn Electricity Generating Company Limited
- Director, Nam Lik 1 Power Company Limited
- Director, GPSC Holding (Thailand) Company Limited
- Director, Chonburi Clean Energy Company Limited
- Director, Eastern Seaboard Clean Energy Company Limited
- Director, Global Renewable Synergy Company Limited
- Director, Chaibadan Community Power Plant 1 Company Limited

- Director, Chaibadan Community Power Plant 2 Company Limited
- Director, Gheco - One Company Limited
- Director, Bangpa-in Cogeneration Company Limited
- Director, Combined Heat and Power Producing Company Limited
- Director, Glow IPP 3 Company Limited
- Director, Xayaburi Power Company Limited
- Director, Houay Ho Power Company Limited
- Director, Global Renewable Synergy Taiwan Co., Ltd.

Working Experience (5-Year Past Experience)

May 2022 - Present	Executive Vice President Corporate Strategy and Subsidiary Management, Global Power Synergy Public Company Limited
Nov 2021 - May 2022	Acting Executive Vice President Corporate Strategy and Subsidiary Management, Global Power Synergy Public Company Limited
2017 - 2021	Senior Vice President Subsidiary and Investment Management, Global Power Synergy Public Company Limited
2009 - 2017	Senior Vice President, Investment Banking Department, The Siam Commercial Bank Public Company Limited

Shareholding in GPSC (including spouse and minor)

- None

Family Relation with Directors, other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mrs. Rosaya Teinwan

Executive Vice President - Business Development

Date Appointed April 1, 2020

Age 53 years old

Education

- Doctor of Business Administration,
King Mongkut's University of Technology North
Bangkok
- Master of Business Administration,
Rangsit University
- Bachelor of Engineering, Kasetsart University

Training Record with Thai Institute of Directors (IOD)

- Advanced Audit Committee Program (AACP)
- Role of the Chairman Program (RCP 31/2013)
- Director Certification Program (DCP 169/2013)
- Anti-Corruption for Executive Program
(ACEP 6/2013)

Training Record

- Public - Private Social Peacekeeping
Administration (Baw Raw AW), Class 6,
Police Collage, Police Education Bureau
Royai Thai Police
- Senior Executive Program
Sasin Graduate Institute of Business
Administration of Chulalongkorn University
- Management of Public Economics for
Executives # 18 King Prajadhipok's Institute
- Leadership Development Program 3,
PTT Leadership and Learning Institute
- MIT Entrepreneurship Online Boot camp
- Innovation of Products and Services MIT's
Approach to Design Thinking
- Massachusetts Institute of Technology
- NUS Executive Programme in International
Management, NUS Business School

- The Emerging US LNG Export Marketplace
- Overview of the Global LNG Market
- The Emerging US LNG Export Marketplace
- Comprehending the Coal Industry
- The Oxford Princeton Programme

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand

1 Organization

- Executive Vice President,
PTT Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

14 Organizations

- Director, PTT Green Energy Pte.
- Director, Combined Heat Power Producing Co., Ltd.
- Director, IRPC Clean Power Co., Ltd.
- Director, Global Renewable Power Co., Ltd.
- Director, 24M Technologies, Inc.
- Chairman, Global Renewable Power 1 CO., LTD
- Chairman, Global Renewable Synergy CO., LTD
- Chairman, Sheng Yang Energy Company Limited
- Director, Glow Energy Myanmar Co.,Ltd.
- Chairman, Global Renewable Synergy Taiwan Co.,Ltd.
- Director, Avaada Energy Private Limited
- Director, NUOVO PLUS Company Limited
- Chairman, Boree Plus Company Limited
- Chairman, Euris Plus Company Limited

Working Experience (5-Year Past Experience)

1 Apr 2020 - Present	Executive Vice President, Business Development, Global Power Synergy Public Company Limited
16 Sep 2019 - 31 March 2020	Executive Vice President, Business Development and Corporate Strategy, Global Power Synergy Public Company Limited
2016 - 2019	Acting President, PTT Energy Resources Company Limited
2015 - 2019	Chief Executive Officer, Sakari Resources Limited and Director in Sakari Resources Limited Groups
2013 - 2019	Acting Managing Director, PTT Green Energy Pte. Ltd and Director PTT Green Energy Pte. Ltd Groups
2012 - 2013	Vice President (Acting), Upstream Petroleum and Gas Business Group and Thailand Integrated Gas Supply - PMO Optimization, PTT Public Company Limited

Shareholding in GPSC (including spouse and minor)

- Self 28,228 Shares (0.00010011%)

Family Relation with Directors, other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mrs. Sriprapha Sumruatruamphol

Executive Vice President - Commercial and Supply Chain Management

Date Appointed November 1, 2021

Age 59 years old

Education

- Master of Business Administration, Syracuse University, New York, USA
- Bachelor Degree in Science (Chemical Engineering), Michigan Technological University, Michigan, USA

Training Record

- Top Executives in the Energy Education Program (Batch 10), Thailand Energy Academy

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand

- None

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

2 Organizations

- Director of Gheco-One Co.,Ltd.
- Director of Chonburi Clean Energy Co., Ltd.

Working Experience (5-Year Past Experience)

2015 - 31 Mar 2020 Chief Commercial Officer and Executive Vice President-Human Resources
Glow Energy Public Co., Ltd. and Glow Group

Feb 2012 - Sep 2013 Chairman of Association of Private Power Producers

Feb 2012 - Sep 2013 Chairman of Power Generation Club - The Federation of Thai Industries

Oct 2002 - Sep 2013 Director of Eastern Fluid Transport Co.,Ltd.

2001 - 2015 Chief Commercial Officer and Executive Vice President
Glow Energy Public Co., Ltd. and Glow Group

Shareholding in GPSC (including spouse and minor)

- None

Family Relation with Directors, other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mr. Wisit Srinuntawong**Executive Vice President - Operational Excellence****Date Appointed** May 1, 2022**Age** 60 years old**Education**

- Master Degree in Business Administration, Bangkok University
- Bachelor Degree in Industrial Electrical Technology, King Mongkut's University of Technology North Bangkok

Training Record

- None

Current Position in Other Organizations**Listed Company-The Stock Exchange of Thailand**

- None

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)**

- None

Working Experience (5-Year Past Experience)

Apr 2022 - Dec 2022	Executive Vice President - Operational Excellence, Global Power Synergy Public Company Limited
Nov 2021 - Apr 2022	Acting Executive Vice President - Operational Excellence, Global Power Synergy Public Company Limited
2020 - Oct 2021	SVP – Project Feasibility and Engineering, Global Power Synergy Public Company Limited
2015 - 2019	SVP - Engineering and Maintenance Management, Glow Energy Public Company Limited

Shareholding in GPSC (including spouse and minor)

- None

Family Relation with Directors, other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Mr. Adrianus Josephus Van Den Broek**Executive Vice President - Operations and Maintenance****Date Appointed** November 1, 2021**Age** 51 years old**Education**

- Master of Science in Management, General Management PDP2, University Nyenrode, the Netherlands
- Bachelor of Electronics Engineering-Technical Computer Science, College Rijswijk

Training Record

- General Management Program Cycle 8, CEDEP

Current Position in Other Organizations**Listed Company-The Stock Exchange of Thailand**

- None

Other Organizations / Companies**(Not Listed in the Stock Exchange of Thailand)**

- Director, GHECO-One Company Limited

Working Experience (5-Year Past Experience)

2020 - Oct 2021	Executive Vice President - Operation Center of Excellence
2016 - 2020	Chief Operating Officer and Executive Vice President, Glow Energy Public Co., Ltd. Glow Group and Houay Ho Power Co., Ltd.

Shareholding in GPSC (including spouse and minor)

- None

Family Relation with Directors, other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Profile of the designated person directly responsible for accounting

Mr. Krittapong Tangsitthisilpa

Senior Vice President Finance & Accounting Shared Service Center

Date Appointed January 1, 2022

Age 45 years old

Education

- Master of Accountancy, Chulalongkorn University
- Bachelor of Accountancy, Kasetsart University
- Bachelor of Law, Sukhothai Thammathirat University

Training Record

- CFO Academy Program in Advanced Level, Faculty of Commerce and Accountancy Chulalongkorn University
- Tax Law Certificate Program, Central Tax Court
- Leadership Development Program: Michigan Ross Executive Education and SEAC

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand

- Vice President Attached to Chief Financial Officer, PTT Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

- None

Working Experience (5-Year Past Experience)

Jan 2022 - Present	Senior Vice President Finance & Accounting Shared Service Center, Global Power Synergy Public Company Limited
Feb 2017 - Dec 2021	Tax Accounting Division Manager, PTT Public Company Limited
Jan 2016 - Jan 2017	Costing Management Gas Business Division Manager, PTT Public Company Limited

Shareholding in GPSC (including spouse and minor)

- None

Family Relations with Directors, other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Profile of the Company Secretary and chief of Compliance

Ms. Pallapa Achanon

Senior Vice President Company Secretary and Corporate Governance

Date Appointed April 1, 2020

Age 54 years old

Education

- Master of Business Administration (Finance)
Kasetsart University
- Bachelor of Science (Business Administration)
Kasetsart University

Training Record

- The Executive Program for Young Professionals (EYP) Class 1, Fiscal Policy Research Institute Foundation
- Leadership Development Program 1, Class 2, PTT Leadership and Learning Institute (PLLI), Executive Program
- Strategy Management Program (SMP), Class 2, Fiscal Policy Research Institute Foundation
- Fundamentals for Corporate Secretaries, Thai Listed Companies Association
- Company Secretary Program (CSP) 99/2019, Thai Institute of Directors
- Director Accreditation Program (DAP) 163/2019, Thai Institute of Directors
- Board Reporting Program (BRP) 33/2020, Thai Institute of Directors
- Risk and Opportunity Management for Corporate Leaders, Thai Institute of Directors
- ASEAN CG Scorecard Coaching 2020, Thai Institute of Directors

Current Position

Listed Company-The Stock Exchange of Thailand

- Vice President of Chief New Business and Infrastructure Officer, PTT Public Company Limited

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

- None

Working Experience (5-Year Past Experience)

April 2020 - present	Senior Vice President Company Secretary and Corporate Governance
Aug 2019 - Mar 2020	Vice President Corporate Secretary and Corporate Governance and Affairs
May 2019 - Jul 2019	Vice President Attached to President and Chief Executive Officer, GPSC
2018 - April 2019	Manager, Corporate Planning and Budgeting Department, PTT
2016 - 2018	Manager, Performance Management and Corporate Risk Department, PTT

Shareholding in GPSC (including spouse and minor)

- Self 1,000 Shares

Family Relation with Directors, Other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Roles of the Chief of Compliance

Since 2018, GPSC has set up a unit under the Board's vision to strictly perform compliance tasks, namely the Compliance Division under the Company Secretary and Corporate Governance Department. Compliance steered corporate compliance with laws and corporate regulations. As GPSC's Second Line of Defense, she defines policies, rules, and standards for compliance and steers compliance of matters under her responsibility, counsels, educates, and communicates defined policies, laws, and regulations.

ATTACHMENT 2 DETAILS OF DIRECTOR IN THE SUBSIDIARY COMPANIES, AS OF DECEMBER 31, 2022

❖ Chairman

✓ Director

o Director/Executive of GPSC

■ holding Company

Company	Glow Energy Public Co., Ltd.	GLOW Co., Ltd.	GLOW SPP2 Co., Ltd.	GLOW SPP3 Co., Ltd.	GLOW SPP11 Co., Ltd.	GLOW IPP Co., Ltd.	GLOW IPP2 Co., Ltd.	Houay Ho Thal Co., Ltd.	HHP Co., Ltd.	GHECO-1 Co., Ltd.	GLOW IPP3 Co., Ltd.	Glow Energy Myanmar Co., Ltd.	Combined Heat and Power Producing Co., Ltd.	Natee Synergy Co., Ltd.	IRPC Clean Power Co., Ltd.	GPSC International Holdings Limited	Energy Recovery Unit Co., Ltd.	GPSC Holding (Thailand) Co., Ltd.	GPSC Treasury Center Co., Ltd.	Global Renewable Synergy Co., Ltd.	GRSC Company Limited Taiwan	Boreplus Company Limited	Eurusplus Company Limited	Helios 1 Company Limited	Helios 2 Company Limited	Helios 3 Company Limited	Helios 4 Company Limited	Helios 5 Company Limited	Global Renewable Power Co., Ltd.
Name-Surname	GLOW Energy	GLOW	GLOW SPP2	GLOW SPP3	GLOW SPP11	GLOW IPP	GLOW IPP2	HHTC	HHP	GHECO-1	GLOW IPP3	GE, Myanmar	CHPP	NSC	IRPC-CP	GPSC International	ERU	GPSC Holding	GPSC	GRSC	GRSC	Boreplus	Eurusplus	Helios 1	Helios 2	Helios 3	Helios 4	Helios 5	GRP
1 Mr. Veerasak Kositpaisal	❖	❖	❖	❖	❖	❖	❖																						
2 Mr. Jukr Boon-Long	✓	✓	✓	✓	✓	✓	✓																						
3 Mrs. Patareeya Benjapolchai	✓	✓	✓	✓	✓	✓	✓																						
4 Police General Aek Angsanant	✓	✓	✓	✓	✓	✓	✓																						
5 Mrs. Boobpha Amornkiatkajom	✓	✓	✓	✓	✓	✓	✓																						
6 Assoc. Prof. Dr. Chayun Tantivasadakarn	✓	✓	✓	✓	✓	✓	✓																						
7 Mr. Worawat Pitayasiri	✓	✓	✓	✓	✓	✓	✓	❖	❖	❖	❖		✓		❖		❖	✓	❖	✓	✓								✓
8 Mr. Sirimet Leepagorn	✓	✓	✓	✓	✓	✓	✓	✓	❖	❖	❖		✓		✓		❖	✓	❖	✓	✓								✓
9 Mr. Thitpong Jurapomsirdee	o							✓	✓	✓	✓		✓		✓		❖	✓	❖	❖	❖								✓
10 Mrs. Rosaya Teinwan	o																												
11 Mrs. Sirobon Boontaworn	o																												
12 Mr. Pajongwit Pongsivapai								✓	✓	✓																			
13 Mr. Natthapatt Tanboon-ek								✓																					
14 Mrs. Sriprapha Sumruatruamphol	o									✓																			
15 Mr. David Richard Nardone										✓																			
16 Mr. Ariyasak Thepchatr												✓																	
17 Mr. Darunporn Kamolpus																													
18 Mr. Jaruwat Singsomdee	o													✓									✓						✓
19 Mrs. Sukittee Chaiyarak	o													✓					✓										
20 Mr. Woravuth Sivapetrant															✓														
21 Mr. Sonkiat Lertrituwadol															✓														
22 Ms. Dudaio Suksamran	o														✓						✓								
23 Mr. Kulapat Pembhursi	o								✓	✓	✓		✓					❖											
24 Mr. Somsak Lercharoensemsuk	o																												
25 Mr. Arjan van den Broek	o									✓																			
26 Ms. Peangpanor Boonklum																													
27 Mr. Sonkiat Masunthasuwun								✓	✓	✓																			
28 Mr. Phichin Aphiwatanaporn															✓														
29 Mr. Niels Holst																													
30 Mr. Suan Hwee Song																													
31 Mr. Siripong Rungrojkitiyosh																													
32 Mr. Ankit Rungrojkitiyosh																												✓	
33 Charn Kulpatinun																											✓	✓	
34 Mr. Sichanh Gnabandith									✓																				
35 Mr. Bounthene Chansamai									✓																				
36 Ms. Chanthouk Thammavong									✓																				
37 Mr. Vanhseng Vannavong									✓																				

Attachment 3

Details about the Chief of Internal Audit

Ms. Attayar Sukotanang

Senior Vice President, Corporate Internal Audit

Date Appointed April 1, 2020

Age 49 years old

Education

- Master of Science in Information Systems
The George Washington University, U.S.A.
- Bachelor of Arts in Business Administration,
Eastern Washington University, U.S.A.

Training Record Professional Certification

- PTT Leadership Development Program I
- Certified Information Systems Auditor (CISA),
U.S.A.

Current Position in Other Organizations

Listed Company-The Stock Exchange of Thailand 1 Organization

- Vice President, PTT Public Company Limited
secondment in the position of Chief New
Business and Infrastructure Officer

Other Organizations / Companies

(Not Listed in the Stock Exchange of Thailand)

- None

Working Experience (5-Year Past Experience)

2020 - Present	Senior Vice President, Corporate Internal Audit, Global Power Synergy Public Company Limited
2017 - 2020	Vice President, Corporate Internal Audit, Global Power Synergy Public Company Limited
2013 - 2017	Team Leader, Upstream and Gas Business Group Alignment Department, PTT Public Company Limited

Shareholding in GPSC (including spouse and minor)

- None

Family Relation with Directors, other Executives, Major Shareholders of GPSC and its Subsidiaries

- None

Attachment 4

Details of Operating Asset

Details of Assets used in Business Operations and Property Evaluation are shown in 56-1 One Report in Business Operation and Performance on Assets used in Business Operations.

Attachment 5

Full version of the Corporate Governance Policy and Guidelines

Good Corporate Governance Policy and Guidelines and Code of Conduct (Full version) Revealing on Company's website <https://www.gpscgroup.com/storage/download/cg/good-corporate-governance-policy/gpsc-corporate-governance-manual-and-code-of-conduct-2020-en.pdf>

Attachment 6

Report of the Audit Committee

The company has disclosed report of Audit Committee in 56-1 One Report : Report the Performance of Good Corporate Governance on the Company's website <https://www.gpscgroup.com/en/management/audit-committee>

FINANCIAL STATEMENTS



Independent Auditor's Report

To the Shareholders of Global Power Synergy Public Company Limited

My opinion

In my opinion, the consolidated financial statements and the separate financial statements present fairly, in all material respects, the consolidated financial position of Global Power Synergy Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial position of the Company as at 31 December 2022, and its consolidated and separate financial performance and its consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRS).

What I have audited

The consolidated financial statements and the separate financial statements comprise:

- the consolidated and separate statements of financial position as at 31 December 2022;
- the consolidated and separate statements of income for the year then ended;
- the consolidated and separate statements of comprehensive income for the year then ended;
- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then end; and
- the notes to the consolidated and separate financial statements, which include significant accounting policies and other explanatory information.

Basis for opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated and separate financial statements section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants including Independence Standards issued by the Federation of Accounting Professions (TFAC Code) that are relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with the TFAC Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key audit matters

Key audit matters are those matters that, in my professional judgement, were of most significance in my audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Key audit matter	How my audit addressed the key audit matter
<p>Acquisition of investments in associates</p> <p>Refer to Note 19.2 Investments in associates, the Group acquired an investment in associates which invests in a large portfolio of renewable power plants in India with a total purchase consideration of Baht 14,984 million. Management determined that the acquisition of investment in associates which the Group has significant influence on investor by applying the definition in TAS 28 “Investments in Associates and Joint Venture”, also has to determine fair value of the net identifiable assets acquired and review purchase price allocation (PPA) in accordance with the concepts in TFRS 3 “Business combination”. The fair value of net identifiable assets is presented as part of investment cost.</p> <p>Management engaged the external valuer to appraise the fair value of net identifiable assets acquired. The fair value of net identifiable assets acquired was Baht 9,517 million, mainly comprised the rights to power purchase agreements and favourable Engineering, Procurement and Construction (EPC) contracts totally Baht 5,262 million. The valuation of net assets acquired was performed as part of the purchase price allocation.</p> <p>I focused on the identification of the fair value of the rights to power purchase agreements and favourable EPC contracts arising from the acquisition of investment because the external valuer applied the discounted cash flows that the model involves significant estimation and judgment made by the management to assess the future cash flows and discounted rate applied for the future cash flows.</p>	<p>I carried out the following procedures in order to obtain evidence of the management’s assessment of acquisition of investment and determination of fair value of net identifiable assets acquired:</p> <ul style="list-style-type: none"> • read the share purchase agreement to understand the key terms and conditions and confirmed our understanding of the transaction with the management. • reviewed management’s assessment that the acquisitions of investment should be accounted for as the investment in associates and in line with the accounting for the business combination. • assessed the appropriateness of the identifiable assets acquired and the liabilities assumed at the acquisition date and also evaluated management’s procedures for determining the fair values of the net identifiable assets acquired. • evaluated the competency, qualifications, experience and objectivity of management’s experts. • tested the calculation of fair values of the rights to power purchase agreements and favourable EPC contracts and challenged management’s significant assumptions applied in the estimation of future cash flows, for example the electricity tariffs, capacity of the power plant, growth rate and operating expenditures by comparing those assumptions to the underlying agreements and external sources. • assessed the discount rate, taking into account independently obtained data from available public information of companies in the industry, to check whether the discount rate used by management was within an acceptable range. <p>As a result of the procedures performed, I determined that the acquisition of investment in associates investing in solar power plants in India is investment in associates in accordance with the definition set out in TAS 28. The assumptions applied in identifying the fair values of the rights to power purchase agreements and favourable EPC contracts were reasonable and in line with the accounting for the business combination.</p>

Key audit matter	How my audit addressed the key audit matter
<p>Impairment assessment of goodwill</p> <p>Refer to Note 24 Goodwill, as at 31 December 2022, the Group had goodwill of Baht 36,090 million, which represents 12.5% of the total consolidated assets. Goodwill arose from the acquisition of shareholding of Glow Energy Public Company Limited (Glow) which engages in generating and supplying electricity, steam and water for industrial use. The Group did not recognise an impairment loss in the 2022 consolidated financial statements.</p> <p>Management tests the impairment of goodwill annually. The impairment test is performed at level of cash generating unit (CGU) and calculates its recoverable amount by applying the value-in-use model. This model involves significant judgements made by the management in respect to the future operating results of business, projected cash flows and the discount rate to be applied to the projected cash flows. Key assumptions applied in the value-in-use model are electricity tariffs, capacity of the power plants, growth rate, operating expenditures, capital structure and discount rate applied to the projected cash flows.</p> <p>I focused on the valuation of goodwill arising from the acquisition of shareholding of Glow due to its significant value and the fact that the determination of value-in-use depends on a number of assumptions. Those assumptions involve management's significant judgements in assessing the feasibility of future business plans.</p>	<p>I carried out the following procedures to assess the impairment testing of goodwill arising from the acquisition of shareholding of Glow which prepared by the management.</p> <ul style="list-style-type: none"> assessed the appropriateness of management's identification of the CGUs. held discussions with management to understand the basis for the assumptions applied and evaluated whether the goodwill impairment testing process and assumptions had been applied consistently across the Group. challenged management's significant assumptions used in the goodwill impairment testing, especially the electricity tariffs, capacity of the power plants, growth rate, operating expenditures, capital structure and discount rate. My procedures included comparing those assumptions to the underlying agreements, external sources, foreign exchange rate forecasts and the approved business plan. assessed reasonableness of the business plan by comparing the 2022 plan with actual results. assessed the discount rate, taking into account independently obtained data from available public information of companies in the industry, to check whether the discount rate used by management was within an acceptable range. tested the sensitivity analysis of key assumptions in order to assess which factors are sensitive to assumptions and the potential impacts of the range of possible outcomes. <p>As a result of the procedures performed, the key assumptions used by the management are within the reasonable range and consistent with supporting evidence.</p>

Other information

The directors are responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and my auditor's report thereon.

My opinion on the consolidated and separate financial statements does not cover the other information and I do not express any form of assurance conclusion thereon.

In connection with my audit of the consolidated and separate financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

Responsibilities of the directors for the consolidated and separate financial statements

Directors are responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRS, and for such internal control as the directors determine is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, the directors are responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intends to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

The audit committee assists the directors in discharging their responsibilities for overseeing the Group's and the Company's financial reporting process.

Auditor's responsibilities for the audit of the consolidated and separate financial statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with audit committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide the audit committee with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with the audit committee, I determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

PricewaterhouseCoopers ABAS Ltd.



Amornrat Pearmpoonvatanasuk
Certified Public Accountant (Thailand) No. 4599
Bangkok
10 February 2023

Global Power Synergy Public Company Limited

Statement of Financial Position

As at 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Assets					
Current assets					
Cash and cash equivalents	11	14,235,987,519	13,792,539,186	12,041,922,817	3,485,599,007
Deposits at financial institutions used as collateral	12	202,564,907	190,199,368	-	-
Financial assets measured at amortised cost	13	561,100,725	3,597,857,342	-	-
Trade receivables, net	14,40	20,177,602,231	13,441,490,614	7,127,647,281	5,241,529,276
Current portion of finance lease receivable	15	1,430,054,230	1,522,214,921	933,274,239	917,239,812
Other receivables	16,40	2,818,701,226	1,767,835,284	392,344,712	412,178,874
Dividends receivable	19,40	105,700,008	91,000,006	105,700,008	91,000,006
Short-term loans to related parties	40	-	967,796,399	1,000,000,000	967,796,399
Current portion of long-term loans to related parties	40	91,744,400	91,744,400	139,504,400	139,504,400
Fuel, spare parts and supplies, net	17	11,914,731,995	6,938,279,148	771,220,275	649,436,709
Derivative assets	7	14,621,368	111,651,207	-	-
Assets held-for-sale	18	-	2,711,464,728	-	503,745,056
Other current assets		1,269,166,167	682,818,569	558,615,369	158,351,983
Total current assets		52,821,974,776	45,906,891,172	23,070,229,101	12,566,381,522
Non-current assets					
Finance lease receivable, net	15	3,816,983,719	5,115,814,884	1,879,293,246	2,729,046,576
Investments in associates	19	41,446,053,052	24,622,859,874	3,847,391,269	1,871,466,269
Investments in joint ventures	19	2,925,665,326	3,077,410,097	2,829,729,090	2,814,729,090
Investments in subsidiaries	19	-	-	171,687,735,643	161,063,058,478
Financial assets measured at fair value through other comprehensive income	8,20	5,303,210,627	5,860,171,999	5,251,210,627	5,181,386,892
Long-term loans to and interest receivables from related parties, net	40	4,460,136,703	4,099,822,772	3,341,240,079	3,911,032,220
Property, plant and equipment, net	21	92,647,395,456	95,581,005,131	15,597,047,412	17,729,750,758
Assets not used in operation, net		97,453,779	103,771,325	-	-
Intangible assets, net	23	39,775,900,765	41,526,486,831	567,370,005	277,158,444
Right-of-use assets, net	22	2,219,765,004	2,516,060,792	362,012,204	540,289,693
Goodwill	24	36,089,835,841	36,089,835,841	-	-
Deferred tax assets, net	32	3,319,427,975	3,249,781,809	-	-
Derivative assets	7	9,798,910	4,899,551	-	-
Other non-current assets, net	40	3,876,491,469	3,041,101,110	120,726,739	163,240,647
Total non-current assets		235,988,118,626	224,889,022,016	205,483,756,314	196,281,159,067
Total assets		288,810,093,402	270,795,913,188	228,553,985,415	208,847,540,589

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Financial Position

As at 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Liabilities and equity					
Current liabilities					
Trade payables	25,40	10,887,361,980	6,407,172,735	4,939,010,784	2,156,622,442
Other payables	26,40	2,538,706,682	2,179,110,648	1,386,569,391	1,147,257,445
Payable for assets under construction		1,442,354,404	1,394,250,361	204,549,277	313,243,426
Short-term loans from financial institutions	27	3,370,567,309	-	-	-
Current portion of lease liabilities, net		148,530,661	154,552,680	73,544,930	81,359,055
Current portion of long-term loans from financial institutions, net	29	11,457,464,750	7,121,428,472	3,738,148,193	668,873,999
Current portion of long-term loans from a related party, net	40	-	-	1,203,429,500	1,203,429,500
Current portion of debentures, net	30	-	1,999,177,305	-	1,999,177,305
Derivative liabilities	7	101,862,824	166,815,551	-	-
Liabilities held-for-sale	18	-	2,085,685,139	-	-
Retentions		-	57,015,700	-	57,015,700
Other current liabilities	28	2,246,591,417	1,887,722,835	635,772,765	348,838,795
Total current liabilities		32,193,440,027	23,452,931,426	12,181,024,840	7,975,817,667
Non-current liabilities					
Lease liabilities, net		2,241,353,961	2,484,807,044	336,430,358	498,512,073
Derivative liabilities	7	218,648,881	938,922,758	-	-
Long-term loans from financial institutions, net	29	46,507,007,824	50,140,239,226	7,182,200,764	10,919,098,957
Long-term loans from related parties, net	40	16,100,000,000	8,000,000,000	25,334,282,309	18,427,944,904
Debentures, net	30	51,449,918,614	42,371,171,275	51,449,918,614	39,457,327,935
Provisions for employee benefits		869,883,052	820,193,393	588,348,872	558,460,742
Deferred tax liabilities, net	32	8,976,360,099	9,962,818,243	490,666,635	551,869,282
Retention		3,346,456	1,375,674	1,694,466	1,050,674
Other non-current liabilities	31,40	15,149,915,810	14,875,913,333	646,823,946	389,193,091
Total non-current liabilities		141,516,434,697	129,595,440,946	86,030,365,964	70,803,457,658
Total liabilities		173,709,874,724	153,048,372,372	98,211,390,804	78,779,275,325

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Financial Position

As at 31 December 2022

Note	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Baht	Baht	Baht	Baht
Liabilities and equity (continued)				
Equity				
Share capital				
Authorised share capital				
2,819,729,371 ordinary shares at par value				
of Baht 10 per share	28,197,293,710	28,197,293,710	28,197,293,710	28,197,293,710
Issued and paid-up share capital				
2,819,729,367 ordinary shares paid-up at				
Baht 10 per share	28,197,293,670	28,197,293,670	28,197,293,670	28,197,293,670
Premium on ordinary shares	70,175,900,837	70,175,900,837	70,175,900,837	70,175,900,837
Deficit from the change in the ownership interests				
in subsidiaries	(14,991,990,030)	(15,002,535,663)	-	-
Other surpluses (deficits)	(1,118,213,914)	(1,118,213,914)	78,467,400	78,467,400
Retained earnings				
Appropriated				
- Legal reserve	33 2,268,360,049	2,088,252,769	2,268,360,049	2,088,252,769
Unappropriated	20,529,290,819	23,091,536,750	28,177,773,058	28,139,409,979
Other components of equity	(330,685,711)	902,045,509	1,444,799,597	1,388,940,609
Equity attributable to owners of the parent	104,729,955,720	108,334,279,958	130,342,594,611	130,068,265,264
Non-controlling interests	10,370,262,958	9,413,260,858	-	-
Total equity	115,100,218,678	117,747,540,816	130,342,594,611	130,068,265,264
Total liabilities and equity	288,810,093,402	270,795,913,188	228,553,985,415	208,847,540,589

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Income

For the year ended 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Revenue from sales and services		123,083,241,908	74,136,639,480	42,840,776,941	22,595,565,536
Revenue from finance lease		601,854,767	736,894,194	390,029,767	493,173,703
Cost of sales and services		(120,324,086,933)	(63,735,952,052)	(41,111,323,166)	(19,863,224,193)
Gross profit		3,361,009,742	11,137,581,622	2,119,483,542	3,225,515,046
Dividend income	19,20	192,001,875	255,601,875	3,650,925,457	3,691,900,393
Other income	18,19,34	2,538,957,609	3,018,948,271	1,630,118,945	731,847,146
Currency exchange gain (loss), net		(46,758,925)	(54,945,229)	(117,291,651)	285,333,800
Administrative expenses		(2,309,825,758)	(2,962,734,798)	(1,375,584,926)	(1,097,750,961)
Gain (loss) from measurement of financial instruments, net		105,720,368	(38,280,495)	(62,584,750)	(110,565)
Finance costs	36	(4,298,888,912)	(3,859,830,077)	(2,237,829,019)	(1,785,464,454)
Share of profit from investments in associates and joint ventures, net	19	1,538,960,962	1,536,010,179	-	-
Profit before income tax		1,081,176,961	9,032,351,348	3,607,237,598	5,051,270,405
Income tax	37	376,184,802	(1,191,999,889)	(5,091,999)	(148,730,874)
Profit for the year		1,457,361,763	7,840,351,459	3,602,145,599	4,902,539,531
Profit attributable to					
Owners of the parent		891,449,844	7,318,579,227	3,602,145,599	4,902,539,531
Non-controlling interests		565,911,919	521,772,232	-	-
		1,457,361,763	7,840,351,459	3,602,145,599	4,902,539,531
Earnings per share					
Basic earnings per share	38	0.32	2.60	1.28	1.74

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Comprehensive Income

For the year ended 31 December 2022

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Baht	Baht	Baht	Baht
Profit for the year	1,457,361,763	7,840,351,459	3,602,145,599	4,902,539,531
Other comprehensive income (expense) :				
Items that will be reclassified subsequently to profit or loss				
Cash flow hedges	562,388,890	629,237,367	-	325,814
Costs of hedging	(28,324,696)	1,536,450	-	68,389
Share of other comprehensive expense from investments in associates and joint ventures	(1,971,425,441)	(273,218,089)	-	-
Exchange differences on translation of financial statements	533,633,324	204,299,005	-	-
Income tax on items that will be reclassified subsequently to profit or loss	(35,386,184)	(67,133,734)	-	-
Total items that will be reclassified subsequently to profit or loss, net of tax	(939,114,107)	494,720,999	-	394,203
Items that will not be reclassified subsequently to profit or loss				
Gain from remeasurement of equity investments at fair value through other comprehensive income	58,970,963	2,616,585,359	69,823,735	2,520,421,956
Income tax on items that will not be reclassified subsequently to profit or loss	(11,804,776)	(520,432,170)	(13,964,747)	(504,084,391)
Total Items that will not be reclassified subsequently to profit or loss, net of tax	47,166,187	2,096,153,189	55,858,988	2,016,337,565
Other comprehensive (expense) income for the year, net of tax	(891,947,920)	2,590,874,188	55,858,988	2,016,731,768
Total comprehensive income for the year	565,413,843	10,431,225,647	3,658,004,587	6,919,271,299
Total comprehensive income attributable to				
Owners of the parent	(240,348,374)	9,673,030,608	3,658,004,587	6,919,271,299
Non-controlling interests	805,762,217	758,195,039	-	-
	565,413,843	10,431,225,647	3,658,004,587	6,919,271,299

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Changes in Equity

For the year ended 31 December 2022

Attributable to owners of the parent																	Consolidated financial statements				
		Retained earnings				Other components of equity															
		Deficit from the change in the ownership interests in subsidiaries		Appropriated - Legal reserve		Exchange differences on translation of financial statements		Changes in fair value of equity investments		Cash flow hedge reserves		Costs of hedging investments in associates and joint ventures		Income (expense) from comprehensive		Total equity attributable to owners of the parent		Non-controlling interests		Total equity	
Notes		Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht
Opening balance as at 1 January 2021																					
		28,197,293,670	70,175,900,837	(14,991,990,030)	(1,118,213,914)	1,843,125,793	20,247,678,550	(47,835,790)	(578,679,916)	(781,941,987)	9,069,060	(53,017,239)	(1,452,405,872)	102,801,389,034	8,965,979,969	111,867,369,003					
Changes in equity for the year																					
33	Legal reserved	-	-	-	-	245,126,976	(245,126,976)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Dividend	-	-	-	-	-	(4,229,594,051)	-	-	-	-	-	-	(4,229,594,051)	(304,738,133)	(4,534,332,184)					
	Change in the ownership interests in subsidiaries	-	-	(10,545,633)	-	-	-	-	-	-	-	-	-	-	(6,176,017)	(16,721,650)					
Total comprehensive income (expense) for the year		-	-	-	-	-	7,316,579,227	-	-	-	-	-	-	-	7,316,579,227	521,772,232	7,840,351,459				
	Profit for the year	-	-	-	-	-	7,316,579,227	-	-	-	-	-	-	-	7,316,579,227	521,772,232	7,840,351,459				
	Other comprehensive income (expense) for the year	-	-	-	-	-	-	147,151,427	2,096,153,189	383,124,014	1,240,840	(273,218,089)	2,354,451,381	2,354,451,381	236,422,807	2,590,874,188					
Closing balance as at 31 December 2021																					
		28,197,293,670	70,175,900,837	(15,002,535,663)	(1,118,213,914)	2,088,252,769	23,091,536,750	99,315,637	1,517,473,273	(398,817,973)	10,309,900	(326,235,328)	902,045,509	108,334,279,958	9,413,260,858	117,747,540,816					
Opening balance as at 1 January 2022																					
		28,197,293,670	70,175,900,837	(15,002,535,663)	(1,118,213,914)	2,088,252,769	23,091,536,750	99,315,637	1,517,473,273	(398,817,973)	10,309,900	(326,235,328)	902,045,509	108,334,279,958	9,413,260,858	117,747,540,816					
Changes in equity for the year																					
33	Legal reserved	-	-	-	-	180,107,280	(180,107,280)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Dividend	-	-	-	-	-	(3,383,675,240)	-	-	-	-	-	-	(3,383,675,240)	(140,217,617)	(3,523,892,857)					
	Disposal of a subsidiary	-	-	10,545,633	-	-	110,086,745	(21,410,180)	(79,522,822)	-	-	-	(100,933,002)	19,699,376	-	19,699,376					
19	Establishment of subsidiaries and change in the ownership interests in subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	291,457,500	291,457,500					
Total comprehensive income (expense) for the year		-	-	-	-	-	891,449,844	-	-	-	-	-	-	-	891,449,844	565,911,919	1,457,361,763				
	Profit for the year	-	-	-	-	-	891,449,844	-	-	-	-	-	-	-	891,449,844	565,911,919	1,457,361,763				
	Other comprehensive income (expense) for the year	-	-	-	-	-	-	513,911,084	47,166,187	301,171,187	(22,621,235)	(1,971,425,441)	(1,131,798,218)	(1,131,798,218)	239,850,298	(891,947,920)					
Closing balance as at 31 December 2022																					
		28,197,293,670	70,175,900,837	(14,991,990,030)	(1,118,213,914)	2,268,360,049	20,529,290,819	591,816,541	1,485,116,638	(97,646,786)	(12,311,335)	(2,297,660,769)	(330,685,711)	104,729,955,720	10,370,262,958	115,100,218,678					

The notes to the consolidated and separate financial statements on pages 297 to 390 are an integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Changes in Equity

For the year ended 31 December 2022

	Notes	Separate financial statements									
		Retained earnings					Other components of equity				
		Issued and paid-up share capital		Premium on share capital		Other surpluses		Appropriated-legal reserve		Unappropriated	
		Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht
Opening balance as at 1 January 2021		28,197,293,670	70,175,900,837	78,467,400	1,843,125,793	27,711,591,475	(627,396,956)	(325,814)	(68,389)	(627,791,159)	127,378,588,016
Changes in equity for the year											
Legal reserved	33	-	-	-	245,126,976	(245,126,976)	-	-	-	-	-
Dividend		-	-	-	-	(4,229,594,051)	-	-	-	-	(4,229,594,051)
Total comprehensive income for the year											
Profit for the year		-	-	-	-	4,902,539,531	-	-	-	-	4,902,539,531
Other comprehensive income for the year		-	-	-	-	-	2,016,337,565	325,814	68,389	2,016,731,768	2,016,731,768
Closing balance as at 31 December 2021		28,197,293,670	70,175,900,837	78,467,400	2,088,252,769	28,139,409,979	1,388,940,609	-	-	1,388,940,609	130,068,265,264
Opening balance as at 1 January 2022		28,197,293,670	70,175,900,837	78,467,400	2,088,252,769	28,139,409,979	1,388,940,609	-	-	1,388,940,609	130,068,265,264
Changes in equity for the year											
Legal reserved	33	-	-	-	180,107,280	(180,107,280)	-	-	-	-	-
Dividend	39	-	-	-	-	(3,383,675,240)	-	-	-	-	(3,383,675,240)
Total comprehensive income for the year											
Profit for the year		-	-	-	-	3,602,145,599	-	-	-	-	3,602,145,599
Other comprehensive income for the year		-	-	-	-	-	55,858,988	-	-	55,858,988	55,858,988
Closing balance as at 31 December 2022		28,197,293,670	70,175,900,837	78,467,400	2,268,360,049	28,177,773,058	1,444,799,597	-	-	1,444,799,597	130,342,594,611

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Cash Flows

For the year ended 31 December 2022

		Consolidated		Separate	
		financial statements		financial statements	
	Notes	2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Cash flows from operating activities					
Profit before income tax for the year		1,081,176,961	9,032,351,348	3,607,237,598	5,051,270,405
Adjustments to reconcile profit before					
income tax to net cash from operating activities					
- Expected credit losses from trade receivables	14	244,020	2,272,485	-	-
- Depreciation and amortisation		9,112,556,968	9,231,937,120	1,588,487,304	1,596,268,617
- Interest income		(251,046,747)	(221,487,270)	(159,710,426)	(202,310,273)
- Dividend income	19,20	(192,001,875)	(255,601,875)	(3,650,925,457)	(3,691,900,393)
- Loss on impairment of assets	21	338,000,000	16,815,070	-	-
- Loss on disposal and write-off of plant and equipment, net		10,050,539	864,616,734	697,785	2,912,111
- Finance costs		4,260,893,660	3,823,021,585	2,237,829,019	1,785,464,454
- Reversal of deferred financing fees		-	-	8,772,590	-
- Recognition of advance received for long-term					
right to grant of assets		(43,458,346)	(38,810,922)	-	-
- Provisions for decommissioning cost of the power plants		(23,771,369)	-	-	-
- Unrealised exchange (gain) loss		279,339,760	38,321,150	118,395,424	(300,214,151)
- Loss from write-off spare parts and supplies		1,265,603	-	1,265,603	-
- Loss from obsolescence of spare parts and supplies		6,290,758	10,851	-	10,851
- Gain on sale of assets and liabilities held-for-sale	18	(789,686,178)	-	(769,139,585)	-
- Gain on sales of investments in subsidiaries					
and a battery business	19	(388,329,740)	(115,098,235)	(515,871,069)	(227,199,844)
- Share of profit from investments in subsidiaries					
and joint ventures, net	19	(1,538,960,962)	(1,536,010,179)	-	-
- Unrealised (gain) loss from measurement					
of financial instruments		(3,677,505)	10,005,872	-	-
- Provisions for employee benefits		72,416,670	74,545,643	53,602,468	49,432,251
- Realised loss on exchange rate from dividend income		-	-	1,269,120	-
Cash flows before changes in working capital		11,931,302,217	20,926,889,377	2,521,910,374	4,063,734,028
Changes in working capital					
- Trade receivables		(6,738,181,172)	(4,366,136,873)	(1,886,118,005)	(1,903,192,931)
- Other receivables		(947,098,134)	(565,730,404)	19,130,354	(148,517,521)
- Finance lease receivable		1,290,252,246	839,084,570	758,007,693	676,317,355
- Fuel, spare parts and supplies		(4,997,050,173)	(628,782,410)	(136,090,134)	(77,968,865)
- Other current assets		(100,691,277)	(127,788,460)	(134,841,328)	(5,865,904)
- Other non-current assets		(1,403,293,351)	(582,189,955)	1,655,318	(2,283,606)
- Trade payables		4,480,189,245	2,455,600,135	2,782,388,342	715,455,201
- Other payables		249,922,429	(273,966,588)	43,263,154	(15,313,858)
- Other current liabilities		640,539,155	169,516,672	236,404,938	225,640,945
- Retirement benefit paid		(26,452,105)	(18,039,790)	(23,714,339)	(6,174,697)
- Other non-current liabilities		460,181,370	(84,136,677)	200,854,913	(186,839,810)
Cash generated from operating activities		4,839,620,450	17,744,319,597	4,382,851,280	3,334,990,337
- Tax paid		(1,401,747,037)	(1,635,140,099)	(295,152,417)	(200,507,798)
Net cash generated from operating activities		3,437,873,413	16,109,179,498	4,087,698,863	3,134,482,539

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Cash Flows

For the year ended 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Cash flows from investing activities					
Interest received		136,771,999	148,063,280	135,707,752	143,104,113
Dividends received		911,134,590	997,516,173	3,634,956,336	3,852,684,624
Cash received (paid) for deposits at financial institutions used as collateral		(5,948,126)	208,608,594	-	-
Cash received (paid) for financial assets measured at amortised cost, net		3,036,756,617	(1,324,857,342)	-	-
Cash paid for investments in financial assets measured at fair value through other comprehensive income	20	-	(498,852,990)	-	-
Cash paid for investments in joint ventures	19	(15,000,000)	(1,568,000)	(15,000,000)	-
Cash paid for investments in associates	19	(17,823,895,680)	(15,466,676,849)	(1,975,925,000)	(482,216,269)
Cash paid for investments in subsidiaries	19	-	-	(11,096,974,800)	(15,607,131,786)
Cash received from sales of assets and liabilities held-for-sale		1,407,144,481	692,699,844	1,272,884,642	692,699,844
Cash received from the sale of investments in subsidiaries and a battery business		2,506,896,619	-	2,653,080,637	-
Cash paid for short-term loans to related parties	40	(602,628,660)	(994,706,338)	(1,602,628,660)	(1,044,706,338)
Cash received from short-term loans to related parties	40	1,570,425,059	1,694,989,934	1,570,425,059	1,854,989,934
Cash paid for long-term loans to related parties	40	(503,403,120)	(834,040,000)	(198,490,552)	(3,245,646,468)
Cash received from long-term loans to related parties	40	796,842,495	209,297,932	794,602,495	2,668,664,400
Cash received from disposal of property, plant and equipment		8,023,655	1,567,555	142,468	1,214,554
Cash paid for purchase of property, plant and equipment		(5,248,100,548)	(4,305,222,104)	(963,242,312)	(1,313,537,814)
Cash paid for purchase of intangible assets		(267,189,746)	(69,755,334)	(255,238,771)	(118,677,909)
Net cash payments in investing activities		(14,092,170,365)	(19,542,935,645)	(6,045,700,706)	(12,598,559,115)

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Cash Flows

For the year ended 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Cash flows from financing activities					
Cash paid for liabilities under lease agreements		(186,166,960)	(207,507,310)	(65,993,723)	(72,504,972)
Cash paid for financing fees to financial institutions and a related party		(103,874,928)	(43,895,929)	(18,319,268)	(26,020,803)
Cash received from short-term loans from financial institutions	27	3,370,567,309	-	-	-
Cash received from long-term loans from financial institutions	29	8,270,608,651	34,563,772,130	-	3,500,000,000
Cash paid for repayments of long-term loans from financial institutions	29	(7,124,042,332)	(23,208,342,407)	(670,000,000)	(11,247,500,000)
Cash received from long-term loans from related parties	40	8,100,000,000	8,000,000,000	8,100,000,000	19,990,000,000
Cash paid from long-term loans from related parties	40	-	-	(1,203,429,500)	(340,329,500)
Cash paid for long-term loans to former shareholders from the acquisition of investment in associates	40	(585,661,186)	-	-	-
Cash received from issuance of debentures	30	12,000,000,000	-	12,000,000,000	-
Cash paid for repayments of debentures	30	(5,000,000,000)	(13,055,000,000)	(2,000,000,000)	(3,500,000,000)
Cash paid from the change in non-controlling interests		-	(16,721,651)	-	-
Cash received from non-controlling interests from capital increase in subsidiaries	19	291,457,500	-	-	-
Dividend paid	39	(3,383,675,240)	(4,229,594,051)	(3,383,675,240)	(4,229,594,051)
Dividend paid to non-controlling interests of subsidiaries		(140,217,617)	(489,705,987)	-	-
Interest paid		(3,838,689,872)	(4,037,115,845)	(2,189,978,101)	(1,761,010,690)
Interest paid capitalised as property, plant and equipment		(68,848,880)	(66,959,824)	(8,252,130)	(41,204,324)
Net cash receipts from (payments in) financing activities		11,601,456,445	(2,791,070,874)	10,560,352,038	2,271,835,660

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Statement of Cash Flows

For the year ended 31 December 2022

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Baht	Baht	Baht	Baht
Net increase (decrease) in cash and cash equivalents	947,159,493	(6,224,827,021)	8,602,350,195	(7,192,240,916)
Effect of exchange rate on cash and cash equivalents	(503,711,160)	59,314,790	(46,026,385)	22,657,037
Less cash related to assets held-for-sale	-	(330,839,784)	-	-
Cash and cash equivalents at beginning of year	13,792,539,186	20,288,891,201	3,485,599,007	10,655,182,886
Cash and cash equivalents at ending of year	14,235,987,519	13,792,539,186	12,041,922,817	3,485,599,007
Supplementary information				
Changes in payable for assets under construction	(1,919,901,097)	(231,673,105)	(221,401,662)	(149,762,604)
Changes in payable for intangible assets	106,741,514	15,847,180	106,741,514	15,847,180
Changes in payables for investments in a subsidiary	-	-	162,620,000	-
Changes in dividend receivable from a subsidiary	-	-	-	(192,517,564)
Changes in dividend receivable from a joint venture	(14,700,001)	(31,733,336)	(14,700,001)	(31,733,336)
Changes in dividend payable to non-controlling interests	-	(184,967,856)	-	-
Acquisitions of right to use assets under lease agreement	(17,839,792)	106,192,313	1,354,796	61,626,717
Change in lease liabilities	100,568,442	110,561	100,508,442	110,561

The notes to the consolidated and separate financial statements on pages 297 to 390 are on integral part of these financial statements.

Global Power Synergy Public Company Limited

Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

1 General information

Global Power Synergy Public Company Limited (the Company) is a public limited company which listed on the Stock Exchange of Thailand. The Company is incorporated in Thailand and the address of its registered office is No.555/2, Energy Complex, Building B, 5th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900.

For reporting purposes, the Company and its subsidiaries are referred to as the Group.

The principal business of the Group is the production and distribution of electricity, steam and water for industrial use to the government and industrial customers.

These consolidated and separate financial statements were authorised for issue by the Board of Directors on 10 February 2023.

2 Basis of preparation

The consolidated and separate financial statements have been prepared in accordance with Thai Financial Reporting Standards (TFRS) and the financial reporting requirements issued under the Securities and Exchange Act.

The consolidated and separate financial statements have been prepared under the historical cost convention except as disclosed in the below accounting policies.

The preparation of financial statements in conformity with TFRS requires management to use certain critical accounting estimates and to exercise its judgement in applying the Group's accounting policies. The areas involving a higher degree of judgement or complexity, or areas that are more likely to be materially adjusted due to changes in estimates and assumptions are disclosed in Note 9.

An English version of the consolidated and separate financial statements has been prepared from the statutory financial statements that are in the Thai language. In the event of a conflict or a difference in interpretation between the two languages, the Thai language statutory financial statements shall prevail.

3 Amended financial reporting standards

3.1 Amended financial reporting standards that are effective for accounting periods beginning on or after 1 January 2022 and have significant impacts to the Group

Interest rate benchmark (IBOR) reform - phase 2, amendments to TFRS 9, TFRS 7, TFRS 16 and TFRS 4, and accounting guidance, financial instruments and disclosures for insurance business provide relief measures addressing issues that might affect financial reporting during the reform, including the effects of changes to contractual cash flows or hedging relationship arising from the replacement of one benchmark with an alternative benchmark.

Key relief measures of the phase 2 amendments are as follows:

- When changing the basis for determining contractual cash flows for financial assets and financial liabilities (including lease liabilities), changes that are necessary as a direct result of the IBOR reform and which are considered economically equivalent, will not result in an immediate gain or loss in the statement of income. TFRS 16 has also been amended to require lessees to use a similar practical expedient when accounting for lease modifications that change the basis for determining future lease payments as a result of the IBOR reform.
- Hedge accounting relief measures will allow most TFRS 9 hedge relationships that are directly affected by the IBOR reform to continue. However, additional ineffectiveness might need to be recorded.

Moreover, TFRS 7 requires additional disclosure about:

- The nature and extent of risks arising from the IBOR reform to which the entity is exposed to.
- How the entity manages those risks.
- The entity's progress in transitioning from the IBOR to alternative benchmark rates and how the entity is managing this transition.

The impacts from the amendments is disclosed in Note 6.1.1 (b) Effect of IBOR reform

Global Power Synergy Public Company Limited

Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

3.2 Amended financial reporting standards that are effective for accounting period beginning or after 1 January 2023 and relevant to the Group. The Group did not early adopt these standards.

- a) **Amendment to TAS 16 Property, plant and equipment** clarified to prohibit entities from deducting from the cost of an item of Property plant and equipment any proceeds received from selling any items produced while the entity is preparing that asset for its intended use.
- b) **Amendment to TAS 37 Provisions, contingent liabilities and contingent assets** clarified that, in considering whether a contract is onerous, the direct costs of fulfilling a contract include both the incremental costs of fulfilling the contract and an allocation of other costs directly related to fulfilling the contract. Before recognising a separate provision for an onerous contract, the entity must recognise any impairment losses that have occurred on the assets used in fulfilling the contract.
- c) **Amendment to TFRS 3 Business combinations** clarified some minor amendments to update its references to the Conceptual Framework for Financial Reporting and added a consideration for the recognition of liabilities and contingent liabilities acquired from business combinations. The amendments also confirmed that contingent assets shouldn't be recognised at the acquisition date.
- d) **Amendment to TFRS 9 Financial instruments** clarified which fees should be included in the 10% test for the derecognition of financial liabilities. It should only include fees between the borrower and lender.

The Group's management is currently assessing the impact of adoption of these standards.

4 Reclassification

The Group has reclassified comparative figures in the statement of financial position as at 31 December 2021 to conform with the current period presentation are as follows:

Statement of financial position as at 31 December 2021	Consolidated financial information		
	As previous reported Baht	Reclassified Baht	As reclassified Baht
Current assets			
Other receivables	1,625,806,147	142,029,137	1,767,835,284
Other current assets	408,056,791	274,761,778	682,818,569
Current liabilities			
Other payables	2,178,397,663	712,985	2,179,110,648
Other current liabilities	1,471,644,905	416,077,930	1,887,722,835

5 Accounting Policies

The principal accounting policies applied in the preparation of these consolidated and separate financial statements are set out belows:

5.1 Principles of consolidation and equity accounting

5.1.1 Subsidiaries

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Subsidiaries are consolidated from the date on which control is transferred to the Group until the date that control ceases.

In the separate financial statements, investments in subsidiaries are accounted for using cost method less impairment (if any).

Global Power Synergy Public Company Limited

Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

5.1.2 Associates

Associates are all entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting.

In the separate financial statements, investments in associates are accounted for using cost method less impairment (if any).

5.1.3 Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangements.

Joint operations

A joint operation is a joint arrangement whereby the Group has rights to the assets, and obligations for the liabilities relating to the arrangement. The Group recognises its direct right to the assets, liabilities, revenues and expenses of joint operations and its share of any jointly held or incurred assets, liabilities, revenues and expenses. These have been incorporated in the Group's financial statement line items.

Joint ventures

A joint venture is a joint arrangement whereby the Group has rights to the net assets of the arrangement. Interests in joint ventures are accounted for using the equity method.

In the separate financial statements, investments in joint ventures are accounted for using cost method less impairment (if any).

5.1.4 Equity method

The investment is initially recognised at cost which is consideration paid and directly attributable costs.

The Group's subsequently recognises shares of its associates and joint ventures' profits or losses and other comprehensive income in the profit or loss and other comprehensive income, respectively. The subsequent cumulative movements are adjusted against the carrying amount of the investment.

When the Group's share of losses in associates and joint ventures equals or exceeds its interest in the associates and joint ventures, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associates and joint ventures.

5.1.5 Changes in ownership interests

The Group treats transactions with non-controlling interests that do not result in a loss of control as transactions with equity owners of the Group. A difference between the amount of the adjustment to non-controlling interests to reflect their relative interest in the subsidiary and any consideration paid or received is recognised within equity.

If the ownership interest in associates and joint ventures is reduced but significant influence and joint control is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate. Profit or loss from reduce of the ownership interest in associates and joint ventures is recognise in profit or loss.

When the Group losses control, joint control or significant influence over investments, any retained interest in the investment is remeasured to its fair value, with the change in carrying amount recognised in profit or loss. The fair value becomes the initial carrying amount of the retained interest which is reclassified to investment in an associate, or a joint venture or a financial asset accordingly.

5.1.6 Intercompany transactions on consolidation

Intra-group transactions, balances and unrealised gains on transactions are eliminated. Unrealised gains on transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interest in the associates and joint ventures. Unrealised losses are also eliminated in the same manner unless the transaction provides evidence of an impairment of the asset transferred.

Global Power Synergy Public Company Limited

Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

5.2 Business combination

The Group applies the acquisition method to account for business combinations with an exception on business combination under common control. The consideration transferred for the acquisition of a subsidiary comprises.

- fair value of the assets transferred,
- liabilities incurred to the former owners of the acquiree
- equity interests issued by the Group

Identifiable assets and liabilities acquired and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date.

On an acquisition-by-acquisition basis, the Group initially recognises any non-controlling interest in the acquiree either at fair value or at the non-controlling interest's proportionate share of the acquiree's net assets.

The excess of the consideration transferred, the amount of any non-controlling interest recognised and the acquisition-date fair value of any previous equity interest in the acquiree (for business combination achieved in stages) over the fair value of the identifiable net assets acquired is recorded as goodwill. In the case of a bargain purchase, the difference is recognised directly in profit or loss.

Acquisition-related costs

Acquisition-related costs are recognised as expenses in the consolidated financial statements.

Step-up acquisition

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measured are recognised in profit or loss.

Changes in fair value of contingent consideration paid/received

Subsequent changes to the fair value of the contingent consideration that is an asset or liability is recognised in profit or loss. Contingent consideration that is classified as equity is not re-measured.

5.3 Foreign currency translation

5.3.1 Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the functional currency). The financial statements are presented in Thai Baht, which is the functional currency of the Company and the presentation currency of the Group and the Company.

5.3.2 Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuation where items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the profit or loss.

When a gain or loss on a non-monetary item is recognised in other comprehensive income, any exchange component of that gain or loss is recognised in other comprehensive income. Conversely, when a gain or loss on a non-monetary item is recognised in profit and loss, any exchange component of that gain or loss is recognised in profit and loss.

5.3.3 Group companies

The results and financial position of all of the Group's entities (none of which has the currency of a hyper-inflationary economy) that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- Assets and liabilities for each statement of financial position presented are translated at the closing rate at the date of that statement of financial position;
- Income and expenses for each statement of income and statement of comprehensive income are translated at average exchange rates; and
- All resulting exchange differences are recognised in other comprehensive income.

Global Power Synergy Public Company Limited

Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

5.4 Cash and cash equivalents

In the statements of cash flows, cash and cash equivalents include cash on hand, deposits held at call, short-term highly liquid investments with maturities of three months or less from acquisition date.

5.5 Trade receivables

Trade receivables are amounts due from customers for goods sold or services performed in the ordinary course of business. They are generally due for settlement within 30 days and therefore are all classified as current.

Trade receivables are recognised initially at the amount of consideration that is unconditional unless they contain significant financing components, they are recognised at fair value. The Group holds the trade receivables with the objective to collect the contractual cash flows and therefore measures them subsequently at amortised cost.

5.6 Fuel, spare parts and supplies

Fuel, spare parts and supplies are stated at the lower of cost or net realisable value.

Cost of fuel, spare parts and supplies are determined by the weighted average basis method. Spare parts and supplies are classified as spare parts and supplies used for specific equipment in power plants and spare parts and supplies used for other general equipment.

The cost of purchase comprises both the purchase price and costs directly attributable to the acquisition of the fuel, spare parts and supplies, such as import duties and transportation charges, less all attributable discounts. The allowance for obsolescence of spare parts and supplies is made on an aging analysis.

5.7 Financial asset

5.7.1 Classification

The Group classifies its debt instrument financial assets in the following measurement categories depending on i) business model for managing the asset and ii) the cash flow characteristics of the asset whether they represent solely payments of principal and interest (SPPI).

- those to be measured subsequently at fair value (either through other comprehensive income or through profit or loss); and
- those to be measured at amortised cost.

The Group reclassifies debt investments when and only when its business model for managing those assets changes.

For investments in equity instruments, the Group has an irrevocable election at the time of initial recognition to account for the equity investment at fair value through profit or loss (FVPL) or at fair value through other comprehensive income (FVOCI) except those that are held for trading, they are measured at FVPL.

5.7.2 Recognition and derecognition

Regular way purchases, acquires and sales of financial assets are recognised on trade-date, the date on which the Group commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

5.7.3 Measurement

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at FVPL, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at FVPL are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether the cash flows are solely payment of principal and interest.

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5.7.4 Debt instruments

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the financial assets. There are three measurement categories into which the Group classifies its debt instruments:

- Amortised cost: Financial assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortised cost. Interest income from these financial assets is included in other income using the effective interest rate method. Any gain or loss arising on derecognition and foreign exchange gains and losses are recognised directly in profit or loss and presented in other gain/ (losses) and currency exchange gain (loss), respectively. Impairment losses are presented as a separate line item in the profit or loss.
- FVOCI: Financial assets that are held for i) collection of contractual cash flows; and ii) for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at FVOCI. Movements in the carrying amount are taken through other comprehensive income (OCI), except for 1) the recognition of impairment gains or losses, 2) interest income using the effective interest method, and 3) foreign exchange gains and losses which are recognised in profit or loss. When the financial assets are derecognised, the cumulative gain or loss previously recognised in OCI is reclassified from equity to profit or loss and recognised in other gains/(losses). Interest income is included in other income. Impairment expenses are presented separately in profit or losses.
- FVPL: Financial assets that do not meet the criteria for amortised cost or FVOCI are measured at FVPL. A gain or loss on a debt investment that is subsequently measured at FVPL is recognised in profit or loss and presented net within other gain/(loss) from measurement of financial instruments in the period in which it arises.

5.7.5 Equity instruments

The Group measures all equity investments at fair value. Where the Group has elected to present fair value gains and losses on equity instruments in OCI, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividends from such investments continue to be recognised in profit or loss as dividend income when the right to receive payments is established.

Changes in the fair value of financial assets at FVPL are recognised in other gains/ (losses).

Impairment losses and reversal of impairment losses on equity investments are reported together with changes in fair value.

5.7.6 Impairment

The Group applies the TFRS 9 simplified approach and general approach in measuring the impairment of trade receivables and lease receivables under Power Purchase Agreement, which applies lifetime expected credit loss, from initial recognition, for all trade receivables and lease receivables under Power Purchase Agreement.

To measure the expected credit losses by using simplified approach, the management grouped the receivables based on shared credit risk characteristics and the days past due. The expected credit loss rates are based on payment profiles, historical credit losses as well as forward-looking information and factors that may affect the ability of the customers to settle the outstanding balances. In addition to the simplified approach, the management applies the general approach, which is to consider the individual assessments by using the discounted cashflow method. For this, management uses an estimate debtor's future cash flows based on the original effective interest rate.

For other financial assets carried at amortised cost and FVOCI, the Group applies TFRS 9 general approach in measuring the expected credit loss of those financial assets. Under the general approach, the 12-month or the lifetime expected credit loss is applied depending on whether there has been a significant increase in credit risk since the initial recognition.

The significant increase in credit risk (from initial recognition) assessment is performed every end of reporting period by comparing i) expected risk of default as of the reporting date and ii) estimated risk of default on the date of initial recognition.

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The Group assesses expected credit loss by taking into consideration forward-looking information and past experiences. The expected credit loss is a probability-weighted estimate of credit losses (probability-weighted present value of estimated cash shortfall). The cash shortfall is the difference between all contractual cash flows that are due to the Group and all cash flows expected to receive, discounted at the original effective interest rate.

When measuring expected credit losses, the Group reflects the following:

- probability-weighted estimated uncollectible amounts
- time value of money; and
- supportable and reasonable information as of the reporting date about past experience, current conditions and forecasts of future situations.

Impairment and reversal of impairment losses are recognised in profit or loss and included in administrative expenses.

5.8 Property, plant and equipment

Property, plant and equipment are initially stated at historical cost. All plant and equipment are subsequently stated at historical cost less accumulated depreciation and allowance for impairment (if any). Initial cost includes expenditure that is directly attributable to the acquisition of the items. These can include the initial estimate of costs of dismantling and removing the item, and restoring the site on which it is located, the obligation for which the Group incurs either when the item is acquired or as a consequence of having used the item during a particular period.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognised. All other repairs and maintenance are charged to profit or loss during the financial period in which they are incurred.

Depreciation is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, except land, which is considered to have an indefinite life, as follows:

	Years
Buildings and leasehold improvements	5 to 40
Power plant, machinery and equipment	3 to 40
Furniture, fixture and office equipment	3 to 28
Vehicles	5

Depreciation of power plant of Houay Ho Power Company Limited is calculated using the unit of production method.

The asset's residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

The asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Gains or losses on disposals of property, plant and equipment are determined by comparing the proceeds with the carrying amount. The net gains or losses are recognised in profit or loss.

5.9 Intangible assets

Intangible assets with limited life are initially recognised at historical cost and subsequently stated at historical cost less accumulated amortisation and allowance for impairment losses (if any). The amortisation is calculated using the straight-line method over their estimated useful lives as follows:

	Years
Right to use grid system	22 - 24
Right to operate power plant	20
Right to use transmission line	25
Deferred land leasehold right	16 - 30
Right to use pipe rack	8 - 16
Right of way	20 - 31
Right to use gas pipeline	13 - 28
Right to use dedicated berth	14
Computer software	3 - 10
Right to power purchase agreements	5 - 31

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5.10 Goodwill

Goodwill represents the excess of the consideration transferred over the fair value of the Group's share of the net identifiable assets, liabilities and contingent liabilities of the acquired subsidiary undertaking or associate or joint venture at the date of acquisition.

Goodwill on acquisitions of subsidiaries is separately reported in the consolidated statement of financial position. Goodwill on acquisition of joint ventures or associates is included in investments in joint ventures or associates and is tested for impairment as part of the overall balance.

Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed. Gains and losses on the disposal of an entity include the carrying amount of goodwill relating to the entity sold.

Goodwill is allocated to cash generating units for the purpose of impairment testing. The allocation is made to those cash generating units or groups of cash generating units that are expected to benefit from the business combination in which the goodwill arose, identified according to operating segment.

5.11 Impairment of assets

Assets that have an indefinite useful life are tested annually for impairment, or more frequently if events or changes in circumstances indicate that it might be impaired. Assets that are subject to amortisation are reviewed for impairment whenever there is an indicator of impairment. An impairment loss is recognised for the amount by which the carrying amount of the assets exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to disposal and value in use.

Where the reasons for previously recognised impairments no longer exist, the impairment losses on the assets concerned other than goodwill is reversed.

5.12 Leases

Leases - where the Group is the lessee

Leases are recognised as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term.

The Group allocates the consideration in the contract to the lease and non-lease components based on their relative stand-alone prices. However, for leases of real estate for which the group is a lessee, it has elected not to separate lease and non-lease components and instead accounts for these as a single lease component.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable
- variable lease payment that are based on an index or a rate
- amounts expected to be payable by the lessee under residual value guarantees
- the exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and
- payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

Lease payments to be made under reasonably certain extension options are also included in the measurement of the liability.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs.

Payments associated with short-term leases and leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise of office furniture.

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Leases - where the Group is the lessor

When assets are leased out under a finance lease, the present value of the lease payments is recognised as a receivable. The difference between the gross receivable and the present value of the receivable is recognised as unearned finance income. Lease income is recognised over the term of the lease which reflects a constant periodic rate of return. Initial direct costs are included in initial measurement of the finance lease receivables and reduce the amount of income recognised over the lease term.

Rental income under operating leases (net of any incentives given to lessees) is recognised on a straight-line basis over the lease term. Initial direct costs incurred in obtaining an operating lease are added to the carrying amount of the underlying asset and recognised as expense over the lease term on the same basis as lease income. The respective leased assets are included in the statement of financial position based on their nature.

5.13 Financial liabilities

5.13.1 Classification

Financial instruments issued by the Group are classified as either financial liabilities or equity securities by considering contractual obligations.

- Where the Group has an unconditional contractual obligation to deliver cash or another financial asset to another entity, it is considered a financial liability unless there is a predetermined or possible settlement for a fixed amount of cash in exchange of a fixed number of the Group's own equity instruments.
- Where the Group has no contractual obligation or has an unconditional right to avoid delivering cash or another financial asset in settlement of the obligation, it is considered an equity instrument.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.

5.13.2 Measurement

Financial liabilities are initially recognised at fair value and are subsequently measured at amortised cost.

5.13.3 Derecognition and modification

Financial liabilities are derecognised when the obligation specified in the contract is discharged, cancelled, or expired.

Where the terms of a financial liability are renegotiated/modified, the Group assesses whether the renegotiation / modification results in the derecognition of that financial liability. Where the modification results in an extinguishment, the new financial liability is recognised based on fair value of its obligation. The remaining carrying amount of financial liability is derecognised. The difference as well as proceed paid is recognised as administrative expense.

Where the modification does not result in the derecognition of the financial liability, the carrying amount of the financial liability is recalculated as the present value of the renegotiated / modified contractual cash flows discounted at its original effective interest rate. The difference is recognised in administrative expense.

5.14 Borrowing costs

General and specific borrowing costs directly attributable to the acquisition or construction of qualifying assets (assets that take several time to get ready for its intended use) are added to the cost of those assets less investment income earned from those specific borrowings. The capitalisation of borrowing costs is ceased when substantially all the activities necessary to prepare the qualifying asset for its intended use or sale are complete.

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5.15 Current and deferred income taxes

The tax expense for the period comprises current and deferred tax. Tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity.

Current tax

The current income tax is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. The Group establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax

Deferred income tax is recognised on temporary differences arising from differences between the tax base of assets and liabilities and their carrying amounts in the financial statements. However, deferred income tax is not recognised for temporary differences arise from:

- initial recognition of an asset or liability in a transaction other than a business combination that affects neither accounting nor taxable profit or loss is not recognised.
- investments in subsidiaries, associates and joint arrangements where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred income tax is measured using tax rates of the period in which temporary difference is expected to be reversed, based on tax rates and laws that have been enacted or substantially enacted by the end of the reporting period.

Deferred tax assets are recognised only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

5.16 Employee benefits

The Group operates various post-employment benefits schemes which comprised defined benefit, defined contribution plans and other long-term benefits

5.16.1 Defined contribution

The Group provides provident fund, which is contributed by the employees and the Group, and managed by an external fund manager in accordance with the Provident Fund Act. B.E. 2530. The Group has no legal or constructive obligations to pay further contributions once the contributions have been paid even if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. The contributions are recognised as employee benefit expense when they are due.

5.16.2 Retirement benefits

The Group provides for post-employment benefits, payable to employees under the labour laws applicable in Thailand and other countries in which the Group has its operations, or when the term of service is terminated according to the agreement between the Group and employees. Typically, defined benefit plans define an amount of retirement benefit that an employee will receive on retirement, usually depends on many factors such as age, years of service and compensation.

The liability in respect of employee benefits is the present value of the defined benefit obligation at the end of the reporting date which is calculated by an independent actuary using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting estimated future cash flows using yields on government bonds that matches the terms and currency of the expected cash outflows.

Remeasurement gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity in other comprehensive income in the period in which they arise.

Past-service costs are recognised immediately in profit or loss.

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5.16.3 Other long-term benefits

The Group gives gold rewards to employees when they have worked for the Group for 10, 15, 20, 25 and 30 years.

These obligations are measured similar to defined benefit plans except remeasurement gains and losses that are charged to profit or loss.

5.17 Provisions

5.17.1 General provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events; it is probable that an outflow of resources will be required to settle the obligation; and the amount has been reliably estimated.

5.17.2 Provisions for decommissioning cost

The Group recognises provision for decommissioning costs, which are provided at the onset of completion of the project, for the estimate of the eventual costs that relate to the removal of the assets. The recognised provision for decommissioning costs is based on future removal cost estimates and incorporate many assumptions such as abandonment times and future inflation rate and discounted to present value at the discount rate estimated by the management. Those costs are included as part of the assets.

5.18 Revenue recognition

Revenue are recorded net of value added tax. They are recognised in accordance with the provision of goods or services, provided that collectability of the consideration is probable.

Multiple element arrangements involving delivery or provision of multiple products or services are separated into distinct performance obligations. Total transaction price of the bundled contract is allocated to each performance obligation based on their relative standalone selling prices or estimated standalone selling prices. Each performance obligation is recognised as revenue on fulfilment of the obligation to the customer as details below.

Revenue under the Power Purchase Agreements (PPA)

(a) Revenue under the PPA which are not classified as lease

- The Group recognises Capacity Payments or Availability Payments which are the revenue for maintaining availabilities of power plants as agreed with EGAT and industrial customers in accordance with terms of PPA. The Group recognises this revenue in profit or loss when rendering services to customer according to the agreements. If the Group receives consideration above the services rendered, the Group recognises the excess consideration as a contract liability. On the other hand, if the Group receives consideration less than the services rendered, the Group recognises the consideration as a contract asset.
- Energy Payments are recognised at a point in time when the controls over the products are transferred to the customers at destinations as stated in the agreements. The revenue from Energy Payments are recognised based on transaction price net of output tax, rebates and discounts.

(b) Revenue under the Power Purchase Agreements which are classified as lease

- Finance lease income under the power purchase agreements is recognised on an effective interest method over the period of the agreements. Rental income from operating lease under the power purchase agreements is recognised on a straight-line basis over the period of the agreements.
- Service income under finance and operating lease agreements related to power purchase agreements, which comprises revenue for maintaining availabilities of power plants, other service income and Energy Payments received from financial lease receivables and operating lease receivables with respect to the leased assets, is recognised when the services are rendered. If the Group receives consideration above the services rendered, the Group recognises the excess consideration as a contract liability. On the other hand, if the Group receives consideration less than the services rendered, the Group recognises the consideration as a contract asset.
- Contingent rents are recognised in profit or loss in the period in which they are incurred. Contingent rent is that portion of lease payments that is not fixed in amount but varies based on a future factor, such as the amount of use or production.

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Revenue under the steam and water purchase agreements

Revenue under the steam and water purchase agreements are recognised at a point in time when the controls over the products are transferred to customers at destinations as stated in the agreements. The revenue is recognised based on transaction price net of output tax, rebates and discounts.

Dividend income

Dividend income is recognised when the right to receive payment is established.

Interest income

Interest income are recognised by the effective interest rate method.

5.19 Dividend distribution

Dividend distribution to the Company's shareholders is recognised as a liability in the financial statements in the period in which the dividends are approved by the Company's shareholders, and interim dividend are approved by the Board of Directors.

5.20 Derivatives and hedging activities

5.20.1 Embedded derivative and derivatives that do not qualify for hedge accounting

Embedded derivative that is separately accounted for and derivatives that do not qualify for hedge accounting is initially recognised at fair value. Changes in the fair value are included in gains (losses) from measurement of financial instruments, net.

Fair value of derivative is classified as a current or non-current following its remaining maturity.

5.20.2 Hedge accounting

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The Group designates certain derivatives as either:

- hedges of the fair value of i) recognised assets or liabilities or ii) unrecognised firm commitments (fair value hedges); or
- hedges of a particular risk associated with the cash flows of i) recognised assets and liabilities and ii) highly probable forecast transactions (cash flow hedges).

At inception of the hedge relationship, the Group documents i) the economic relationship between hedging instruments and hedged items including whether changes in the cash flows of the hedging instruments are expected to offset changes in the cash flows of hedged items and ii) its risk management objective and strategy for undertaking its hedge transactions.

The full fair value of a hedging derivative is classified as a current or non-current asset or liability following the maturity of related hedged item.

Cash flow hedges that qualify for hedge accounting

The effective portion of changes in the fair value of derivatives that are designated and qualified as cash flow hedges is recognised in the cash flow hedge reserve within equity. The gain or loss relating to the ineffective portion is recognised immediately in profit or loss from measurement of financial instruments, net.

The Group has entered into foreign currency forward contracts, interest rate swap contracts, cross currency and interest rate swap contracts and commodity swap agreement to hedge forecast transactions. The Group generally designates only the change in fair value related to the spot component as the hedging instrument. Gains or losses relating to the effective portion of the change in the spot component are recognised as the cash flow hedge reserve in the other comprehensive income within equity. The change in the forward element that relates to the hedged item ('aligned forward element') is recognised as the cost of hedging reserve in other comprehensive income within equity.

In some cases, the Group may designate the full change in fair value of the derivatives (including forward points) as the hedging instrument. In such cases, the gains or losses relating to the effective portion of the change in fair value of the entire contract are recognised as the cash flow hedge reserve in the other comprehensive income within equity.

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Amounts accumulated in equity are reclassified in the periods when the hedged item affects profit or loss

When a hedging instrument expires, or is sold or terminated, or when a hedge no longer meets the criteria for hedge accounting, any cumulative deferred gain or loss and deferred costs of hedging in equity at that time remains in equity until the forecast transaction occurs. When the forecast transaction is no longer expected to occur, the cumulative gain or loss and deferred costs of hedging that were reported in equity are immediately reclassified to profit or loss.

5.21 Financial guarantee contracts

Financial guarantee contracts are recognised as a financial liability at the time the guarantee is issued. The liability is initially measured at fair value and subsequently at the higher of:

- The amount determined in accordance with the expected credit loss model under TFRS 9; and
- The amount initially recognised less the cumulative amount of income recognised in accordance with the principles of TFRS 15.

The fair value of financial guarantees is determined based on the present value of the difference in cash flows between a) the contractual payments required under the debt instrument; and b) the payments that would be required without the guarantee, or the estimated amount that would be payable to a third party for assuming the obligations.

Where guarantees in relation to loans or other payables are provided for no compensation, the fair values are accounted for as contributions and recognised as part of the cost of the investment.

5.22 Segment reporting

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The Steering Committee has been identified as the chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments that makes strategic decisions.

6 Financial risk management

6.1 Financial risk

The Group exposes to a variety of financial risk: market risk (including foreign exchange risk, interest rate risk and price risk), credit risk and liquidity risk. The Group's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Group's financial performance. The Group uses derivative financial instruments to hedge certain exposures.

Financial risk management is carried out by the Group treasury management division. The Group's policy includes areas such as foreign exchange risk, interest rate risk, price risk, credit risk and liquidity risk. The framework parameters are approved by the Board of Directors and used as the key communication and control tools for Treasury team.

The Group's risk management is controlled by a treasury management division under policies approved by the Board of Directors. The treasury management division, evaluates and manages financial risks in close co-operation with the Group's operating units. The board provides written principles for overall risk management, as well as policies covering specific areas, such as foreign exchange risk, interest rate risk, credit risk, use of derivative and other financial instruments as well as investment of excess liquidity.

The use of derivative contracts that are speculative in nature is prohibited. All derivative contracts must be approved by the Board of Directors of each company within the Group.

Where all relevant criteria are met, hedge accounting is applied to remove the accounting mismatch between the hedging instrument and the hedged item.

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6.1.1 Market risk

a) Foreign exchange risk

The Group are exposed to foreign exchange risk from future commercial transactions and net monetary assets and liabilities that are denominated in a currency that is not the entity's functional currency.

Financial instruments using for risk management

The Group uses a combination of foreign currency forwards and cross currency and interest rate swap to hedge its exposure to foreign currency risk. Under the Group's policy, the critical terms of such contracts must align with the hedged items. In respect of foreign currency risk arising from the generation and sale of electricity to EGAT, the formula for the calculation of the Availability Payment and Energy Payment charged to EGAT allows for the minimisation of the impact of foreign currency risk.

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Effects of hedge accounting on the financial position and performance

The effects of the foreign currency-related hedging instruments on the Group and the Company's financial position and performance are as follows:

Foreign currency forward contracts

	Consolidated financial statements	
	Power plant construction service contract US Dollar Million Baht	Power plant construction service contract Swedish Krona Million Baht
As at 31 December 2022		
Carrying amount	(11)	(47)
Notional amount	US Dollar 19 Million	Swedish Krona 385 Million
Maturity date	31 January 2023 - 28 June 2024	31 January 2023 - 28 June 2024
Change in discounted spot value of outstanding hedging instruments as at 1 January 2022	(36)	(109)
Change in value of hedged item used to determine hedge effectiveness	36	109
Weighted average hedged rate for outstanding hedging instruments (including forward points)	Baht 29.99 - 37.91 to US Dollar 1	Baht 3.34 - 3.35 to Swedish Krona 1

	Consolidated financial statements	
	Power plant construction service contract US Dollar Million Baht	Power plant construction service contract Swedish Krona Million Baht
As at 31 December 2021		
Carrying amount	39	73
Notional amount	US Dollar 18 Million	Swedish Krona 291 Million
Maturity date	10 January 2022 - 30 January 2023	10 January 2022 - 15 December 2022
Change in discounted spot value of outstanding hedging instruments as at 1 January 2021	61	(61)
Change in value of hedged item used to determine hedge effectiveness	(61)	61
Weighted average hedged rate for outstanding hedging instruments (including forward points)	Baht 29.89 - 33.58 to US Dollar 1	Baht 3.33 - 3.83 to Swedish Krona 1

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Cross currency and interest rate swap contract

As at 31 December 2021

	Consolidated financial statements
	Long-term loan
	US Dollar
	Million Baht
Carrying amount (liability)	(136)
Notional amount	US Dollar 86.5 Million
Maturity date	22 February 2022
Change in intrinsic value of outstanding hedge instruments as at 1 January 2021	353
Change in value of hedged item used to determine hedge effectiveness	(353)
Weighted average hedged rate for outstanding hedging instruments (including forward points)	Baht 35.02 to US Dollar 1
SWAP rate	2.79%

Sensitivity

As shown in the table above, the Group is primarily exposed to changes in Baht and US Dollar, Baht and Euro, Baht and Swedish Krona and Baht and Japanese Yen exchange rates. The sensitivity of profit or loss to changes in the exchange rates arises mainly from financial assets and financial liabilities denominated in US Dollar, Euro Swedish Krona, and Japanese Yen and the impact on other components of equity arises from foreign forward exchange and cross currency interest rate swap contracts designated as cash flow hedges.

	Consolidated financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
US Dollar to Baht exchange rate				
- increase 10%*	(663)	(10)	601	588
- decrease 10%*	663	10	(601)	(588)
Euro to Baht exchange rate				
- increase 10%*	19	8	-	-
- decrease 10%*	(19)	(8)	-	-
Swedish Krona to Baht exchange rate				
- increase 10%*	27	-	124	107
- decrease 10%*	(27)	-	(124)	(107)
Japanese Yen to Baht exchange rate				
- increase 10%*	14	-	-	-
- decrease 10%*	(14)	-	-	-

* Holding all other variables constant

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	Separate financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
US Dollar to Baht exchange rate				
- increase 10%*	257	333	430	395
- decrease 10%*	(257)	(333)	(430)	(395)
Euro to Baht exchange rate				
- increase 10%*	(1)	-	-	-
- decrease 10%*	1	-	-	-
Swedish Krona to Baht exchange rate				
- increase 10%*	(1)	-	-	-
- decrease 10%*	1	-	-	-
Japanese Yen to Baht exchange rate				
- increase 10%*	14	-	-	-
- decrease 10%*	(14)	-	-	-

* Holding all other variables constant

b) Interest rate risk

The Group's main interest rate risk arises from long-term borrowings with variable rates, which expose the Group to cash flow interest rate risk. Group policy is to maintain at fixed rate, using floating-to-fixed interest rate swaps to achieve this when necessary. Generally, the Group enters into long-term borrowings at floating rates and swaps them into fixed rates that are lower than those available if the Group borrowed at fixed rates directly. As at 31 December 2022, the Group's borrowings at variable rate were mainly denominated in Baht and US Dollars. (As at 31 December 2021, the Group's borrowings at variable rate were mainly denominated in Baht and US Dollars).

The exposure of the Group's borrowings to interest rate changes at the end of the reporting period are as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Long-term loans from financial institutions, net				
- Fixed rate borrowing	14,826	15,204	7,495	8,093
- Variable rate borrowing	43,139	42,058	3,425	3,495
Total Long-term loans from financial institutions, net	57,965	57,262	10,920	11,588
Long-term loans from related parties, net				
- Fixed rate borrowing	16,100	8,000	16,100	8,000
- Variable rate borrowing	-	-	10,437	11,631
Total Long-term loans from related parties, net	16,100	8,000	26,537	19,631
Debentures, net				
- Fixed rate debentures	51,450	44,371	51,450	41,457
Total debentures, net	51,450	44,371	51,450	41,457

An analysis by maturities is provided in Note 6.1.3

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Instruments used by the Group

The Group entered into interest rate swaps covering approximately 18% (2021: 29%) of the variable loan principal outstanding. The fixed interest rates of the interest rate swap contracts range between 1.96% and 4.49% (2021: 1.96% and 4.49%), and the variable rates of the loans from the market reference rate are as disclosed in Note 29.

The interest rate swap contracts require settlement of net interest receivable or payable between 3 months and 6 months. The settlement dates coincide with the dates on which interest is payable on the underlying debt.

Effect of hedge accounting on the financial position and performance

The effects of the interest rate-related hedging instruments on the Group financial position and performance are as follows:

Interest rate swap contracts

	Consolidated financial statements	
	Long-term loan Baht Million Baht	Long-term loan US Dollar Million Baht
As at 31 December 2022		
Carrying amount (liability)	(119)	(3)
Notional amount	Baht 2,813 Million	US Dollar 153 Million
Maturity date	31 January 2027	15 December 2023 - 31 October 2028
Change in fair value of outstanding hedge instruments as at 1 January 2022	157	589
Change in value of hedged item used to determine hedge effectiveness	(157)	(589)
Weighted average strike rate for outstanding hedging instruments for the year	3.60% - 3.63%	1.96% - 4.49%
	Consolidated financial statements	
	Long-term loan Baht Million Baht	Long-term loan US Dollar Million Baht
As at 31 December 2021		
Carrying amount (liability)	(277)	(592)
Notional amount	Baht 3,253 Million	US Dollar 179 Million
Maturity date	31 January 2027	15 December 2023 - 31 October 2028
Change in fair value of outstanding hedge instruments as at 1 January 2021	215	350
Change in value of hedged item used to determine hedge effectiveness	(215)	(350)
Weighted average strike rate for outstanding hedging instruments for the year	3.60% - 3.63%	1.96% - 4.49%

In addition, the Group has entered into a cross currency and interest rate swap contract to hedge its floating interest rate risk on foreign currency borrowings which are not in its functional currencies. The impact of these interest rate hedging instruments on the Group's financial position and operational results is disclosed together with the hedging foreign exchange rate risk in Note 6.1.1 (a).

Sensitivity

Profit or loss is sensitive to higher or lower interest income from loan to related parties, and interest expenses from borrowings as a result of changes in interest rates. Other components of equity changes as a result of an increase or decrease in the fair value of the cash flow hedges of borrowings and the fair value of interest rate swap contract.

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	Consolidated financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Interest rate - increase 1.0%*	(332)	(272)	162	200
Interest rate - decrease 1.0%*	332	272	(162)	(200)

* Holding all other variables constant.

	Separate financial statements			
	Impact to net profit		Impact to other components of equity	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Interest rate - increase 1.0%*	(109)	(125)	-	-
Interest rate - decrease 1.0%*	109	125	-	-

* Holding all other variables constant

Effect of IBOR reform

The Group holds financial instruments which mature after 2022 and reference USD LIBOR and THBFX.

In 2022, the Group established an IBOR transition plan to amend existing contracts that reference USD LIBOR and THBFX with maturity after 30 June 2023 to other reference rates or include fallback provisions. There have been general communications with counterparties, but specific changes required by the IBOR reform haven't been agreed on yet. Transition risks mainly relate to the potential impact of rate differences if debt and hedging swaps don't transition to the new benchmark interest rate at the same time and/or the rates move by different amounts. This could result in hedge ineffectiveness and a net cash expense for the Group. The Group plans to complete the transition before the USD LIBOR and THBFX cessation date.

The following table contains details of all the financial instruments the Group holds as at 31 December 2022 which reference USD LIBOR and THBFX and haven't transitioned to an alternative interest rate benchmark yet.

	Consolidated financial statements		Separate financial statements	
	USD LIBOR Baht	THBFX Baht	USD LIBOR Baht	THBFX Baht
Non-derivative assets				
Measured at amortised cost				
- Long - term loans to related parties	100	-	100	-
Total assets	100	-	100	-
Non-derivative liabilities				
Measured at amortised cost				
- Long - term loans from financial institutions	5,112	4,313	-	-
Total liabilities	5,112	4,313	-	-
Derivatives				
- Interest rate swap	3	119	-	-
Total	3	119	-	-

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Hedge accounting

Hedge relationships

The Phase 1 amendments provided temporary relief from applying specific hedge accounting requirements to hedging relationships directly affected by the IBOR reform. The reliefs had the effect that IBOR reform should not generally cause hedge accounting to terminate prior to contracts being amended. However, any hedge ineffectiveness continued to be recorded in the profit or loss. Furthermore, the amendments set out triggers for when the reliefs would end, which included the uncertainty arising from interest rate benchmark reform no longer being present. Phase 2 amendments provided relief measures for issues that could affect financial reporting during the reform, including changes to contractual cash flows or hedging relationships arising from the replacement of one benchmark with an alternative benchmark.

Interest rate risk on variable-rate borrowings (cash flow hedge)

The following table only contains details of hedging instruments used in the Group's hedging strategies which reference USD LIBOR, THBFIX and haven't transitioned to an alternative interest rate benchmark yet, such that Phase 1 relief have been applied to the hedging relationship:

Consolidated financial statements						
	Carrying amount			Balance sheet line item	Changes in fair value used for calculating hedge ineffectiveness	Notional amount directly impacted by IBOR reform
	Notional	Assets	Liabilities			
	Million Baht	Million Baht	Million Baht		Million Baht	Million Baht
Cash flow hedges						
Interest rate						
- Interest rate swaps	8,114	18	(140)	Hedging derivatives	730	7,571

The notional amount of interest rate swaps at Baht 8,114 million as above will mature before the anticipated IBOR replacement at Baht 543 million.

For the year ended 31 December 2022, the Group adopted the following hedge accounting relief provided under Phase 2 of the amendments:

- **Hedge designation:** When Phase 1 amendments cease to apply, the Group will amend its hedge designation to reflect changes required by the IBOR reform. One or more of the following changes will be made:
 - a. Designating an alternative benchmark rate (contractually or non-contractually specified) as a hedged risk
 - b. Amending the hedged item's description, including the description of the designated portion of the cash flows or fair value being hedged; or
 - c. Amending the description of the hedging instrument.

The Group will update its hedge documentation by the end of the reporting period in which changes are made. These amendments don't require hedge relationships to be discontinued. As at 31 December 2022, the Group hasn't made any amendments to its hedge documentation in the reporting period relating to IBOR reform.

- **Amounts accumulated in the cash flow hedge reserve:** When the Group amends its hedge designation, the accumulated outstanding amount in the cash flow hedge reserve is deemed to be based on the alternative benchmark rate. As for discontinued hedging relationships, when the interest rate benchmark changed as required by IBOR reform, the amount accumulated in the cash flow hedge reserve is also deemed to be based on the alternative benchmark rate (for the purpose of assessing whether the hedged future cash flows are still expected to occur.)

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c) **Price risk**

The Group exposures to the fluctuations in coal price from Global Coal Newcastle Index which is partly consumed as fuel in electricity generation by the Group. The Group monitors coal price index in order to plan a purchase of coal at appropriate quantity.

As at 31 December 2022 and 2021, the Group did not entered into the commodity swap agreement to exposure the fluctuation in coal price.

6.1.2 **Credit risk**

Credit risk arises from cash and cash equivalents, contractual cash flows of debt investments carried at amortised cost, derivative financial instruments as well as credit exposures to customers, including outstanding receivables.

a) **Risk management**

The Group has no material credit risks for cash and short-term investments. This is because the Group uses quality financial institutions for cash and short-term investments. The Group manages credit risk by categorising the risks. To reduce potential risks for deposits with banks and financial institutions, the Group has laid down a policy to limit the transactions to be made with a particular financial institution and to invest surplus only in low-risk investments. In its experience, the Group has never suffered any losses from cash and investments.

For trade receivables, the Group's sales are made to state-owned enterprises and industrial users under the terms and conditions of the long-term Power Purchase Agreements and the long-term Electricity and Steam Sales and Purchase Agreements. There are no significant concentrations of credit risk for the Group's customers. However, the Group regularly monitors credit term compliance granted to each customer.

b) **Impairment of financial assets**

The Group and the Company have following financial assets that are subject to the expected credit loss model:

- Cash and cash equivalents
- Trade and other receivables
- Finance lease receivables
- Financial assets measured at amortised cost
- Loan to related parties

Management considered the amount of those expected credit losses on financial assets are immaterial.

6.1.3 **Liquidity risk**

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities and the availability of funding through an adequate amount of committed credit facilities to meet obligations when due and to close out market positions. Due to the dynamic nature of the underlying businesses, the Group Treasury maintains flexibility in funding by maintaining availability under committed credit lines.

The tables below analyse the Group's financial liabilities into relevant maturity groupings based on their contractual maturities for:

- (a) all non-derivative financial liabilities; and
- (b) net and gross settled derivative financial instruments for which the contractual maturities are essential for an understanding of the timing of the cash flows.

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The amounts disclosed in the table are the contractual undiscounted cash flows.

	Consolidated financial statements				
	Within 1 year Million Baht	1 - 5 years Million Baht	Over 5 years Million Baht	Total Million Baht	Carrying amount Million Baht
The maturity of financial liabilities as at 31 December 2022					
Trade and other payables	12,961	-	-	12,961	12,961
Payable for assets under construction	1,442	-	-	1,442	1,442
Lease liabilities	205	652	2,342	3,199	2,390
Short-term loans from financial institutions	3,371	-	-	3,371	3,371
Long-term loans from financial institutions	11,484	25,391	21,192	58,067	57,964
Long-term loans from a related party	-	16,100	-	16,100	16,100
Debentures	-	18,000	33,500	51,500	51,450
Interest payables of short-term loans from financial institutions	1	-	-	1	1
Interest payables of long-term loans from financial institutions and debentures	3,715	10,278	7,107	21,100	464
Interest payables of long-term loans from a related party	426	218	-	644	2
Retentions	-	3	-	3	3
Other financial liabilities	458	-	-	458	458
Total financial liabilities that are not derivatives	34,063	70,642	64,141	168,846	146,606
Derivative contracts					
- Foreign currency forwards	94	83	-	177	180
- Interest rate swaps	19	121	1	141	140
Total derivatives	113	204	1	318	320
Total	34,176	70,846	64,142	169,164	146,926
	Consolidated financial statements				
	Within 1 year Million Baht	1 - 5 years Million Baht	Over 5 years Million Baht	Total Million Baht	Carrying amount Million Baht
The maturity of financial liabilities as at 31 December 2021					
Trade and other payables	8,251	-	-	8,251	8,251
Payable for assets under construction	1,394	-	-	1,394	1,394
Lease liabilities	213	710	2,632	3,555	2,639
Long-term loans from financial institutions	7,152	29,326	21,814	57,292	57,262
Long-term loans from a related party	-	8,000	-	8,000	8,000
Debentures	2,000	17,000	25,500	44,500	44,370
Interest payables of long-term loans from financial institutions and debentures	2,389	7,124	5,241	14,754	333
Interest payables of long-term loans from a related party	210	319	-	529	1
Retentions	57	1	-	58	58
Other financial liabilities	587	-	-	587	587
Total financial liabilities that are not derivatives	22,253	61,480	55,187	138,920	122,895
Derivative contracts					
- Foreign currency forwards	31	72	-	103	101
- Interest rate swaps	325	853	60	1,238	869
- Cross currency and interest rate swaps	136	-	-	136	136
Total derivatives	492	925	60	1,477	1,106
Total	22,745	62,405	55,247	140,397	124,001

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	Separate financial statements				
	Within 1 year Million Baht	1 - 5 years Million Baht	Over 5 years Million Baht	Total Million Baht	Carrying amount Million Baht
The maturity of financial liabilities as at 31 December 2022					
Trade and other payables	6,058	-	-	6,058	6,058
Payable for assets under construction	205	-	-	205	205
Lease liabilities	83	193	188	464	410
Long-term loans from financial institutions	3,740	3,380	3,810	10,930	10,920
Long-term loans from related parties	1,203	20,875	4,468	26,546	26,538
Debentures	-	18,000	33,500	51,500	51,450
Interest payables of long-term loans from financial institutions and debentures	2,078	6,001	5,927	14,006	263
Interest payables of long-term loans from related parties	709	998	266	1,973	4
Retentions	-	2	-	2	2
Total financial liabilities that is not derivatives	14,076	49,449	48,159	111,684	95,850
	Separate financial statements				
	Within 1 year Million Baht	1 - 5 years Million Baht	Over 5 years Million Baht	Total Million Baht	Carrying amount Million Baht
The maturity of financial liabilities as at 31 December 2022					
Trade and other payables	3,055	-	-	3,055	3,055
Payable for assets under construction	313	-	-	313	313
Lease liabilities	97	270	342	709	580
Long-term loans from financial institutions	670	6,170	4,760	11,600	11,588
Long-term loans from related parties	1,203	12,841	5,606	19,650	19,631
Debentures	2,000	14,000	25,500	41,500	41,456
Interest payables of long-term loans from financial institutions and debentures	1,436	4,737	4,516	10,689	247
Interest payables of long-term loans from related parties	428	958	302	1,688	3
Retentions	57	1	-	58	58
Total financial liabilities that is not derivatives	9,259	38,977	41,026	89,262	76,931

6.2 Capital management

Risk management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

As at 31 December, net debt to equity ratios of the Group are as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Net debt	113,885	92,051	76,866	69,190
Equity (including non-controlling interests)	115,100	117,748	130,068	130,068
Net debt to equity ratio	0.99	0.78	0.59	0.53

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7 Derivatives and hedging activities

As at 31 December, the Group had following derivative contracts.

	Consolidated financial statements	
	2022	2021
	Million Baht	Million Baht
Current derivative assets		
Derivative contracts not qualifying as hedge accounting		
- Foreign currency forwards	1	-
Derivative contracts qualifying as hedge accounting		
- Foreign currency forwards	6	112
- Interest rate swaps	8	-
Total current derivative assets	15	112
Non-current derivative assets		
Derivative contracts qualifying as hedge accounting		
- Foreign currency forwards	-	5
- Interest rate swaps	10	-
Total non-current derivative assets	10	5
Current derivative liabilities		
Derivative contracts not qualifying as hedge accounting		
- Foreign currency forwards	(59)	(27)
Derivative contracts qualifying as hedge accounting		
- Foreign currency forwards	(43)	(4)
- Cross currency and interest rate swaps	-	(136)
Total current derivative liabilities	(102)	(167)
Non-current derivative liabilities		
Derivative contracts not qualifying as hedge accounting		
- Foreign currency forwards	(58)	(70)
Derivative contracts qualifying as hedges accounting		
- Foreign currency forwards	(21)	-
- Interest rate swaps	(140)	(869)
Total non-current derivative liabilities	(219)	(939)

7.1 Classification of derivatives

Derivatives are for the purpose of hedging against economic risks, not for investment for profit. The Group applies hedge accounting for some derivatives. This qualifies as a cash flow hedge instrument with a hedge ratio of 1:1 based on the relationship of the underlying risk variables between the hedged item and the hedging instrument. However, if a derivative contract doesn't meet the criteria for hedge accounting, it's classified as trading and measured at fair value through profit or loss.

The Group presents fair value of derivative contracts as current and non-current based on each maturity of hedged items.

7.2 Hedge effectiveness

Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments, to ensure that an economic relationship exists between the hedged item and hedging instrument.

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Exchange rate risk

For hedges of foreign currency purchases, the Group enters into hedge relationships where the critical terms of the hedging instrument match exactly with the terms of the hedged item. The Group therefore performs a qualitative assessment of effectiveness. If changes in circumstances affect the terms of the hedged item such that the critical terms no longer match exactly with the critical terms of the hedging instrument, the Group uses the hypothetical derivative method to assess effectiveness.

In hedges of foreign currency purchases, ineffectiveness may arise if the timing of the forecast transaction changes from what was originally estimated, or if there are changes in the credit risk of the derivative counterparty.

Interest rate risk

The Group enters into interest rate swaps that have similar critical terms as the hedged item, such as reference rate, reset dates, payment dates, maturities and notional amount. The Group does not hedge 100% of its loans, therefore the hedged item is identified as a proportion of the outstanding loans up to the notional amount of the swaps. As all critical terms matched during the year, there is an economic relationship.

Hedge ineffectiveness for interest rate swaps is assessed using the same principles as for hedges of foreign currency purchases. It may occur due to the credit value/debit value adjustment on the interest rate swaps which is not matched by the loan and differences in critical terms between the interest rate swaps and loans.

7.3 Hedging reserves

Hedging reserves comprise hedging costs and a cash flow hedge reserves. The cash flow hedge reserve is used to recognise gain/loss relating to the effective portion of the change in fair value of the derivatives for which hedge accounting is applied.

Hedging reserves are listed in other components of equity, which consists of the following hedging instruments.

	Consolidated financial statements			
	Cash flow hedging reserves			
	Cost of hedging reserve	Spot component of currency forwards	Interest rate swaps	Total cash flow hedge reserves
	Million Baht	Million Baht	Million Baht	Million Baht
Opening balance 1 January 2022	10	74	(473)	(399)
Add Change in fair value of hedging instruments recognised in OCI	-	(52)	310	258
Add Costs of hedging deferred and recognised in OCI	(28)	-	-	-
Less Reclassification from OCI to profit or loss included in				
- Finance costs	-	8	144	152
- Currency exchange gain	-	(122)	-	(122)
- Property, plant and equipment, net	-	28	-	28
Less Deferred tax	6	29	(44)	(15)
Closing balance 31 December 2022	(12)	(35)	(63)	(98)

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	Consolidated financial statements			
	Cash flow hedging reserves			
	Cost of hedging reserve	Spot component of currency forwards	Interest rate swaps	Total cash flow hedge reserves
	Million Baht	Million Baht	Million Baht	Million Baht
Opening balance 1 January 2021	9	24	(807)	(783)
<u>Add</u> Change in fair value of hedging instruments recognised in OCI	-	74	134	208
<u>Add</u> Costs of hedging deferred and recognised in OCI	1	-	-	-
<u>Less</u> Reclassification from OCI to profit or loss included in				
- Finance costs	-	56	235	291
- Currency exchange gain	-	(28)	-	(28)
- Property, plant and equipment, net	-	(39)	-	(39)
<u>Less</u> Deferred tax	-	(13)	(35)	(48)
Closing balance 31 December 2021	10	74	(473)	(399)

Note

- 1) Derivatives consist of foreign currency forward, cross currency and interest rate swap.
- 2) Cost of hedges consists of cost of hedges of foreign currency forward and cross currency and interest rate swap.

7.4 Amounts recognised in profit or loss

In addition to the amounts disclosed in the reconciliation of hedging reserves above, the following amounts were recognised in profit or loss in relation to derivatives presented in note 7.3.

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Closing balance 31 December				
Net gain/(loss) on derivatives not qualifying as hedges included in net gains/(losses) from measurement of financial instruments, net	106	(38)	-	-

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8 Fair value

The following table presented financial assets and liabilities that are measured at fair value in each level including fair value of financial assets and financial liabilities. The table exclude financial assets and liabilities measured at amortised cost where their carrying value approximated fair value.

		Consolidated financial statements				
Fair value level		Fair value through profit or loss (FVPL)	Fair value through other comprehensive income (FVOCI)	Amortised cost	Total carrying value	Fair value
		Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
As at 31 December 2022						
Assets						
Financial assets						
3	- Other long-term investments	-	5,303	-	5,303	5,303
2	- Long-term loans to a related party (fixed rate portion)	-	-	1,617	1,617	1,527
Derivatives that qualifying as hedge accounting						
2	- Foreign currency forwards	6	-	-	6	6
2	- Interest rate swap	18	-	-	18	18
Total assets		24	5,303	1,617	6,944	6,854
Liabilities						
Long-term loans from financial institutions (fixed rate portion)						
2	Long-term loans from a related party (fixed rate portion)	-	-	14,826	14,826	14,680
2	Debentures	-	-	16,100	16,100	15,984
2	Derivatives not qualifying as hedge accounting	-	-	51,450	51,450	51,294
2	- Foreign currency forwards	116	-	-	116	116
Derivatives qualifying as hedge accounting						
2	- Foreign currency forwards	65	-	-	65	65
2	- Interest rate swap	140	-	-	140	140
Total liabilities		321	-	82,376	82,697	82,279

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		Separate financial statements				
		Fair value through profit or loss (FVPL) Million Baht	Fair value through other comprehensive income (FVOCI) Million Baht	Amortised cost Million Baht	carrying value Million Baht	Total fair value Million Baht
As at 31 December 2022	Fair value level					
Assets						
Financial assets						
- Other long-term investments	3	-	5,251	-	5,251	5,251
Long-term loans to a related party (fixed rate portion)	2	-	-	783	783	1,527
Total assets		-	5,251	783	6,034	6,778
Liabilities						
Long-term loans from financial institutions (fixed rate portion)	2	-	-	7,495	7,495	7,416
Long-term loans to a related party (fixed rate portion)	2	-	-	16,100	16,100	15,984
Debentures	2	-	-	51,450	51,450	51,294
Total liabilities		-	-	75,045	75,045	74,694

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		Consolidated financial statements					
		Fair value through profit or loss (FVPL)		Fair value through other comprehensive income (FVOCI)			
Fair value level		Million Baht	Million Baht	Million Baht	Million Baht	Total carrying value	Fair value
						Million Baht	Million Baht
As at 31 December 2021							
	Assets						
	Financial assets						
	- Other long-term investments	3	-	5,860	-	5,860	5,860
	Long-term loans to a related party (fixed rate portion)	2	-	-	676	676	707
Derivatives that qualifying as hedge accounting							
- Foreign currency forwards	2	116	-	-	-	116	116
	Total assets	116	5,860	676	6,652	6,683	6,683
	Liabilities						
	Long-term loans from financial institutions (fixed rate portion)	2	-	-	15,204	15,204	15,404
	Long-term loans from a related party (fixed rate portion)	2	-	-	8,000	8,000	7,805
	Debentures	2	-	-	44,370	44,370	45,665
	Derivatives not qualifying as hedge accounting						
	- Foreign currency forwards	2	97	-	-	97	97
	Derivatives qualifying as hedge accounting						
	- Foreign currency forwards	2	4	-	-	4	4
	- Interest rate swap	2	869	-	-	869	869
	- Cross currency and interest rate swap	2	136	-	-	136	136
	Total liabilities	1,106	-	67,574	68,680	69,980	69,980

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		Separate financial statements					
		Fair value					
		Fair value through profit or loss (FVPL)	Fair value through other comprehensive income (FVOCI)	Amortised cost	carrying value	Total	Total
		Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Fair value level							
As at 31 December 2021							
Assets							
Financial assets							
	3	-	5,181	-	5,181	5,181	5,181
	2	-	-	676	676	707	707
Long-term loans to a related party (fixed rate portion)							
Total assets		-	5,181	676	5,857	5,888	
Liabilities							
	2	-	-	8,093	8,093	8,326	8,326
	2	-	-	8,000	8,000	7,805	7,805
	2	-	-	41,457	41,457	42,834	42,834
Long-term loans from financial institutions (fixed rate portion)							
Long-term loans to a related party (fixed rate portion)							
Debentures							
Total liabilities		-	-	57,550	57,550	58,965	58,965

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Fair value of following financial assets and financial liabilities measured at amortised cost where their carrying value approximated fair value are as follows:

Consolidated financial statements	Separate financial statements
Financial assets	Financial assets
- Cash and cash equivalents	- Cash and cash equivalents
- Deposits at financial institutions used as collateral	- Trade receivables
- Financial assets measured at amortised cost	- Finance lease receivable
- Trade receivables	- Other receivables
- Finance lease receivable	- Dividend receivables
- Other receivables	- Short-term loans to a related party
- Dividend receivables	- Long-term loans to and interest receivables from related parties (float rate portion)
- Short-term loans to related parties	
- Long-term loans to and interest receivables from related parties (float rate portion)	
Financial liabilities	Financial liabilities
- Trade payables	- Trade payables
- Other payables	- Other payables
- Payable for assets under construction	- Payable for assets under construction
- Retentions	- Retentions
- Other current liabilities	- Other current liabilities
- Short-term loans from financial institutions	- Long-term loans from financial institutions (float rate portion)
- Long-term loans from financial institutions (float rate portion)	- Long-term loans from a related party (float rate portion)
- Other non-current liabilities	- Other non-current liabilities

8.1 Valuation techniques used to measure fair value level 2

Valuation techniques used to measure fair value level 2 for derivatives are as follows:

- Fair values of foreign currency forward contracts are determined using forward exchange rates that are quoted in an active market.
- Fair values of interest rate swap contracts are determined using forward interests extracted from observable yield curves.
- Fair values of cross currency and interest rate swap contracts are determined using forward interests extracted from observable yield curves and using forward exchange rates that are quoted in an active market.
- Fair value of commodity swap agreement is calculated by using forward price of coal.

Fair value of debt instruments is determined from discounted contractual cash flows where discount rate extracted from price of counterparty's debt instruments.

8.2 Valuation techniques used to measure fair value level 3

Changes in level 3 financial assets measured at fair value through other comprehensive income for year ended 31 December 2022 are as follows:

	Consolidated financial statements
	Financial assets measured at fair value through other comprehensive income
	Million Baht
Opening balance as at 1 January 2022	5,860
Share of other comprehensive income	
- change in fair value through other comprehensive income (expense)	59
- Exchange difference on translation of the financial information	(2)
- Disposal of an investment	(614)
Closing balance as at 31 December 2022	5,303

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	Separate financial statements
	Financial assets measured at fair value through other comprehensive income Million Baht
Opening balance as at 1 January 2022	5,181
Share of other comprehensive income	
- Change in fair value through other comprehensive income (expense)	70
Closing balance as at 31 December 2022	5,251

The following table summarises the quantitative information about the significant unobservable inputs used in level 3 fair value measurements.

	Consolidated financial statements				
	Fair value			Range of inputs	
	31 December 2022	31 December 2021		31 December 2022	31 December 2021
	Million Baht	Million Baht	Unobservable inputs		
Financial assets measured at fair value through other comprehensive income (expense)	5,303	5,860	Enterprise multiple ratio	7 times	-
			Growth rate of cash flows	0% - 3%	0% - 3%
			Risk-adjusted discount rate	6% - 17%	6% - 17%

	Separate financial statements				
	Fair value			Range of inputs	
	31 December 2022	31 December 2021		31 December 2022	31 December 2021
	Million Baht	Million Baht	Unobservable inputs		
Financial assets measured at fair value through other comprehensive income (expense)	5,251	5,181	Enterprise multiple ratio	7 times	-
			Growth rate of cash flows	0% - 3%	0% - 3%
			Risk-adjusted discount rate	6% - 17%	6% - 17%

Relationship of unobservable inputs to fair value are shown as follows:

	Consolidated financial statements			
	Change in fair value			
	Increase in assumptions		Decrease in assumptions	
	31 December 2022 Million Baht	31 December 2022 Million Baht	31 December 2021 Million Baht	31 December 2021 Million Baht
Unobservable inputs	Movement			
Financial assets measured at fair value through other comprehensive income (expense)	Enterprise multiple ratio	1 time	Increase by 162	Decrease by 162
	Growth rate of cash flows	1%	Increase by 6	Decrease by 5
	Risk-adjusted discount rate	1%	Decrease by 182	Increase by 194

	Consolidated financial statements			
	Change in fair value			
	Increase in assumptions		Decrease in assumptions	
	31 December 2021 Million Baht	31 December 2021 Million Baht	31 December 2021 Million Baht	31 December 2021 Million Baht
Unobservable inputs	Movement			
Financial assets measured at fair value through other comprehensive income	Growth rate of cash flows	1%	Increase by 114	Decrease by 98
	Risk-adjusted discount rate	1%	Decrease by 318	Increase by 362

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			Separate financial statements	
			Change in fair value	
			Increase in assumptions	Decrease in assumptions
			31 December 2022	31 December 2022
			Million Baht	Million Baht
	Unobservable inputs	Movement		
Financial assets measured at fair value through other comprehensive income	Enterprise multiple ratio	1 time	Increase by 162	Decrease by 162
	Growth rate of cash flows	1%	Increase by 6	Decrease by 5
	Risk-adjusted discount rate	1%	Decrease by 178	Increase by 189
			Separate financial statements	
			Change in fair value	
			Increase in assumptions	Decrease in assumptions
			31 December 2021	31 December 2021
			Million Baht	Million Baht
	Unobservable inputs	Movement		
Financial assets measured at fair value through other comprehensive income	Growth rate of cash flows	1%	Increase by 105	Decrease by 90
	Risk-adjusted discount rate	1%	Decrease by 271	Increase by 310

The Group's valuation processes

The Company regularly discuss valuation processes and results.

Significant unobservable input of fair value hierarchy level 3 is risk adjusted discount rate. It is estimated based on public companies' weighted average cost of capital and cost of equity that, are in opinion of the Group, in a comparable financial position with the counterparty in the contract.

9 Critical accounting estimates and judgements

Estimates, assumptions and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

During the year 2022, the Group makes estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are outlined below.

9.1 Impairment of goodwill

The Group annually tests for impairment of goodwill in accordance with the accounting policy stated in Note 5.10. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations use cash flow projections based on financial budgets covering the remaining period of the long-term power purchase agreements of the Group and assumed electricity tariffs and capacity of the power plants stated in the agreements. Discount rates used are based on pre-tax weighted average cost of capital (see in Note 24). If the discount rate used in the testing of goodwill impairment increased by 0.18% per annum, the recoverable amount would be equal to the carrying amount.

9.2 Fair value estimation of net assets arising from an acquisition of investments in associates

The Group estimates fair value of net assets arising from an acquisition of investments in subsidiaries by basing on the valuation technique (the discounted cash flows) that involves many assumptions for example the electricity tariffs, assumed capacity of the power plants, growth rate, operating expenditures, etc. The assumptions used also involved significant management judgement to assess the future cash flows and discounted rate applied for the future cash flows (Note 19.2).

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For the year ended 31 December 2022

10 Segment information - consolidated financial statements

The Group has three segment reports, which comprise Independent Power Producer (IPP), Small Power Producer (SPP) and others, as follows:

Consolidated financial statements				
For the year ended 31 December 2022				
	IPP	SPP	Others	Total
	Million Baht	Million Baht	Million Baht	Million Baht
Revenue from sales and services				
- External revenue	41,721	80,519	843	123,083
Revenue from finance leases	602	-	-	602
Cost of sales and services	(38,018)	(81,404)	(902)	(120,324)
Segment results	4,305	(885)	(59)	3,361
Dividend income	-	192	-	192
Other income	160	2,347	32	2,539
Currency exchange gain (loss)	(173)	(31)	157	(47)
Administrative expenses	(73)	(2,091)	(146)	(2,310)
Gain/(loss) from remeasurement of financial instruments, net	(29)	(76)	211	106
Finance costs	(1,399)	(2,163)	(737)	(4,299)
Share of profit from investments in associates and joint ventures, net	1,274	14	251	1,539
Profit before income tax	4,065	(2,693)	(291)	1,081
Income tax	236	111	29	376
Profit for the year	4,301	(2,582)	(262)	1,457
Attributable to:				
Owners of the parent	4,184	(3,034)	(259)	891
Non-controlling interests	117	452	(3)	566
Timing of revenue recognition				
Point in time	36,631	76,538	843	114,012
Over time	5,090	3,981	-	9,071
Total revenue from sales and services	41,721	80,519	843	123,083

Separate financial statements				
For the year ended 31 December 2022				
	IPP	SPP	Others	Total
	Million Baht	Million Baht	Million Baht	Million Baht
Timing of revenue recognition				
Point in time	18,440	23,682	206	42,328
Over time	165	348	-	513
Total revenue from sales and services	18,605	24,030	206	42,841

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Consolidated financial statements				
For the year ended 31 December 2021				
	IPP	SPP	Others	Total
	Million Baht	Million Baht	Million Baht	Million Baht
Revenue from sales and services				
- External revenue	17,558	55,889	689	74,136
Revenue from finance leases	737	-	-	737
Cost of sales and services	(14,966)	(48,176)	(594)	(63,736)
Segment results	3,329	7,713	95	11,137
Dividend income	-	256	-	256
Other income	38	2,892	89	3,019
Currency exchange gain (loss)	(102)	50	(3)	(55)
Administrative expenses	(45)	(2,785)	(133)	(2,963)
Gain/(loss) from remeasurement of financial instruments, net	(44)	-	6	(38)
Finance costs	(1,353)	(2,212)	(295)	(3,860)
Share of profit from investments in associates and joint ventures, net	943	334	259	1,536
Profit before income tax	2,766	6,248	18	9,032
Income tax	(45)	(1,139)	(8)	(1,192)
Profit for the year	2,721	5,109	10	7,840
Attributable to:				
Owners of the parent	2,717	4,591	10	7,318
Non-controlling interests	4	518	-	522
Timing of revenue recognition				
Point in time	12,458	52,512	689	65,659
Over time	5,100	3,377	-	8,477
Total revenue from sales and services	17,558	55,889	689	74,136
Separate financial statements				
For the year ended 31 December 2021				
	IPP	SPP	Others	Total
	Million Baht	Million Baht	Million Baht	Million Baht
Timing of revenue recognition				
Point in time	5,182	16,780	107	22,069
Over time	184	343	-	527
Total revenue from sales and services	5,366	17,123	107	22,596

Geographical information

The Group is managed and operates principally in Thailand. There are no material revenues derived from, or assets located in, foreign countries.

Major customers

For the year ended 31 December 2022, the Group earned revenue from a single customer from both SPP and IPP businesses, totalling approximately Baht 69,000 million of the Group's total revenue (2021: Baht 32,474 million).

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11 Cash and cash equivalents

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Cash on hand and deposits at financial institutions				
- maturities within three months	6,536	13,619	4,342	3,486
Promissory notes				
- maturities within three months	7,700	174	7,700	-
Total cash and cash equivalents	14,236	13,793	12,042	3,486

As at 31 December 2022, the interest rates on deposits at financial institutions with maturities within three months were 0.05% to 0.60% per annum (as at 31 December 2021: 0.05% to 0.50% per annum). The interest rates on short-term investments in promissory notes with maturities within three months were 0.90% to 1.20% per annum (as at 31 December 2021: 0.30% to 0.60% per annum).

As at 31 December 2022, the Group's deposits at financial institutions of Baht 1,125 million were used as collateral to secure credit facilities obtained from financial institutions. However, the pledged deposits at financial institutions can be withdrawn according to the objectives and conditions stipulated in the loan agreements for use as working capital required in the normal course of their business (Note 29).

12 Deposits at financial institutions used as collateral

As at 31 December 2022, deposits at financial institutions used as short-term collateral represented deposits in savings accounts of the Group which have been pledged as collateral for its long-term loans from financial institutions as described in Note 29. The deposits were for the purpose of principal repayment due in the next period.

13 Financial assets measured at amortised cost

As at 31 December 2022, financial assets measured at amortised cost represented fixed deposits with maturities over three months but not longer than one year. The financial assets of the Group bear interest rates at 0.60% to 0.80% per annum (as at 31 December 2021: interest rates at 0.45% to 0.70% per annum) which the particular financial assets of Baht 447 million (as at 31 December 2021: Baht 484 million) were pledged as collateral for long-term loans from financial institutions as described in Note 29.

14 Trade receivables, net

Trade receivables comprise:

As at 31 December	Note	Consolidated financial statements		Separate financial statements	
		2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Trade receivables - related parties	40.2	3,124	2,458	1,773	1,344
Trade receivables - third parties		17,055	10,985	5,355	3,898
Less Loss allowance		(1)	(2)	-	-
Total trade receivables, net		20,178	13,441	7,128	5,242

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Trade receivables as at 31 December can be analysed by aging as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Trade receivables - related parties				
Not overdue	2,864	2,447	1,513	1,310
Overdue less than 1 month	260	2	260	5
Overdue 1 - 2 months	-	-	-	7
Overdue 2 - 3 months	-	7	-	20
Overdue over 3 months	-	2	-	2
Total trade receivables - related parties	3,124	2,458	1,773	1,344
Trade receivables - third parties				
Not overdue	16,882	10,929	5,253	3,897
Overdue less than 1 months	104	1	102	-
Overdue 1 - 2 months	1	1	-	-
Overdue 2 - 3 months	8	1	-	-
Overdue over 3 months	60 ⁽¹⁾	53 ⁽¹⁾	-	1
Less Loss allowance	(1)	(2)	-	-
Total trade receivables - third parties	17,054	10,983	5,355	3,898
Total trade receivables	20,178	13,441	7,128	5,242

⁽¹⁾ The outstanding of trade receivables which are overdue more than 3 months, amounting to Baht 37 million, is due from EGAT, which resulted from an expiration date dispute of the Power Purchase Agreement entered into by the subsidiary (Project 1). The subsidiary submitted a dispute to the Thai Arbitration Institute (TAI) and on 21 November 2019, the TAI ruled that the expiration date of Project 1's Power Purchase Agreement was 31 March 2017, which gave the subsidiary the right to receive outstanding balance due from EGAT. Subsequently, on 18 February 2020, EGAT petitioned the Central Administrative Court to revoke the award of the TAI. Currently, the case remains in process at the Central Administrative Court.

15 Finance lease receivables, net

	Consolidated financial statements			
	Minimum payment		Present value of minimum payment	
As at 31 December	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Finance lease receivables				
- Less than one year	1,945	2,204	1,430	1,522
- Later than one year and not later than five years	4,454	5,896	3,817	4,765
- Later than five years	-	351	-	351
	6,399	8,451	5,247	6,638
Less Deferred financial revenue	(1,152)	(1,813)		
Present value of minimum payment	5,247	6,638		
Finance lease receivables can be analysed as follows:				
- Current portion of finance lease receivables			1,430	1,522
- Non-current portion of finance lease receivables			3,817	5,116
			5,247	6,638

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As at 31 December	Separate financial statements			
	Minimum payment		Present value of minimum payment	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Finance lease receivables				
- Less than one year	1,215	1,307	933	917
- Later than one year and not later than five years	2,065	3,080	1,879	2,613
- Later than five years	-	116	-	116
	3,280	4,503	2,812	3,646
<u>Less</u> Deferred financial revenue	(467)	(857)		
Present value of minimum payment	2,813	3,646		
Finance lease receivables can be analysed as follows:				
- Current portion of finance lease receivables			933	917
- Non-current portion of finance lease receivables			1,879	2,729
			2,812	3,646

As at 31 December 2022 and 2021, the Group and the Company had no overdue balances of finance lease receivables.

16 Other receivables

As at 31 December	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Million Baht	Million Baht	Million Baht	Million Baht
Other receivables - related parties	40.2	64	149	76	144
Other receivables - third parties		1,993	1,059	150	101
Prepaid expenses		762	560	166	167
Total other receivables		2,819	1,768	392	412

17 Fuel, spare parts and supplies, net

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Coal	5,842	989	-	-
Diesel fuel	184	307	10	29
Spare parts and supplies	6,161	5,908	761	620
	12,187	7,204	771	649
<u>Less</u> Allowance for obsolescence of spare parts and supplies	(272)	(266)	-	-
Fuel, spare parts and supplies, net	11,915	6,938	771	649

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18 Assets and liabilities held-for-sale

Ichinoseki Solar Power 1 GK

During the year 2021, the Company's Board of Directors approved the Company to enter into a share purchase agreement with CES Iwate Taiyoko Hatsudensho GK to sell 100% of shareholding interests in Ichinoseki Solar Power 1 GK. The consideration amount was JPY 3,860 million which is equivalent to Baht 1,119 million. As at 31 December 2021, the assets and liabilities (which are excluded related party transactions with the Company) of Ichinoseki Solar Power 1 GK of Baht 625 million were classified as the assets and liabilities held-for-sale in the consolidated statement of financial position. Also, the investment in the subsidiary of Baht 504 million was classified as the asset held-for-sale in the separate statement of financial position.

On 18 March 2022, the Company subsequently entered into the share purchase agreement and completely transferred shares on the same date. The Company fully received the aforementioned share capital on 27 May 2022. Consequently, the company recognised the gain on disposal of such investment amounting to Baht 789 million in the consolidated statement of income for the year ended 31 December 2022 and Baht 769 million in the separate statement of income for the year then ended as other income.

19 Investments in subsidiaries, associates and joint ventures

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Investments in subsidiaries (Note 19.1)	-	-	171,688	161,063
Investments in associates (Note 19.2)	41,446	24,623	3,847	1,871
Investments in joint ventures (Note 19.3)	2,925	3,077	2,829	2,814
Total investments in subsidiaries, associates and joint ventures	44,371	27,700	178,364	165,748

19.1 Investments in subsidiaries

Movements of investments in subsidiaries for the years ended 31 December are as follows:

	Separate financial statements	
	2022	2021
	Million Baht	Million Baht
Opening net book value	161,063	146,425
Reclassification to asset held-for-sale	-	(504)
Reclassification to investments in associates	-	(465)
Additional investments ^{(a), (b), (c), (e), (f), (g), (h), (i)}	11,259	15,607
Disposal of investments ^{(c), (d)}	(634)	-
Closing net book value	171,688	161,063

Significant changes in investments in subsidiaries for the year ended 31 December 2022 are as follows:

(a) Global Renewable Synergy Company Limited

During the year ended 31 December 2022, Global Renewable Synergy Company Limited called for the additional paid-up share capital for 164,990,000 ordinary shares at Baht 5.12, totalling Baht 845 million. The Company paid for the additional paid-up share capital on 18 January 2022.

At the Extraordinary General Meeting of Shareholders of the subsidiary No. 1/2022, the shareholders approved a registered capital increase by issuing 122,000,000 ordinary shares at par value of Baht 100, totalling Baht 12,200 million. The subsidiary called for the additional paid-up share capital at Baht 73.85 per share, totalling Baht 9,009 million. The Company already paid for the additional paid-up share capital during the year ended 31 December 2022. Moreover, the Company also paid for additional paid-up share capital amounting to Baht 193 million on 5 January 2023 thus the Company presented such payable in the statement of financial position as at 31 December 2022 as other payables.

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(b) Energy Recovery Unit Company Limited

During the year ended 31 December 2022, Energy Recovery Unit Company Limited called for the additional paid-up share capital for 418,100,000 ordinary shares at Baht 2.31, totalling Baht 966 million. The Company paid for the additional paid-up share capital on 18 April 2022.

(c) Eurus Plus Company Limited and Boree Plus Company Limited

At the Company's Board of Directors' meeting No.11/2022 held on 23 August 2022, the Board of Directors approved the establishment of Eurus Plus Company Limited and Boree Plus Company Limited which were incorporated in Thailand. Their principal business operations are to study the feasibility and support the investment in renewable energy in Thailand. On 21 September 2022, the Company paid for 35,000 ordinary shares of each Company at Baht 100 per share, totalling Baht 7 million or equivalent to 100% of total issued and paid-up share capital of each company.

At the Extraordinary General Meeting of Shareholders of the subsidiary No. 1/2022 of both subsidiaries, the shareholders passed resolutions increasing the registered share capital of Eurus Plus Company Limited for 4,125,000 ordinary shares at Baht 100 and Boree Plus Company Limited for 7,165,500 ordinary shares at Baht 100 totalling Baht 1,129 million. Both subsidiaries partially called for the paid-up share capital at Baht 25 per share in each company, totalling Baht 282 million. The Company already paid for the paid-up share capital on 27 October 2022.

On 15 November 2022, the Company entered into a share sell and purchase agreement with the funds CI NMF I Cooperatief U.A to sell 49% of shareholding interests in Eurus Plus Company Limited and Boree Plus Company Limited at Baht 100 per share, totalling Baht 141 million. Then, the proportion of shareholding interest in both companies decrease from 100% to 51% of paid-up share capital. The Company already received full payment of shares disposal during the fourth quarter of 2022.

(d) GPSC Singapore Pte. Ltd.

During the year ended 31 December 2022, the Company completely transferred the 100% of the ordinary shares in GPSC Singapore Pte. which owns 11.1% in Anhui Axxiva New Energy Technology Co., Ltd. to Nuovo plus Company Limited as described in Note 19.2.

(e) Helios 1 Company Limited

On 12 October 2022, the Company and P. C. S. ESTATE Company Limited established Helios 1 Company Limited incorporated in Thailand. It's principal business operation is to study the feasibility and support the investment in renewable energy in Thailand. Helios 1 Company Limited has registered share capital of Baht 1 million and the Company has already partially paid for 5,000 ordinary shares at Baht 25 per share, totalling Baht 0.12 million or equivalent to 50% of the total issued and paid-up share capital of the subsidiary.

At the Extraordinary General Meeting of Shareholders of the subsidiary No. 1/2022, the shareholders passed a resolution increasing registered share capital by issuing 3,878,000 ordinary shares at Baht 100. The subsidiary called for the additional paid-up share capital in the same portion as the Company's investment at Baht 25 per share, totalling Baht 48 million. The Company already paid for the additional paid-up share capital on 27 October 2022.

(f) Helios 2 Company Limited

On 12 October 2022, the Company and P. C. S. ESTATE Company Limited established Helios 2 Company Limited incorporated in Thailand. It's principal of business operation is to study the feasibility and support the investment in renewable energy in Thailand. Helios 2 Company Limited has registered share capital of Baht 1 million and the Company has already partially paid for 5,000 ordinary shares at Baht 50 per share, totalling Baht 0.25 million or equivalent to 50% of the total issued and paid-up share capital of the subsidiary.

At the Extraordinary General Meeting of Shareholders of the subsidiary No. 1/2022, the shareholders passed a resolution increasing registered share capital by issuing 4,912,000 shares at par value of Baht 100. The subsidiary called for additional paid-up share capital in the same portion as the Company's investment at Baht 25 per share, totalling Baht 62 million. The Company already paid for the additional paid-up share capital on 27 October 2022.

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(g) Helios 3 Company Limited

On 12 October 2022, the Company and P. C. S. ESTATE Company Limited established Helios 3 Company Limited incorporated in Thailand. It's principal of business operation is to study the feasibility and support the investment in renewable energy in Thailand. Helios 3 Company Limited has registered share capital of Baht 1 million and the Company has already partially paid for 5,000 ordinary shares at Baht 25 per share, totalling Baht 0.12 million or equivalent to 50% of the total issued and paid-up share capital of the subsidiary.

At the Extraordinary General Meeting of Shareholders of the subsidiary No. 1/2022, the shareholders passed a resolution increasing registered share capital by issuing 630,000 shares at par value of Baht 100. The subsidiary called for additional paid-up share capital in the same portion as the Company's investment at Baht 25 per share, totalling Baht 8 million. The Company already paid for the additional paid-up share capital on 27 October 2022.

(h) Helios 4 Company Limited

On 12 October 2022, the Company and P. C. S. ESTATE Company Limited established Helios 4 Company Limited incorporated in Thailand. It's principal of business operation is to study the feasibility and support the investment in renewable energy in Thailand. Helios 4 Company Limited has registered share capital of Baht 1 million and the Company has already partially paid for 5,000 ordinary shares at Baht 25 per share, totalling Baht 0.12 million or equivalent to 50% of the total issued and paid-up share capital of the subsidiary.

At the Extraordinary General Meeting of Shareholders of the subsidiary No. 1/2022, the shareholders passed a resolution increasing registered share capital by issuing 1,270,000 shares at par value of Baht 100. The subsidiary called for additional paid-up share capital in the same portion as the Company's investment at Baht 25 per share, totalling Baht 16 million. The Company already paid for the additional paid-up share capital on 27 October 2022.

(i) Helios 5 Company Limited

On 12 October 2022, the Company and P. C. S. ESTATE Company Limited established Helios 5 Company Limited incorporated in Thailand. It's principal of business operation is to study the feasibility and support the investment in renewable energy in Thailand. Helios 5 Company Limited has registered share capital of Baht 1 million and the Company has already partially paid for 5,000 ordinary shares at Baht 25 per share, totalling Baht 0.12 million or equivalent to 50% of the total issued and paid-up share capital of the subsidiary.

At the Extraordinary General Meeting of Shareholders of the subsidiary No. 1/2022, the shareholders passed a resolution increasing registered share capital by issuing 1,238,000 shares at par value of Baht 100. The subsidiary called for additional paid-up share capital in the same portion as the Company's investment at Baht 25 per share, totalling Baht 15 million. The Company already paid for the additional paid-up share capital on 27 October 2022.

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The detail of investments in direct subsidiaries are as follows:

Portion of ordinary shares held by the Company										Separate financial statements			
Company	Business	2022		2021		Cost method		Dividend income during the year					
		%		%		2022	2021	2022	2021				
			Million Baht		Million Baht		Million Baht		Million Baht				
Direct subsidiaries established in Thailand													
Combined Heat and Power Producing Company Limited	Generate and supply electricity and cold water, construction and installation of electricity system services	100		100		266		266					
Natee Synergy Company Limited	Invest in other companies	100		100		7,062		7,062	115				
IRPC Clean Power Company Limited	Generate and supply electricity and steam for industrial use	51		51		1,965		1,965	-				
Glow Energy Public Company Limited and its subsidiaries	Generate and supply electricity	45.67		45.67		60,924		60,924	1,212				
GPSC Holding (Thailand) Company Limited (formally as ENGIE Holding (Thailand) Company Limited)	Invest in other companies	100		100		72,883		72,883	1,438				
Energy Recovery Unit Company Limited ^(b)	Generate and supply electricity	100		100		3,316		2,350	-				
GPSC Treasury Center Company Limited	Financial services	100		100		20		20	-				
Global Renewable Synergy Company Limited ^(a)	Invest in other companies	100		100		24,952		15,097	-				
Boree Plus Company Limited ^(c)	Generate and supply electricity	51		-		93		-	-				
Eurus Plus Company Limited ^(c)	Generate and supply electricity	51		-		54		-	-				
Helios 1 Company Limited ^(e)	Generate and supply electricity	50		-		49		-	-				
Helios 2 Company Limited ^(f)	Generate and supply electricity	50		-		62		-	-				
Helios 3 Company Limited ^(g)	Generate and supply electricity	50		-		8		-	-				
Helios 4 Company Limited ^(h)	Generate and supply electricity	50		-		16		-	-				
Helios 5 Company Limited ⁽ⁱ⁾	Generate and supply electricity	50		-		15		-	-				
Direct subsidiary established in Japan													
Ichinoseki Solar Power 1 GK ^(j)	Generate and supply electricity	-		100		-		-	134				
Direct subsidiary established in Hong Kong													
GPSC International Holdings Limited**	Invest in other companies	100		100		3		3	-				
Direct subsidiary established in Singapore													
GPSC Singapore Pte. Ltd. ^(k)	Invest in other companies	-		100		-		493	-				
Total investments in subsidiaries													
			171,688		161,063		2,899		2,866				

⁽ⁱ⁾ On 31 December 2021, the Company classified the investment in Ichinoseki Solar Power 1 GK as the asset held-for-sale in the separate statement of financial position, as described in Note 18.

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The detail of investments in indirect subsidiaries are as follows:

Company	Business	Portion of ordinary shares held by the Group		Cost method		Separate financial statements	
		2022	2021	2022	2021	Dividend income during the year	
		%	%	Million Baht	Million Baht	2022	2021
						Million Baht	Million Baht
Indirect subsidiaries established in Thailand							
Glow Energy Public Company Limited	Generate and supply electricity	54.16	54.16	-	-	-	-
Glow Company Limited	Provide management services, consultant services and management advisory for related companies	100	100	-	-	-	-
Glow IPP Company Limited	Generate and supply electricity to EGAT	95	95	-	-	-	-
Glow SPP 2 Company Limited	Generate and supply electricity and steam for industrial use	100	100	-	-	-	-
Glow SPP 3 Company Limited	Generate and supply electricity, steam and water for industrial use	100	100	-	-	-	-
Glow IPP 2 Holding Company Ltd	Invest in other companies	100	100	-	-	-	-
GHECO-One Company Limited**	Generate and supply electricity to EGAT	65	65	-	-	-	-
Glow IPP 3 Company Limited	Develop power generation projects	100	100	-	-	-	-
Glow SPP 11 Company Limited	Generate and supply electricity and water for industrial use	100	100	-	-	-	-
Houay Ho Thai Company Limited	Invest in other companies	49	49	-	-	-	-
Indirect subsidiary established in Laos							
Houay Ho Power Company Limited*	Generate and supply electricity to EGAT and Electricity du Laos (EDL)	67.25	67.25	-	-	-	-
Indirect subsidiary established in Myanmar							
Glow Energy Myanmar Company Limited**	Provide technical and consultancy services for power sector	100	100	-	-	-	-
Indirect subsidiary established in Taiwan							
Global Renewable Synergy Company Limited Taiwan	Invest in other companies	100	100	-	-	-	-

* As at 31 December 2022 and 2021, the Group pledged the common shares of GHECO-One Company Limited and Houay Ho Power Company Limited as collateral for their long-term loans from financial institutions (Note 29).

** At the Company's Board of Directors' meeting No.12/2022 on 27 September 2022, the Board of directors approved the dissolution of Glow Energy Myanmar Company Limited and GPSC International Holdings Limited. Both subsidiaries also registered for the dissolution during the fourth quarter of 2022.

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Summarised financial information for subsidiaries with material non-controlling interests

Set out below are the summarised financial information of each subsidiary that has non-controlling interests that are material to the Group. The amounts disclosed for each subsidiary are the amounts before inter-company elimination.

Summarised statement of financial position

As at 31 December	IRPC Clean Power Company Limited		GHECO-One Company Limited				Total	
	2022		2021		2022		2021	
	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Current assets	3,314	2,919	10,004	7,092	13,318	10,011		
Current liabilities	(1,567)	(1,505)	(5,120)	(2,419)	(6,687)	(3,924)		
Total current net assets	1,747	1,414	4,884	4,673	6,631	6,087		
Non-current assets	10,615	10,373	30,509	31,679	41,124	42,052		
Non-current liabilities	(4,215)	(4,561)	(20,949)	(22,553)	(25,164)	(27,114)		
Total non-current net assets	6,400	5,812	9,560	9,126	15,960	14,938		
Net assets	8,147	7,226	14,444	13,799	22,591	21,025		
Non-controlling interests	3,992	3,541	5,080	4,863	9,072	8,404		

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Summarised statement of comprehensive income

For the years ended 31 December

	IRPC Clean Power Company Limited		GHECO-One Company Limited				Total	
	2022	2021	2022	2021	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Revenue	9,297	6,299	15,871	8,855	25,168	15,154		
Profit (Loss)	922	1,019	30	(149)	952	870		
Other comprehensive income (expense)	-	-	614	489	614	489		
Total comprehensive income	922	1,019	644	340	1,566	1,359		
Income attributable to non-controlling interests	452	499	222	105	674	604		
Dividend paid to non-controlling interests	-	113	-	105	-	218		

Summarised of statement of cash flows

For the years ended 31 December

	IRPC Clean Power Company Limited		GHECO-One Company Limited				Total	
	2022	2021	2022	2021	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Net cash generated from (used in) operating activities	1,369	1,553	(3,200)	1,897	(1,831)	3,450		
Net cash generated from investing activities	(667)	(209)	(116)	(32)	(783)	(241)		
Net cash generated from (used in) financing activities	(494)	(1,424)	1,096	(1,733)	602	(3,157)		
Net increase (decrease) in cash and cash equivalents	208	(80)	(2,220)	132	(2,012)	52		
Cash and cash equivalents at the beginning of the year	712	792	2,321	2,188	3,033	2,980		
Exchange gain on cash and cash equivalents	-	-	-	1	-	1		
Cash and cash equivalents at the ending of the year	920	712	101	2,321	1,021	3,033		

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19.2 Investments in associates

Movements of investments in associates for the years ended 31 December are as follows:

	Consolidated financial statements	
	Investment at equity method	
	2022 Million Baht	2021 Million Baht
Opening net book value	24,623	8,251
Reclassification from investments in subsidiaries to investments in associates	-	577
Additional investments ^{(a), (b), (c), (d)}	17,824	15,466
Share of profit	1,239	1,018
Share of other comprehensive income (expense)		
- Cash flow hedges	(41)	(528)
- Loss from remeasurement of equity investments at fair value through other comprehensive income	(43)	-
- Exchange difference on translation of the financial statements	(1,913)	183
Dividend income	(243)	(344)
Closing net book value	41,446	24,623

	Separate financial statements	
	Investment at cost method	
	2022 Million Baht	2021 Million Baht
Opening net book value	1,871	924
Reclassification from investments in subsidiaries to investments in associates	-	465
Additional investments ^{(b), (c)}	1,976	482
Closing net book value	3,847	1,871

Significant changes in investments in associates during the year ended 31 December 2022 are as follows:

(a) Avaada Energy Private Limited

On 13 July 2021, Global Renewable Synergy Company Limited, a subsidiary of the Company has completed the acquisition by the way of subscription of new shares in Avaada Energy Private Limited (Avaada) to acquire 508,217,550 shares, a company that operates a large portfolio of solar power plants in India. The share acquisition represents 41.62% of the total registered and paid-up capital with total investment of Baht 14,984 million. The subsidiary made a full payment to Avaada Energy Private Limited (Avaada) on the same day.

During the year ended 31 December 2022, Avaada Energy Private Limited called for the additional paid-up share capital from the Company's subsidiary for 28,234,308 shares at Indian Rupee 66.41, totalling Indian Rupee 1,875 million which is equivalent to Baht 841 million. This increased the subsidiary's shareholding interest from 41.62% to 42.93% of its total registered and paid-up share capital. The subsidiary paid for the additional paid-up share capital on 18 January 2022.

During the second quarter of 2022, the Group has completed the measurement of the fair value of the acquired identifiable net assets at the acquisition date which was done in accordance with the measurement period of a business combination of Thai Financial Reporting Standard 3 Business Combinations. The fair value of net identifiable assets acquired mainly consists of cash and cash equivalents, property plant and equipment, the rights to power purchase agreements and favourable Engineering, Procurement and Construction (EPC) contracts. Such the measurement of fair value does not have significant impact to the consolidated financial statements for the year ended 31 December 2021.

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Details of the investment are described as follows:

	Consolidated financial statements Million Baht
Fair value of identifiable net assets acquired	4,255
Rights to power purchase agreements and favourable EPC contracts (included in investments in associates)	5,262
Goodwill (included in investments in associates)	5,467
Purchase consideration	14,984

Right to power purchase agreements and favourable EPC contracts which presented as intangible assets are amortised using the straight-line method based on their estimated period of Avaada's power purchase agreements.

(b) Nuovo Plus Company Limited

On 11 January 2022, the Company and Arun Plus Company Limited, a subsidiary of PTT Public Company Limited, jointly established Nuovo Plus Company Limited, which was incorporated in Thailand. The principal business operation is to study the feasibility of the battery business and support investment in the battery value chain, supporting the electric vehicle industry in line with Thailand's automotive industry policy of promoting electric vehicles and energy storage system. Nuovo Plus Company Limited has registered share capital of Baht 4,200 million with the initial paid-up share capital of Baht 1,050 million. The Company owns 49% of the shareholding interests. The Company paid for the initial paid-up share capital in the same proportion as its original investment, totalling Baht 515 million.

Then, on 11 February 2022, the 2/2022 Board of Directors of the Company approved their transfer of the assets related to the battery business, which is currently being operated by the Group, to Nuovo plus Company Limited which is an associate of the Company. The battery business consists of assets, contracts and agreements related to the battery plant in Map Ta Phut Industrial Estate, Rayong (Flash Project) and 100% of the ordinary shares of GPSC Singapore Pte. Ltd. of Baht 493 million that holds 11.1% in Anhui Axxiva New Energy Technology Co., Ltd. which operates a battery plant of Baht 614 million including relevant contracts and other agreements (Axxiva Project)

On 28 February 2022, the Company entered into an assets sale and purchase related to the battery business agreements with Nuovo Plus Company Limited. The Company has already received the consideration amounting to Baht 2,511 million and the transaction was completed on 29 April 2022. Consequently, the Company recognized amounting to Baht 389 million gain from disposal of the battery business in the consolidated statement of comprehensive income for the year ended 31 December 2022 and Baht 516 million in the separate statement of comprehensive income for the year ended presented as other income.

During the year ended 31 December 2022, Nuovo Plus Company Limited called for the additional paid-up share capital in the same proportion as the Company's investment totalling Baht 1,286 million.

(c) Global Renewable Power Company Limited

During the year ended 31 December 2022, Global Renewable Power Company Limited called for the additional paid-up share capital for 175,175 ordinary shares at Baht 100, totalling Baht 175 million. The Company paid for the additional paid-up share capital on 26 August 2022.

(d) CI Changfang Limited and CI Xidao Limited and subsidiaries

On 26 September 2022, Global Renewable Synergy Company Limited Taiwan, an indirect subsidiary of the Company, has completed the conditions precedent of the share purchase agreement to acquire shares in CI Changfang Limited and CI Xidao Limited, the Companies which are developing offshore wind power project in Taiwan. The share acquisition represents 25% of the total registered and paid-up capital totalling TWD 11,020 which is equivalent to Baht 15,007 million. The indirect subsidiary made a full payment to the funds Copenhagen Infrastructure II K/S ("CI-II") and Copenhagen Infrastructure III K/S ("CI-III") on the same day.

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Details of the consideration paid at the acquisition date is as follows:

	Million Baht
Cash	15,007
Total purchase consideration	15,007

Details of fair value of the acquired net assets recognised at the acquisition date is as follows:

	Consolidated financial statements Million Baht
Estimated fair value of identifiable net assets acquired	3,288
Purchase price over the estimated fair value of net assets acquired (Included in investments in associates)	11,719
Purchase consideration	15,007

The Group has been under the process of determining fair value of the net assets acquired from the business acquisition. The above estimated fair value needs to be further adjusted to the fair value of the net assets acquired which must be completed within 12 months from the acquisition date.

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The details of the investments in associates are as follows:

Company	Business	Portion of ordinary shares held by the Group				Cost Method				Equity Method				Consolidated financial statements			
		2022		2021		2022		2021		2022		2021		2022		2021	
		%	%	%	%	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
<u>Direct associate established in Thailand</u>																	
Bangpa-in Cogeneration Company Limited	Generate and supply electricity	25	25			924	924	924	814			846	74			148	
Global Renewable Power Company Limited	Invest in other companies, generate and supply electricity and provide management services	50	50			1,122	1,122	947	1,222			1,102	-			-	
and its subsidiaries ^(c)																	
Nuovo Plus Company Limited and its subsidiaries ^(b)	Manufacturing and sale of battery	49	-			1,801	1,801	-	1,726			-	-			-	
<u>Indirect associate established in Laos</u>																	
Xayaburi Power Company Limited	Generate and supply electricity	25	25			6,994	6,994	6,994	8,366			7,254	122			175	
<u>Indirect associate established in Thailand</u>																	
Eastern Seaboard Clean Energy Company Limited and its subsidiaries	Studying, generating and supply electricity for industrial use, including generating electricity from renewable energy	33	33			339	339	339	337			372	47			21	
<u>Indirect associate established in India</u>																	
Avaada Energy Private Limited ^(a)	Generate and supply electricity	41.93	41.62			15,826	15,826	14,984	14,604			15,049	-			-	
<u>Indirect associate established in Taiwan</u>																	
CI Changfang Limited, CI Xidao Limited and its subsidiaries ^(d)	Invest in other companies, generate and supply electricity	25	-			15,007	15,007	-	14,377			-	-			-	
Total investments in associates						42,013	42,013	24,188	41,446			24,623	243			344	

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The details of an investment in an associate are as follows:

Company	Business	Portion of ordinary shares held by the Company		Cost Method		Dividend income during the year	
		2022	2021	2022	2021	2022	2021
		%	%	Million Baht	Million Baht	Million Baht	Million Baht
Associate established in Thailand							
Bangpa-in Cogeneration Company Limited	Generate and supply electricity	25	25	924	924	74	148
Global Renewable Power Company Limited and its subsidiaries	Invest in other companies, generate and supply electricity and provide management services	50	50	1,122	947	-	-
Nuovo Plus Company Limited and its subsidiaries ^(b)	Manufacturing and sale of battery	49	-	1,801	-	-	-
Total investments in associates				3,847	1,871	74	148

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Summarised financial information for associates

The table below is the summarised financial information for an associate that is material to the Group. The financial information is included in its own financial statements which has been adjusted with adjustments for the equity method, including fair value adjustments and modifications for differences in accounting policies.

Summarised statement of financial position

As at 31 December	Xayaburi Power Company Limited		Avaada Energy Private Limited		Changfang & Xidao		Total	
	2022	2021	2022	2021	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Total current assets	8,278	5,510	5,424	10,665	2,518	-	16,220	16,175
Total non-current assets	126,320	128,970	68,420	38,100	71,172	-	265,912	167,070
Total current liabilities	(5,040)	(5,064)	(4,869)	(5,708)	(1,140)	-	(11,049)	(10,772)
Total non-current liabilities	(96,232)	(100,538)	(47,012)	(28,524)	(59,122)	-	(202,366)	(129,062)
Net assets	33,326	28,878	21,963	14,533	13,428	-	68,717	43,411

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Summarised statement of comprehensive income

	Xayaburi Power Company Limited		Avaada Energy Private Limited		Changfang & Xidao		Total	
	For the years ended 31 December							
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Revenue	16,230	14,245	6,083	1,388	54	-	22,367	15,633
Profit (loss) from continuing operations	5,095	3,783	(683)	(135)	1,078	-	5,490	3,648
Other comprehensive income (expense)	(164)	(2,122)	(766)	291	(802)	-	(1,732)	(1,831)
Gain (loss) on comprehensive income	4,931	1,661	(1,449)	156	276	-	3,758	1,817
Dividend received from associates	122	175	-	-	-	-	122	175
Reconciliation to carrying amounts:								
Opening net assets at 1 January	28,878	27,915	14,533	-	-	-	43,411	27,915
Adjust fair value of net assets	-	-	8,038	-	-	-	8,038	-
Net assets at acquisition date	-	-	-	14,377	13,152	-	13,152	14,377
Capital increase	-	-	841	-	-	-	841	-
Profit (loss) for the year	5,095	3,783	(683)	(135)	1,078	-	5,490	3,648
Other comprehensive income (expense) for the year	(164)	(2,122)	(766)	291	(802)	-	(1,732)	(1,831)
Dividends paid	(483)	(698)	-	-	-	-	(483)	(698)
Closing net assets	33,326	28,878	21,963	14,533	13,428	-	68,717	43,411
Group's share in associates (%)	25%	25%	42.93% ^(*)	41.62%	25%	-	-	-
Group's share in associates	8,331	7,219	9,429 ^(*)	6,049	3,357	-	21,117	13,268
Goodwill	35	35	5,175	9,000	11,020	-	16,230	9,035
Associate carrying amount	8,366	7,254	14,604	15,049	14,377	-	37,347	22,303

^(*)The Group had recognised the interest in Avaada Energy Private Limited at 41.62% for the period from 1 January 2022 to 17 January 2022. After that date, the Group has recognised the interest in Avaada Energy Private Limited at 42.93% (Note 19.2 (a))

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Individually immaterial associates

In addition to the interests in the associate disclosed above, the Group also has interests in a number of individually immaterial associates that are accounted for using the equity method as follows:

	Consolidated financial statements	
	2022 Million Baht	2021 Million Baht
Aggregate carrying amount of individually immaterial associates	4,099	2,320
The Group's share of:		
Profit from continuing operations	16	131
Other comprehensive income (expense)	(91)	-
Total comprehensive income	(75)	131

19.3 Investments in joint ventures

Movements of investments in joint ventures for the years ended 31 December are as follows:

	Consolidated financial statements	
	2022 Million Baht	2021 Million Baht
Opening net book value	3,077	2,914
Additional investments ^(a)	15	2
Share of profit	300	518
Share of other comprehensive income		
- Exchange difference on translation of financial statements	25	73
Dividend income	(491)	(430)
Dissolution of the joint venture ^(b)	(1)	-
Closing net book value	2,925	3,077

	Separate financial statements	
	2022 Million Baht	2021 Million Baht
Open net book value	2,814	2,814
Additional investments ^(a)	15	-
Closing net book value	2,829	2,814

Significant changes in investments in joint ventures for the year ended 31 December 2022 are as follows:

(a) Navanakorn Electricity Generating Company Limited

During the year ended 31 December 2022, Navanakorn Electricity Generating Company Limited called for the additional paid-up share capital in the same proportion as the Company's investment totalling Baht 15 million.

(b) Chaibadan Community Power Plant 1 Company Limited and Chaibadan Community Power Plant 2 Company Limited

At the Company's Board of Directors' meeting No.12/2022 on 27 September 2022, the Board of directors approved the operation cessation of Chaibadan Community Power Plant 1 Company Limited and Chaibadan Community Power Plant 2 Company Limited. Both joint ventures registered for dissolution with the Ministry of Commerce and completed the liquidation process on 25 November 2022 and 23 December 2022, respectively. The joint ventures returned the residual capital and share of loss to shareholders during the fourth quarter of 2022.

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The details of investments in joint ventures are as follows:

		Consolidated financial statements							
		Portion of ordinary shares held by the Group				Dividend income during the year			
		2022		2021		2022		2021	
		%	%	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Business									
Joint ventures established in Thailand									
That Solar Renewable Company Limited and its subsidiary		40	40	1,697	1,697	1,469	1,528	401	391
Navanakorn Electricity Generating Company Limited ^(a)		30	30	638	623	613	788	90	39
Chaibadan Community Power Plant 1 Company Limited ^(b)		-	49	-	1	-	1	-	-
Chaibadan Community Power Plant 2 Company Limited ^(b)		-	49	-	1	-	1	-	-
Joint venture established in Laos									
Nam Lik 1 Power Company Limited		40	40	494	494	843	759	-	-
Total investments in joint ventures				2,829	2,816	2,925	3,077	491	430

The detail of investments in joint ventures are as follows:

Company	Business	Separate financial statements							
		Portion of ordinary shares held by the Company		Cost Method		Dividend income during the year			
		2022	2021	2022	2021	2022	2021		
		%	%	Million Baht	Million Baht	Million Baht	Million Baht		
Joint ventures established in Thailand									
Thai Solar Renewable Company Limited and its subsidiary	Invest in other companies	40	40	1,697	1,697	401	391		
Navanakorn Electricity Generating Company Limited	Generate and supply electricity	30	30	638	623	90	39		
Joint venture established in Laos									
Nam Lik 1 Power Company Limited	Generate and supply electricity	40	40	494	494	-	-		
Total investments in joint ventures				2,829	2,814	491	430		

Global Power Synergy Public Company Limited

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Summarised financial information for joint ventures

The table below summarises the financial information for a joint venture that is material to the Group. The financial information is included in its own financial statements which has been adjusted with necessary adjustments for the equity method, including fair value adjustments and modifications for differences in accounting policies.

Summarised statement of financial position

As at 31 December

Current assets

Cash and cash equivalents	-	1
Other current assets (excluding cash)	616	559
Total current assets	616	560

Non-current assets

Current liabilities

Current financial liabilities (excluding trade payables)	(376)	(376)
Other current liabilities (including trade payables)	(354)	(273)

Total current liabilities

Non-current liabilities

Non-current financial liabilities	(730)	(1,105)
Other non-current liabilities	(26)	(46)
Total non-current liabilities	(756)	(1,151)

Total net assets

Thai Solar Renewable Company Limited	
2022	2021
Million Baht	Million Baht
-	1
616	559
616	560
4,454	4,973
(376)	(376)
(354)	(273)
(730)	(649)
(730)	(1,105)
(26)	(46)
(756)	(1,151)
3,584	3,733

Summarised statement of comprehensive income

For the years ended 31 December

Revenue	1,622	1,547
Depreciation and amortisation	(245)	(245)
Interest expenses	(49)	(59)
Profit from continuing operations	956	847
Income tax expenses	(99)	(9)

Post-tax profit from discontinued operations

Gain on comprehensive income

Total comprehensive income

Dividend received from joint ventures

Reconciliation to carrying amounts:

Opening net assets at 1 January	3,734	3,872
Profit for the year	857	838
Other comprehensive income	-	-
Dividends paid	(1,003)	(977)

Closing net assets

Group's share in joint ventures (%)	40%	40%
Group's share in joint ventures	1,435	1,493
Goodwill	35	35

Joint venture's carrying amount

Thai Solar Renewable Company Limited	
2022	2021
Million Baht	Million Baht
1,622	1,547
(245)	(245)
(49)	(59)
956	847
(99)	(9)
857	838
-	-
857	838
402	391
3,734	3,872
857	838
-	-
(1,003)	(977)
3,588	3,733
40%	40%
1,435	1,493
35	35
1,470	1,528

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	Consolidated financial statements	
	2022 Million Baht	2021 Million Baht
Aggregate carrying amount of individually immaterial joint ventures	1,455	1,549
The Group's share of:		
Profit from continuing operations	41	183
Other comprehensive income	26	-
Total comprehensive income	67	183

19.4 Dividend receivables from subsidiaries, associates and joint ventures

The movements of dividend receivables for the years ended 31 December can be analysed as follows:

	Consolidated financial statements	
	2022 Million Baht	2021 Million Baht
For the years ended 31 December		
Opening balance	91	59
Dividends declared by associates and joint ventures	734	774
Dividends received from associates and joint ventures	(719)	(742)
Closing balance	106	91

	Separate financial statements	
	2022 Million Baht	2021 Million Baht
For the years ended 31 December		
Opening balance	91	252
Dividends declared by subsidiaries, associates and joint ventures	3,634	3,444
Dividends received from subsidiaries, associates and joint ventures	(3,448)	(3,605)
Loss on exchange rate	(1)	-
Closing balance	106	91

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20 Financial assets measured at fair value through other comprehensive income

Movements of financial assets measured at fair value through other comprehensive income for the years ended 31 December are as follows:

	Consolidated financial statements	
	2022 Million Baht	2021 Million Baht
Opening book value	5,860	2,724
Additional investments	-	499
Share of other comprehensive income (expense)		
- Change in fair value through other comprehensive income	59	2,616
- Exchange difference on translation of the financial statements	(2)	21
Disposal of an investment	(614)	-
Closing book value	5,303	5,860

	Separate financial statements	
	2022 Million Baht	2021 Million Baht
Opening book value	5,181	2,661
Change in fair value through other comprehensive income	70	2,520
Closing book value	5,251	5,181

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For the year ended 31 December 2022

The details of financial assets measured at fair value through other comprehensive income are as follows:

Consolidated financial statements										
			Measured at fair value through other comprehensive income method							
			Portion of shares held by the Group						Dividend income during the year	
			2022	2021	2022	2021	2022	2021	2022	2021
			%	%	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Company			Business							
Other non-marketable equity securities										
Ordinary shares										
- Ratchaburi Power Company Limited			15	15	955	1,229	186			248
- San Palung Social Enterprise Company Limited			10	10	1	1	-			-
- Eastern Fluid Transport Company Limited			15	15	52	63	6			8
- Anhui Axxiva New Energy Technology Company Limited ^(a)			-	11	-	616	-			-
Preferred shares										
- Business Services Alliance Company Limited			25	25	-	-	-			-
- 24M Technologies, Inc.			14.17	14.17	4,295	3,951	-			-
Total financial assets measured at fair value through other comprehensive income					5,303	5,860	192			256

^(a) During the year ended 31 December 2022, the Company completely transferred the 100% of the ordinary shares of GPSC Singapore Pte. that holds 11.1% in Anhui Axxiva New Energy Technology Company Limited to Nuovo plus Company Limited as described in Note 19.2.

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The details of financial assets measured at fair value through other comprehensive income are as follows:

	Separate financial statements							
	Measured at fair value through other comprehensive income method						Dividend income during the period	
	Portion of shares held by the Company		2021 %		2022 Million Baht		2021 Million Baht	
	2022 %	2021 %	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht		
Company	Business							2021 Million Baht
<u>Other non-marketable equity securities</u>								
Ordinary shares								
- Ratchaburi Power Company Limited	15	15	955	1,229	186	248		
- San Palung Social Enterprise Company Limited	10	10	1	1	-	-		
Preferred shares								
- Business Services Alliance Company Limited	25	25	-	-	-	-		
- 24M Technologies, Inc.	14.17	14.17	4,295	3,951	-	-		
Total financial assets measured at fair value through other comprehensive income								
			5,251	5,181	186	248		

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21 Property, plant and equipment, net

	Consolidated financial statements											
	Buildings and building improvements		Power plant, machinery and equipment		Furniture, fixtures and office equipment		Vehicles		Construction in progress		Total	
	Land	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
As at 1 January 2021												
Cost	1,844	2,571	159,349	557	46	5,400	169,767					
Less Accumulated depreciation	-	(789)	(68,490)	(432)	(33)	-	(69,744)					
Less Allowance for impairment	-	-	(45)	-	-	-	(45)					
Net book value	1,844	1,782	90,814	125	13	5,400	99,978					
For the year ended 31 December 2021												
Opening net book value	1,844	1,782	90,814	125	13	5,400	99,978					
Additions	-	13	226	24	8	3,876	4,147					
Disposals and write-off, net	-	-	(864)	(2)	-	-	(866)					
Transfer in (out)	-	330	4,163	1	-	(4,556)	(62)					
Reclassification to asset held for sale, net	-	-	(1,621)	-	-	-	(1,621)					
Depreciation	-	(103)	(6,066)	(35)	(4)	-	(6,208)					
Loss on impairment	-	-	(17)	-	-	-	(17)					
Exchange difference on translation	-	1	228	-	1	-	230					
Closing net book value	1,844	2,023	86,863	113	18	4,720	95,581					
As at 31 December 2021												
Cost	1,844	2,916	161,141	555	56	4,720	171,232					
Less Accumulated depreciation	-	(893)	(74,216)	(442)	(38)	-	(75,589)					
Less Allowance for impairment	-	-	(62)	-	-	-	(62)					
Net book value	1,844	2,023	86,863	113	18	4,720	95,581					

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For the year ended 31 December 2022

	Consolidated financial statements						
	Land	Buildings	Power plant,	Furniture,	Vehicles	Construction in	Total
	Million Baht	and building improvements	machinery and equipment	fixtures and office equipment	Million Baht	progress	Million Baht
		Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
For the year ended 31 December 2022							
Opening net book value	1,844	2,023	86,863	113	18	4,720	95,581
Additions	-	10	365	33	3	4,832	5,243
Disposals and write-off, net	-	(2)	-	-	-	-	(2)
Transfer in (out)	-	165	4,532	33	3	(4,744)	(11)
Disposal of business unit, net (*)	-	(301)	(88)	(11)	-	(1,081)	(1,481)
Decrease of provision for decommissioning expenses	-	-	(185)	-	-	-	(185)
Depreciation	-	(110)	(6,083)	(39)	(5)	-	(6,237)
Loss on impairment	-	-	(338)	-	-	-	(338)
Exchange difference on translation	-	1	76	-	-	-	77
Closing net book value	1,844	1,786	85,142	129	19	3,727	92,647
As at 31 December 2022							
Cost	1,844	2,776	165,767	501	61	3,727	174,676
Less Accumulated depreciation	-	(990)	(80,225)	(372)	(42)	-	(81,629)
Less Allowance for impairment	-	-	(400)	-	-	-	(400)
Net book value	1,844	1,786	85,142	129	19	3,727	92,647

^(*) During the year ended 31 December 2022, the Company disposed its assets related to battery business to Nuovo Plus Company Limited which is an associate of the Company as described in Note 19.2.

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For the year ended 31 December 2022

	Separate financial statements						
	Land Million Baht	Buildings and building improvements Million Baht	Power plant, machinery and equipment Million Baht	Furniture, fixtures and office equipment Million Baht	Vehicles Million Baht	Construction in progress Million Baht	Total Million Baht
As at 1 January 2021							
Cost	581	928	25,756	161	7	2,898	30,331
Less Accumulated depreciation	-	(343)	(12,029)	(105)	(1)	-	(12,478)
Net book value	581	585	13,727	56	6	2,898	17,853
For the year ended 31 December 2021							
Opening net book value	581	585	13,727	56	6	2,898	17,853
Additions	-	18	161	46	8	976	1,209
Disposals, net	-	-	(3)	(1)	-	-	(4)
Transfer in (out)	-	328	2,053	2	-	(2,387)	(4)
Depreciation	-	(47)	(1,253)	(22)	(2)	-	(1,324)
Closing net book value	581	884	14,685	81	12	1,487	17,730
As at 31 December 2021							
Cost	581	1,274	27,961	203	15	1,487	31,521
Less Accumulated depreciation	-	(390)	(13,276)	(122)	(3)	-	(13,791)
Net book value	581	884	14,685	81	12	1,487	17,730

Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2022

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(^{vi}) During the year ended 31 December 2022, the Company disposed its assets related to battery business to Nuovo Plus Company Limited which is an associate of the Company as described in Note 19.2.

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During the year ended 31 December 2022, the Group recognised a Baht 338 million impairment loss for the power plant's discontinued machine in the consolidated statements of comprehensive income. Management determined the recoverable amount using value in use (31 December 2021: 17 million which the recoverable amount is equal to value in use).

Security

As at 31 December 2022, the Group's property, plant and equipment with a net book value of Baht 36,768 million were mortgaged and pledged as collateral for the long-term loans, as described in Note 29 (as at 31 December 2021: Baht 38,231 million).

Borrowing costs

The Group capitalised borrowing costs of Baht 73 million (2021: Baht 67 million) which arose from financing for the construction of new power plants. The capitalisation rates were from 2.42% to 4.80% per annum (2021: capitalisation rates from 2.48% to 2.65% per annum).

22 Right-of-use assets, net

	Consolidated financial statements				
	Land Million Baht	Office Space Million Baht	Machinery Million Baht	Vehicles Million Baht	Total Million Baht
Balance as at 1 January 2021	2,646	51	1	98	2,796
Additions	69	-	4	28	101
Lease modification	8	-	-	(4)	4
Reclassification to asset held for sale, net	(183)	-	-	-	(183)
Depreciation	(152)	(12)	(1)	(37)	(202)
Balance as at 31 December 2021	2,388	39	4	85	2,516
Balance as at 1 January 2022	2,388	39	4	85	2,516
Additions	38	23	-	19	80
Lease termination	(96)	-	-	(2)	(98)
Lease modification	(98)	-	-	-	(98)
Depreciation	(133)	(12)	(1)	(34)	(180)
Balance as at 31 December 2022	2,099	50	3	68	2,220

	Separate financial statements			
	Land Million Baht	Office Space Million Baht	Vehicles Million Baht	Total Million Baht
Balance as at 1 January 2021	438	43	89	570
Additions	13	-	19	32
Lease modification	33	-	(4)	29
Depreciation	(46)	(12)	(33)	(91)
Balance as at 31 December 2021	438	31	71	540
Balance as at 1 January 2022	438	31	71	540
Additions	1	24	15	40
Lease termination	(96)	-	(2)	(98)
Lease modification	(38)	-	-	(38)
Depreciation	(39)	(12)	(31)	(82)
Balance as at 31 December 2022	266	43	53	362

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Expenses relating to leases that are not included in the measurement of lease liabilities and right-of-use are as follows:

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Expense relating to short-term leases	25	30	14	18
Expense relating to leases of low-value assets	27	20	25	19
Total cash outflow for leases	186	208	66	73

23 Intangible assets, net

	Consolidated financial statements			
	Right to power purchase agreement/ to operate Million Baht	Computer software Million Baht	Right to use of assets Million Baht	Total Million Baht
At 1 January 2021				
Cost	44,889	487	3,882	49,258
<u>Less</u> Accumulated amortisation	(3,448)	(321)	(1,506)	(5,275)
Net book value	41,441	166	2,376	43,983
For the year ended 31 December 2021				
Opening net book value	41,441	166	2,376	43,983
Additions	-	80	4	84
Reclassification to asset held-for-sale, net	(340)	-	(67)	(407)
Amortisation	(1,914)	(38)	(182)	(2,134)
Closing net book value	39,187	208	2,131	41,526
At 31 December 2021				
Cost	44,480	567	3,800	48,847
<u>Less</u> Accumulated amortisation	(5,293)	(359)	(1,669)	(7,321)
Net book value	39,187	208	2,131	41,526
For the year ended 31 December 2022				
Opening net book value	39,187	208	2,131	41,526
Additions	-	361	-	361
Transfer in	-	11	-	11
Disposals of business unit, net ^(*)	-	(7)	-	(7)
Amortisation	(1,893)	(45)	(177)	(2,115)
Closing net book value	37,294	528	1,954	39,776
At 31 December 2022				
Cost	44,480	931	3,800	49,211
<u>Less</u> Accumulated amortisation	(7,186)	(403)	(1,846)	(9,435)
Net book value	37,294	528	1,954	39,776

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	Separate financial statements			
	Right to power purchase agreement/ to operate Million Baht	Computer software Million Baht	Right to use of assets Million Baht	Total Million Baht
At 1 January 2021				
Cost	-	193	338	531
<u>Less</u> Accumulated amortisation	-	(101)	(227)	(328)
Net book value	-	92	111	203
For the year ended 31 December 2021				
Opening net book value	-	92	111	203
Additions	-	135	-	135
Amortisation	-	(35)	(26)	(61)
Closing net book value	-	192	85	277
At 31 December 2021				
Cost	-	328	338	666
<u>Less</u> Accumulated amortisation	-	(136)	(253)	(389)
Net book value	-	192	85	277
For the year ended 31 December 2022				
Opening net book value	-	192	85	277
Additions	-	359	-	359
Transfer in	-	3	-	3
Disposals of business unit, net ^(*)	-	(7)	-	(7)
Amortisation	-	(40)	(25)	(65)
Closing net book value	-	507	60	567
At 31 December 2022				
Cost	-	682	338	1,020
<u>Less</u> Accumulated amortisation	-	(175)	(278)	(453)
Net book value	-	507	60	567

^(*) During the year ended 31 December 2022, the Company disposed its assets related to battery business to Nuovo Plus Company Limited which is an associate of the Company as described in Note 19.2.

The Group's right-to-use assets consisted of the right to use the grid system, the right of power plant operation, the right to use the transmission line, right to use the gas pipeline, right of way, right to use the pipe rack and right to use the dedicated berth.

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24 Goodwill

	Consolidated financial statements	
	2022 Million Baht	2021 Million Baht
As at 1 January		
Cost	36,090	36,105
Reclassification to asset held-for-sale, net	-	(15)
<u>Less</u> Provision for impairment	-	-
Net book value	36,090	36,090
As at 31 December		
Cost	36,090	36,090
<u>Less</u> Provision for impairment	-	-
Net book value	36,090	36,090

Goodwill of Baht 36,090 million arose from the acquisition of the small power producer segment of Glow Energy Public Company Limited (GLOW), a company that produces and distributes electricity, steam and water for industrial use in Thailand.

Goodwill arising from the small power producer segment is tested annually for impairment by comparing the carrying amount to the recoverable amount, based on value-in-use. The value-in-use was calculated by using a cash flow projection, approved by the management, covering the remaining periods of the power purchase agreements (PPAs) and estimates for electricity tariffs and the power plant's capacity as specified in the PPAs. The inflation rate of 1.76% per annum and discount rates of 6.22% per annum were applied (as at 31 December 2021: inflation rate of 2.00% per annum and discount rates of 6.11% per annum). Based on the value-in-use, the recoverable amount was greater than the carrying amount. Even if the discount rate increased by 0.18% per annum, the recoverable amount is equal to the carrying amount.

25 Trade payables

		Consolidated financial statements		Separate financial statements	
		2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
As at 31 December	Note				
Trade payables - related parties	40.7	8,293	4,659	4,864	2,101
Trade payables - third parties		2,594	1,748	75	56
Total trade payables		10,887	6,407	4,939	2,157

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26 Other payables

As at 31 December	Note	Consolidated financial statements		Separate financial statements	
		2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Other payables - related parties	40.7	399	462	542	288
Other payables - third parties		781	449	387	310
Advances received		81	145	57	50
Interest payables		467	334	263	246
Accrued expenses		811	789	138	253
Total other payables		2,539	2,179	1,387	1,147

27 Short-term loans from financial institutions

As at 31 December	Consolidated financial statements	
	2022 Million Baht	2021 Million Baht
Trust receipt payable	2,171	-
Promissory note	1,200	-
Total short-term loans from financial institutions	3,371	-

As at 31 December 2022, Short-term loans from financial institutions of the Group and the Company bears interest at the rates at 1.85% to 3.89% per annum (As at 31 December 2021 : Nil).

28 Other current liabilities

As at 31 December 2022, other current liabilities of the Group consisted of income tax payable, undue value added tax, and short-term provision totalling Baht 305 million, Baht 1,424 million and Baht 256 million, respectively. (2021: income tax payable, undue value added tax, and short-term provision totalling Baht 586 million, Baht 585 million and Baht 267 million, respectively).

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29 Long-term loans from financial institutions, net

29.1 The long-term loans from financial institutions are as follows:

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Long-term Thai Baht loans	46,529	48,391	10,930	11,600
<u>Add</u> Fair value adjustment from business acquisition - net	110	135	-	-
Total long-term Thai Baht loans	46,639	48,526	10,930	11,600
Long-term US Dollar loans	11,538	8,902	-	-
<u>Less</u> Deferred financing fees	(212)	(166)	(10)	(12)
	57,965	57,262	10,920	11,588
<u>Less</u> Current portion of long-term loans from financial institutions	(11,458)	(7,122)	(3,738)	(669)
Total long-term loans from financial institutions, net	46,507	50,140	7,182	10,919

Long-term loans from financial institutions of the Company

Details of long-term loans from financial institutions of the Company which are all Thai Baht loans and unsecured are as follows:

Number	Outstanding balance As at 31 December 2022 (Million Baht)	Outstanding balance As at 31 December 2021 (Million Baht)	Interest rate	Principal repayment term	Interest payment period
1	4,500	5,100	Fixed interest rate	Repayment every six months from September 2020	Payment every six months
2	3,000	3,000	Fixed interest rate	Repayment on July 2023	Payment every six months
3	3,430	3,500	THOR one-month plus a certain margin per annum	Repayment every six months from September 2022	Payment every month
Total	10,930	11,600			

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Long-term loans from financial institutions of subsidiaries

Details of long-term loans from financial institutions of subsidiaries which are guaranteed by the Company and a subsidiary are as follows:

Thai Baht loans

Number	Outstanding balance As at 31 December 2022 (Million Baht)	Outstanding balance As at 31 December 2021 (Million Baht)	Interest rate	Principal repayment term	Interest payment period
1	3,403 ^(a)	5,277	FDR six-month plus a certain margin per annum	Repayment every six months from June 2018	Payment every six months
2	99	111	Fixed interest rate	Repayment every six months from June 2017	Payment every six months
3	2,813 ^(c)	3,253	THBFIX plus a certain margin per annum	Repayment every six months from October 2012	Payment every three months
4	649	766	BIBOR three-month plus a certain margin per annum	Repayment every six months from May 2021	Payment every three months
5	290	356	BIBOR three-month plus a certain margin per annum	Repayment every six months from June 2021	Payment every three months
6	2,713 ^(b)	3,028	THOR one-month plus certain margin per annum (2021: THBFIX six-month plus a certain margin per annum)	Repayment every six months from October 2021	Payment every month
7	5,294 ^(b)	6,000	THOR one-month plus certain margin per annum (2021: THBFIX six-month plus a certain margin per annum)	Repayment every six months from February 2022	Payment every month
8	1,500 ^(c)	1,500	THBFIX six-month plus a certain margin per annum	Repayment every six months from January 2024	Payment every six months
9	3,000	3,000	BIBOR six-month plus a certain margin per annum	Repayment every six months from February 2024	Payment every six months
10	6,370	6,500	THOR one-month plus a certain margin per annum	Repayment every six months from March 2022	Payment every months
11	3,000	3,000	Fixed interest rate per annum	Payment in January 2025	Payment every six months
12	4,000	4,000	Fixed interest rate per annum	Payment in May 2023	Payment every six months
13	1,134 ^(a)	-	THOR plus a certain margin per annum	Repayment every six months from September 2023	Payment every months

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Number	Outstanding balance As at 31 December 2022 (Million Baht)	Outstanding balance As at 31 December 2021 (Million Baht)	Interest rate	Principal repayment term	Interest payment period
14	400	-	THOR plus a certain margin per annum	Repayment every six months from thirty months after the first drawdown date	Payment every month
15	700	-	THOR plus a certain margin per annum	Repayment every six months from thirty-six months after the first drawdown date	Payment every six months
16	233	-	Fixed interest rate per annum	Repayment every three months after the first drawdown date	Payment every three months
Total	35,598	36,791			

^(a) During the year ended 31 December 2022, a subsidiary entered into a novation agreements to change the lender of the long-term borrowings with three financial institutions for investment projects of subsidiaries under the conditions of the new loan agreements.

^(b) During the year ended 31 December 2022, a subsidiary entered into the amendment of the loan agreement with a financial institution due to the change of the reference rate from THBFX 6 months plus a certain margin per annum to THOR plus a certain margin per annum.

^(c) As at 31 December 2022, the Group's management was in a negotiation with the counterparties to change the reference rates due to the impact of IBOR reform (Note 6.1.1 (b)).

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US Dollar loans

Number	Outstanding balance As at 31 December 2022 (Million US Dollar)	Outstanding balance As at 31 December 2021 (Million US Dollar)	Interest rate	Principal repayment term	Interest payment period
1	-	86	USD-LIBOR plus a certain margin per annum	Repayment in February 2022	Payment every three months
2	137 ^(a)	158	USD-LIBOR plus a certain margin per annum	Repayment every six months from October 2012	Payment every three months
3	10 ^(a)	21	USD-LIBOR plus a certain margin per annum	Repayment every six months from June 2015	Payment every six months
4	185	-	SOFR plus a certain margin per annum	Repayment every twelve months after the first drawdown date	Payment every six months
Total	332	265			

^(a) As at 31 December 2022, the Group's management was in the process of negotiation with the counterparties to switch the reference rates due to the impact of IBOR reform (Note 6.1.1(b)).

The loan facility of Baht 2,000 million of a subsidiary with a financial institution dated on 31 March 2021, it is due in 5 years after the signing date of the loan agreement and bears interest at 3M BIBOR plus a certain margin per annum. As at 31 December 2022, such loan has not yet been drawdown.

During the year ended 31 December 2022, a subsidiary entered into a loan agreement with a financial institution for the facility of Baht 2,000 million. It is due in 10 years after the first drawdown date and bears interest at 6M FDR plus a certain margin per annum. As at 31 December 2022, the subsidiary has not drawdown the aforementioned loan yet.

Moreover, during the year ended 31 December 2022, the Company entered into the three loan guarantee agreements with various financial institutions to guarantee a subsidiary's Baht 4,000 million and US Dollar 185 million credit facilities.

As at 31 December 2022, the Company had the loan guarantee facility amounting to Baht 25,816 million and US Dollar 185 million. Another subsidiary had the guarantee facility for loans of such subsidiary totalling Baht 7,000 million. (as at 31 December 2021 the Company has the guarantee facility for loans of a subsidiary totalling Baht 21,490 million and US Dollar 86 million. An another subsidiary had the guarantee facility for loans of such subsidiary totalling Baht 7,000 million.)

As at 31 December 2022, long-term loans of US Dollar 147 million or equivalent to Baht 4,758 million and the long-term loans of Baht 354 million are the secured loans of two subsidiaries, by mortgaging buildings, pledging all machinery and equipment and deposits at financial institutions (Notes 11, 12 and 21). All rights and obligations under various agreements relating to the subsidiaries' power plant projects have been assigned as collateral in accordance with the conditions under the loan agreements. (as at 31 December 2021: US Dollar 179 million or equivalent to Baht 6,024 million and Baht 3,253 million).

According to the aforementioned loan agreements, the Group must comply with certain financial requirements such as the timing of future capital increases, dividend payments, reduction of share capital, merger and acquisition and maintaining financial ratios e.g. debt to equity ratio, debt service coverage ratio and maintaining coal stockpile.

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29.2 The movement of long-term loans from financial institutions can be analysed as follows:

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Opening net book value	57,262	46,753	11,588	19,323
Cash flows				
Cash received during the year	8,271	34,563	-	3,500
Cash repayments during the year	(7,124)	(23,208)	(670)	(11,247)
Deferred financing fee	(82)	(37)	-	(5)
Other non-cash movement				
Amortisation of fair value from business acquisition	(25)	(105)	-	-
Amortisation of deferred financing fee	35	71	2	17
Unrealised exchange (gain) loss	(401)	859	-	-
Exchange difference on translation	29	90	-	-
Reclassification to asset held-for-sale, net	-	(1,724)	-	-
Closing book value	57,965	57,262	10,920	11,588

29.3 Maturity of long-term loans from financial institutions are as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Within 1 year	11,458	7,121	3,738	669
Later than 1 year but not later than 5 years	25,375	28,336	3,375	6,163
Later than 5 years	21,132	21,805	3,807	4,756
Total long-term loans from financial institution, net	57,965	57,262	10,920	11,588

30 Debentures, net

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Debentures in Thai Baht	51,500	44,500	51,500	41,500
Fair value adjustment from business acquisition	-	(85)	-	-
<u>Less</u> Deferred financing fee	(50)	(45)	(50)	(44)
	51,450	44,370	51,450	41,456
<u>Less</u> Current portion of debentures	-	(1,999)	-	(1,999)
Total debentures, net	51,450	42,371	51,450	39,457

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Debentures of the Company

On 10 June 2022, the Company issued unsubordinated and unsecured debentures of Baht 12,000 million. The details of debentures are as follows:

Number	Amount (Million Baht)	Interest Rate	Tenor	Interest payment schedule
1	1,000	2.55% per annum	3 years	Payment in June and December
2	3,000	3.04% per annum	5 years	Payment in June and December
3	1,000	3.56% per annum	8 years	Payment in June and December
4	3,000	3.75% per annum	10 years	Payment in June and December
5	4,000	4.40% per annum	15 years	Payment in June and December
Total	12,000			

As at 31 December 2022, the Company had unsubordinated and unsecured debentures of Baht 51,450 million. The Company must comply with the certain requirements and conditions, such as maintaining the net debt to equity ratio (2021: Baht 41,456 million).

Debentures of a subsidiary

As at 10 March 2022, a subsidiary sent a notification to debenture holders' representative for early redemption of debentures totalling Baht 3,000 million on 18 May 2022 which is pursuant to the Terms and Conditions of the debentures. The original maturity date is within 2026.

Maturities of the debentures are as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Within 1 year	-	1,999	-	1,999
Later than 1 year but not later than 5 years	17,987	16,901	17,987	13,987
Later than 5 years	33,463	25,470	33,463	25,470
Total debentures, net	51,450	44,370	51,450	41,456

The debentures' movement can be analysed as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
For the years ended 31 December				
Opening net book value	44,370	57,562	41,456	44,948
Cash flows				
Cash received during the year	12,000	-	12,000	-
Cash repayment during the year	(5,000)	(13,055)	(2,000)	(3,500)
Deferred front-end fee	(14)	-	(14)	-
Other non-cash movement				
Fair value adjustments from business acquisition	84	(150)	-	-
Amortisation of deferred financing fee	10	13	8	8
Closing net book value	51,450	44,370	51,450	41,456

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31 Other non-current liabilities

	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Contract liabilities ⁽¹⁾	14,639	14,167	487	231
Others	511	709	160	158
Total other non-current liabilities	15,150	14,876	647	389

⁽¹⁾ These are advance receipts of availability payments in relation to the availabilities of a subsidiary's power plant, as agreed with EGAT and in accordance with the terms of PPA.

32 Deferred income taxes, net

The analysis of deferred tax assets and deferred tax liabilities is as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Deferred tax assets	4,818	4,347	426	532
Deferred tax liabilities	(10,474)	(11,060)	(917)	(1,084)
Total deferred income taxes, net	(5,656)	(6,713)	(491)	(552)

The movements of the deferred income tax account are as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
As at 1 January	(6,713)	(6,561)	(552)	(70)
(Charged) /credited to profit or loss	1,090	356	76	22
(Charged) /credited to other comprehensive income	(33)	(588)	(15)	(504)
Reclassification to liabilities held for sale	-	80	-	-
As at 31 December	(5,656)	(6,713)	(491)	(552)

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The movements of deferred tax assets and liabilities are as follows:

	Consolidated financial statements										
Financial assets measured at fair value through other comprehensive income	Million Baht	Property, plant and equipment Million Baht	Provision for employee benefits Million Baht	Investment expenses Million Baht	Provisions Million Baht	Deferred income Million Baht	Finance lease receivables Million Baht	Derivative contracts Million Baht	Lease liabilities Million Baht	Loss carried forward Million Baht	Total Million Baht
Deferred tax assets											
As at 1 January 2022	-	693	109	91	258	2,727	328	102	38	1	4,347
Charged /(credited) to profit or loss	-	(89)	10	(19)	29	38	14	-	12	534	529
Charged /(credited) to other comprehensive income	-	-	-	-	-	-	-	(58)	-	-	(58)
As at 31 December 2022	-	604	119	72	287	2,765	342	44	50	535	4,818
As at 1 January 2021	198	636	98	85	252	2,708	363	166	19	-	4,525
Charged /(credited) to profit or loss	-	57	11	6	6	19	(35)	5	19	1	89
Charged /(credited) to other comprehensive income	(198)	-	-	-	-	-	-	(69)	-	-	(267)
As at 31 December 2021	-	693	109	91	258	2,727	328	102	38	1	4,347

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Deferred tax liabilities

As at 1 January 2022

(Charged) /credited to profit or loss

(Charged) /credited to other comprehensive income

As at 31 December 2022

As at 1 January 2021

(Charged) /credited to profit or loss

(Charged) /credited to other comprehensive income

Reclassify to liabilities held for sale

As at 31 December 2021

Consolidated financial statements						
Finance lease receivables Million Baht	Financial assets measured at fair value through other comprehensive income		Property, plant and equipment		Fair value from business acquisition	
Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
(729)	(335)	(1,670)	(8,216)	(87)	(23)	(11,060)
168	-	27	340	26	-	561
-	3	-	-	-	22	25
(561)	(332)	(1,643)	(7,876)	(61)	(1)	(10,474)
(811)	(12)	(1,619)	(8,598)	(21)	(25)	(11,086)
82	-	(51)	302	(66)	-	267
-	(323)	-	-	-	2	(321)
-	-	-	80	-	-	80
(729)	(335)	(1,670)	(8,216)	(87)	(23)	(11,060)

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	Separate financial statements						
	Financial assets measured at fair value through other comprehensive income						
	Million Baht	Property, plant and equipment	Provisions for employee benefits	Investment expenses	Lease liabilities	Provisions	Total
	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht	Million Baht
Deferred tax assets							
As at 1 January 2022	-	337	65	91	8	31	532
Charged/(credited) to profit or loss	-	(93)	6	(21)	2	-	(106)
As at 31 December 2022	-	244	71	70	10	31	426
As at 1 January 2021							
Charged/(credited) to profit or loss	199	431	56	86	1	31	804
Charged/(credited) to other comprehensive income	-	(94)	9	5	7	-	(73)
As at 31 December 2021	(199)	-	-	-	-	-	(199)
	-	337	65	91	8	31	532

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	Separate financial statements				
	Finance lease receivables Million Baht	Property, plant and equipment Million Baht	Financial assets measured at fair value through other comprehensive income Million Baht	Deferred expense Million Baht	Total Million Baht
Deferred tax liabilities					
As at 1 January 2022	(729)	(42)	(306)	(7)	(1,084)
(Charged) /credited to profit or loss	168	14	-	-	182
(Charged) /credited to other comprehensive income	-	-	(15)	-	(15)
As at 31 December 2022	(561)	(28)	(321)	(7)	(917)
As at 1 January 2021	(811)	(63)	-	-	(874)
(Charged) /credited to profit or loss	82	21	-	(7)	96
(Charged) /credited to other comprehensive income	-	-	(306)	-	(306)
As at 31 December 2021	(729)	(42)	(306)	(7)	(1,084)

Deferred tax assets are recognised for tax loss and carried forward only to the extent that realisation of the related tax benefit through future taxable profits is probable. The Group did not recognise the deferred tax asset of Baht 3 million (2021: Baht 49 million) from losses of Baht 16 million (2021: Baht 413 million) that can be carried forward against future taxable income. Losses of Baht 8 million will be expired in 2026 (2021: losses of Baht 413 million will be expired in 2026).

33 Legal reserve

	Consolidated and Separate financial statements	
	2022 Million Baht	2021 Million Baht
Opening book value	2,088	1,843
Appropriation during the year	180	245
Closing book value	2,268	2,088

Under the Public Companies Act BE 2535, the Company must set aside as a legal reserve at least 5% of its net profit after accumulated deficit brought forward (if any) until the reserve is not less than 10% of the registered capital. The legal reserve is non-distributable.

34 Other income

During the year 2022, the Group received confirmation letters from the insurers regarding compensation for damage totalling Baht 586 million due to the unplanned shutdown of power plants of three subsidiaries and the Company was Baht 572 million and Baht 14 million respectively. The Group already received Baht 26 million for such claims, while remaining amount will be received in the year 2023. The Group accordingly recognised insurance claims of Baht 586 million in the consolidated statement of comprehensive income and Baht 14 million in the separate statement of comprehensive income for the year ended 31 December 2022.

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35 Expense by nature

The following expenditure items have been charged in arriving at net profit:

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Fuel cost and expenses for supplies used	105,035	49,422	37,366	16,129
Manufacturing overhead	1,387	821	243	185
Depreciation and amortisation expenses	9,112	9,232	1,588	1,596
Employee benefit expenses and salary for outsourcing	3,280	3,076	2,004	1,961
Repair and maintenance expenses	2,349	2,145	666	485
Loss from impairment of property, plant and equipment	388	17	-	-

36 Finance costs

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Interest expenses	3,285	3,121	2,208	1,739
Amortised deferred finance costs	48	85	12	26
Other finance costs	966	654	18	20
Total finance costs	4,299	3,860	2,238	1,785

37 Income tax expense

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Current tax:				
Current tax on profits for the year	714	1,548	81	172
Total current tax	714	1,548	81	172
Deferred tax:				
Decrease (increase) in deferred tax assets (Note 32)	(529)	(89)	106	73
Increase (decrease) in deferred tax liabilities (Note 32)	(561)	(267)	(182)	(96)
Total deferred tax	(1,090)	(356)	(76)	(23)
Income tax expense (benefit)	(376)	1,192	5	149

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The tax on the Group's profit before tax differs from the theoretical amount that would arise using the basic tax rate of the Parent's home country as follows:

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Profit before tax	1,081	9,032	3,607	5,051
Tax rate	20%	20%	20%	20%
Result of accounting profit multiplied by the income tax rate	216	1,806	721	1,010
Tax effect of:				
Expenses not deductible for tax purposes	157	78	41	6
Revenues that are granted income tax exemption or expenses that are deductible at a greater amount	(350)	(444)	(774)	(866)
Utilisation of previously unrecognised tax losses	-	(5)	-	-
Tax losses for the year for which no deferred income tax asset was recognised	2	60	-	-
Share of profit of investments accounted for using the equity method	(308)	(307)	-	-
Adjustment in respect of the prior year	(31)	7	17	(1)
Difference on tax rate in which country the Group operates	(62)	(3)	-	-
Income tax	(376)	1,192	5	149

The weighted average applicable tax rate for the Group and the Company were 34.78% and 0.14%, respectively (2021: 13.20% and 2.94%, respectively).

The tax charged /(credited) relating to component of other comprehensive income are as follows:

For the years ended 31 December	Consolidated financial statements					
	2022			2021		
	Before tax Million Baht	Tax charge (credit) Million Baht	After tax Million Baht	Before tax Million Baht	Tax credit Million Baht	After tax Million Baht
Cash flow hedges	(562)	41	(521)	(629)	67	(562)
Costs of hedging	28	(6)	22	(1)	-	(1)
Loss (Gain) from remeasurement of equity investments at fair value through other comprehensive income	(59)	12	(47)	(2,616)	520	(2,096)
For the years ended 31 December	Separate financial statements					
	2022			2021		
	Before tax Million Baht	Tax credit Million Baht	After tax Million Baht	Before tax Million Baht	Tax credit Million Baht	After tax Million Baht
Loss (Gain) from remeasurement of equity investments at fair value through other comprehensive income	(70)	14	(56)	(2,520)	504	(2,016)

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38 Earnings per share

Basic earnings per share is calculated by dividing the net profit attributable to the Company's shareholders by the weighted average number of ordinary shares.

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Net profit attributable to the Company's ordinary shareholders (million Baht)	891	7,319	3,602	4,903
Weighted average number of ordinary shares outstanding (million shares)	2,819	2,819	2,819	2,819
Basic earnings per share (Baht per share)	0.32	2.60	1.28	1.74

The Group has no potential dilutive ordinary shares in issue during the year presented. Therefore, diluted earnings per share are not presented.

39 Dividends

At the Annual General Meeting of Shareholders of the Company held on 1 April 2022, the shareholders approved to distribute an annual dividend for the year 2021 at Baht 1.50, totalling Baht 4,230 million. The dividend consists of interim dividends at Baht 0.50 which were paid to the Company's shareholders in September 2021, the remaining dividends at Baht 1.00, totalling Baht 2,820 million, were paid on 20 April 2022.

At the Board of Directors' meeting of the Company held on 23 August 2022, the Board approved the payment of interim dividends for the first half of 2022 performance at Baht 0.20 per share, totalling Baht 564 million. These dividends were paid to shareholders on 21 September 2022.

40 Related party transactions

Major shareholders during the year are PTT Public Company Limited (holding 47.27 of shares), Thai Oil Power Company Limited (holding 10.00% of shares) and PTT Global Chemical Public Company Limited (holding 10.00% of shares). All three companies are incorporated in Thailand and PTT Public Company Limited is the ultimate parent company.

The information of the Company's subsidiaries, associates and joint ventures are disclosed in Note 19.

The pricing policies for particular types of transactions are explained further below:

Transactions	Pricing policies
Sale of goods	Contract price
Rendering of service	Contract price
Purchase of goods and raw materials	Contract price based on market
Rental fees	Contract price
Service fees	Contract price
Technical fees	Contract price
Interest income and interest expenses	Contract rate

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The following material transactions were carried out with related parties:

40.1 Business transactions

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
The ultimate parent company				
- Revenue from sales	683	567	3	1
- Revenue from services	-	4	-	-
- Other income	1	1	-	-
- Cost of sales	60,586	36,345	19,492	12,378
- Administrative expenses	112	109	106	106
- Interest expenses	3	4	-	-
- Cost of property, plant and equipment and intangible assets	-	3	-	3
Shareholders				
- Revenue from sales	10,327	7,532	6,791	4,693
- Revenue from services	1	1	1	1
- Other income	9	8	6	5
- Cost of sales	16,614	2,707	16,214	2,615
- Interest expenses	3	4	3	3
Subsidiaries				
- Revenue from sales	-	-	195	22
- Revenue from services	-	-	780	1,039
- Interest income	-	-	71	17
- Other income	-	-	64	43
- Dividend income	-	-	2,899	2,866
- Cost of sales	-	-	762	395
- Administrative expenses	-	-	25	33
- Interest expenses	-	-	266	157
- Cost of property, plant and equipment and intangible assets	-	-	10	149
Associate				
- Revenue from services	5	1	5	-
- Interest income	18	23	18	23
- Other income	447	1	572	1
- Dividend income	-	-	74	149
- Administrative expenses	1	13	1	-

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For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Joint ventures				
- Revenue from services	1	1	1	1
- Interest income	6	4	6	4
- Other income	5	5	5	5
- Dividend income	-	-	492	430
- Administrative expenses	1	-	1	-
Indirect associates				
- Revenue from services	28	44	9	8
- Interest income	159	153	-	120
- Other income	-	78	-	78
- Cost of sales	1	1	-	-
- Administrative expenses	1	-	1	-
Other related parties				
- Revenue from sales	19,309	14,026	10,285	7,584
- Revenue from services	223	31	-	-
- Other income	22	26	16	20
- Dividend income	192	256	186	248
- Cost of sales	7,489	2,422	507	485
- Administrative expenses	140	151	128	142
- Interest expenses	267	107	267	106
- Cost of property, plant and equipment and intangible assets	39	69	39	65

40.2 Trade receivables and other receivables from related parties

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Trade receivables				
- The ultimate parent company	38	59	-	1
- Shareholders	939	729	640	450
- Subsidiaries	-	-	145	82
- Joint ventures	1	-	1	-
- Associate	2	1	1	1
- Indirect associates	3	8	3	8
- Other related parties	2,141	1,661	983	802
Total trade receivables	3,124	2,458	1,773	1,344
Other receivables				
- The ultimate parent company	2	2	1	1
- Shareholders	1	-	1	-
- Subsidiaries	-	-	15	19
- Joint ventures	2	2	2	2
- Associate	22	12	22	12
- Indirect associates	1	106	-	83
- Other related parties	36	27	35	27
Total other receivables	64	149	76	144

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40.3 Dividend receivables from related parties

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
As at 31 December	Million Baht	Million Baht	Million Baht	Million Baht
Dividend receivables				
- Joint ventures	106	91	106	91
Total dividend receivables	106	91	106	91

40.4 Short-term loans to related parties

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
As at 31 December	Million Baht	Million Baht	Million Baht	Million Baht
Short-term loans to related parties				
- Subsidiaries	-	-	-	968
- Indirect subsidiaries	-	-	1,000	-
- Indirect associates	-	968	-	-
	-	968	1,000	968

Movements of short-term loans to related parties can be analysed as follows:

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
For the years ended 31 December	Million Baht	Million Baht	Million Baht	Million Baht
Opening balance	968	-	968	1,778
Cashflows				
Cash paid for short-term loan	602	995	1,602	1,045
Cash received from repayment	(1,570)	(1,695)	(1,570)	(1,855)
Other non-cash movement				
Reclassification	-	1,668	-	-
Ending balance	-	968	1,000	968

On 1 September 2022, the Company made a short-term loan agreement, providing Baht 1,000 million facility bearing THOR plus a certain margin per annum to an indirect subsidiary, and the repayment of principal including interest will be on 28 February 2023. As of 31 December 2022, the loan was fully drawn down by the subsidiary for the project of plant replacement.

On 20 December 2022, the Company made a short-term loan agreement, providing Baht 500 million facility bearing interbank rate and maturing 1 year after the signing date to the ultimate parent company using for working capital and liquidity management. As of 31 December 2022, the loan has not been drawn down.

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40.5 Long-term loans to related parties and related interests

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Long-term loans to related parties				
- Subsidiaries				
- Due within 1 year	-	-	48	48
- Due over 1 year	-	-	1,967	2,471
- Interest receivable	-	-	55	-
- Joint ventures				
- Due over 1 year	100	96	100	96
- Interest receivable	17	11	17	11
- Associates				
- Due within 1 year	92	92	92	92
- Due over 1 year	493	585	493	585
- Indirect associates				
- Due over 1 year	2,988	2,660	-	-
- Interest receivable	862	748	709	748
	4,552	4,192	3,481	4,051

Movements of long-term loans to related parties can be analysed as follows:

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Opening balance	3,433	2,799	3,292	2,705
<u>Cashflows</u>				
Increases during the year	1,089	834	198	3,246
Decreases from cash received during the year	(797)	(210)	(794)	(2,669)
<u>Other non-cash movement</u>				
Unrealised gain (loss) on exchange rate	(6)	10	4	10
Exchange difference on translation of financial information	(46)	-	-	-
Ending balance	3,673	3,433	2,700	3,292

Long-term loan to related parties agreements

Combined Heat and Power Producing Company Limited

The loan agreement for a Baht 314 million credit facility, dated 24 June 2014, It is due in 10 years and has an interest rate at MLR minus discount per annum, payable in every six months commencing in December 2014. The purpose of this loan is to provide working capital. As at 31 December 2022, the utilised credit facility amounts to Baht 60 million (at 31 December 2021: Baht 107 million).

Xayaburi Power Company Limited

The loan agreement for a Baht 2,463 million credit facility, dated 2 August 2016, is under a condition of Sponsor Agreement between Xayaburi Power Company Limited and the company, which is one of the sponsors. The loan is due in 15 years and has an interest rate per annum at MLR plus margin, payable in semi-annual installments commencing in 2021 with a repayment rate of 5.6% to 14.0% per year of the total loan, as indicated in the agreement. Loan repayments must comply with the terms and conditions under the loan agreement with the financial institution before repayment can be made to the Company. The purpose of this loan is to support a construction project. On 30 November 2021, the associate made the payment of principal and interest Baht 106 million to the Company and the loan was novated to the subsidiary on the same date amounting to Baht 2,412 million. As at 31 December 2022, the associate has already drawdown in a full amount and the outstanding loan balance is Baht 1,756 million (as at 31 December 2021: Baht 2,412 million).

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Nam Lik 1 Power Company Limited

The loan agreement for a US Dollar 3 million credit facility, dated 21 March 2017, is under a condition of a sponsor agreement between Nam Lik 1 Power Company Limited and the company, which is one of the sponsors. It is due in 12 years and has an interest rate at LIBOR 3M plus margin per annum, payable in semi-annual installments, commencing in 2019. Loan repayments must comply with the terms and conditions under the loan agreement with the financial institution before repayment can be made to the Company. The loan is classified as a non-current asset. The purpose of the loan is to finance a construction project. As at 31 December 2022, the credit facility has been fully utilised at US Dollar 3 million, equivalent to Baht 100 million (at 31 December 2021: US Dollar 3 million, equivalent to Baht 96 million).

As at 31 December 2022, the Group's management was in the process of negotiation with the counterparty to switch the reference rates as a result of IBOR reform (Note 6.1.1(b)).

Chonburi Clean Energy Company Limited

The loan agreement for a Baht 895 million credit facility, dated 30 January 2018, The loan purpose is for development and construction of a non-hazardous industrial waste-to-energy power plant. It is due in 10 years and has an interest rate at MLR minus discount per annum. The loan is payable on shareholder demand. On 29 April 2022, the Group novated the agreement to another subsidiary as a new lender for the facility of Baht 198 million. As at 31 December 2022, the Group had loaned to related party of Baht 198 million (as at 31 December 2021: Baht 248 million).

Global Renewable Power Company Limited

The loan agreement for a Baht 834 million credit facility, dated 4 January 2021. Its purpose is to repay its existing short-term loan including interest to the Company and to provide loans to two indirect subsidiaries. It is due in 10 years with a fixed interest rate per annum, payable in annual installments, commencing in June 2021. As at 31 December 2022, the credit facility has been utilized by Baht 585 million (as at 31 December 2021 : Baht 586 million).

GPSC Treasury Center Company Limited

For the loan agreement of a Baht 2,412 million credit facility, dated 30 November 2021, it is due in 10 years and bears interest rate at THOR plus margin per annum. Its purpose is to provide a long-term loan to indirect associate and the loan repayments depends on the repayment of indirect associate. The indirect associate must comply with the terms and conditions under the loan agreement with the financial institution before repayment can be made to the subsidiary. As at 31 December 2022, the outstanding loan balance is Baht 1,756 million (as at 31 December 2021: Baht 2,412 million).

For the loan agreement of a Baht 198 million credit facility, dated 29 April 2022, it is due in 6 years after the first drawdown date and bears interest at fixed interest rate per annum and the subsidiary has already drawdown in a full amount. Its purpose is to provide a long-term loan to an indirect associate of Baht 198 million which bears interest MLR minus a certain margin per annum and dues within six years after the first drawdown date from the subsidiary. (as at 31 December 2021: Nil)

CI Changfeng Limited and CI Xidao Limited

The loan agreements for US Dollar 32 million and TWD 2,471 million credit facility, dated on 26 November 2022. It is due in 20 years after the first drawdown date and bears interest at fixed interest rate per annum. Its purpose is to support for investment in offshore wind farm project. As at 31 December 2022, the indirect associates have already drawdown such loan amounting to US Dollar 16 million which is equivalent to Baht 556 million and TWD 414 million which is equivalent to Baht 477 million. (as at 31 December 2021: Nil)

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40.6 Non-current assets - related parties

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Non-current assets - related parties				
- The ultimate parent company	2	4	-	-
- Shareholders	3,095 ^(*)	2,195 ^(*)	3	3
- Other related parties	13	8	13	8
	3,110	2,207	16	11

(*) As at 31 December 2022, non-current assets of Baht 3,092 million was advance payment of the essential agreements as disclosed at Note 41.3.9 (as at 31 December 2021: Baht 2,192 million).

40.7 Trade payables, accrued expenses and other payables from related parties

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Trade payables and accrued expenses				
- The ultimate parent company	4,815	3,980	1,724	1,372
- Shareholders	3,096	596	3,075	596
- Subsidiaries	-	-	41	66
- Other related parties	382	83	24	67
Total trade payables and accrued expenses	8,293	4,659	4,864	2,101
Other payables				
- The ultimate parent company	50	37	44	33
- Shareholders	42	18	41	17
- Subsidiaries	-	-	167	15
- Joint ventures	2	-	1	-
- Associates	-	14	-	-
- Indirect associates	2	-	1	-
- Other related parties	303	393	288	223
Total other payables	399	462	542	288

40.8 Non-current liabilities - related parties

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Non-current liabilities - related parties				
- The ultimate parent company	4	4	-	-
- Shareholders	24	29	13	15
- Other related parties	218	53	198	25
	246	86	211	40

40.9 Short-term loans from related parties, net

On 20 December 2022, the Company has entered into a short-term loan agreement with the ultimate parent company. For loan facility of Baht 1,500 million, the loan is due in one year and bears interbank interest rate with the purpose for short-term working capital. As at 31 December 2022, such loan has not yet been drawdown.

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40.10 Long-term loans from related parties, net

As at 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
- Subsidiary				
- Due within 1 year	-	-	1,203	1,203
- Due over 1 year	-	-	9,234	10,428
- Other related party				
- Due over 1 year	16,100	8,000	16,100	8,000
	16,100	8,000	26,537	19,631

Movements of long-term loans from related parties can be analysed as follows:

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Million Baht	Million Baht	Million Baht	Million Baht
Opening balance	8,000	-	19,631	-
Cash flow:				
Increases during the period	8,100	8,000	8,100	19,990
Repayments during the period	-	-	(1,203)	(340)
Deferred financing fee	-	-	(1)	(19)
Other non-cash movement:				
Amortisation of deferred financing fee	-	-	10	-
Ending balance	16,100	8,000	26,537	19,631

Details of long-term loan agreements that the Company entered into with a subsidiary which are all Thai Baht loans are as follows:

Number	Outstanding balance As at 31 December 2022	Outstanding balance As at 31 December 2021	Interest rate	Principal repayment term	Interest payment period
	Million Baht	Million Baht			
1	649	766	BIBOR three-month plus a certain margin per annum	Repayment every six months from May 2021	Payment every three months
2	290	356	BIBOR three-month plus a certain margin per annum	Repayment every six months from June 2021	Payment every three months
3	8,007 ^(*)	9,028	THOR plus a certain margin per annum	Repayment every six months from October 2021 and February 2022	Payment every month
4	1,500	1,500	THOR six-month plus a certain margin per annum	Repayment in full on maturity date	Payment every six months
Total	10,446	11,650			

(*) During the year ended 31 December 2022, the Company and subsidiaries made an amendment to the legacy loan agreements, changing the reference rate from THBFX 6 months plus a certain margin per annum to THOR plus a certain margin per annum

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The loan agreement for Baht 20,000 million, dated on 29 June 2021. Such loan bears interest at a fixed rate per annum. The interest shall be paid every six months and the principal shall be fully paid three years after the first drawdown date. The purpose is to support for investment in renewable energy abroad. Company must comply with the certain requirements and conditions, such as maintaining the net debt to equity ratio. As of 31 December 2022, the Company has already drawn down such loan amounting to Baht 16,100 million (as of 31 December 2021: Baht 8,000 million).

On 30 December 2022, the Company terminated the long-term loan agreement for Baht 20,000 million with a subsidiary, dated on 29 July 2021. It is due in 5 years after signing date and its purpose is to change the lender to be an another subsidiary.

40.11 Directors and managements remuneration

For the years ended 31 December	Consolidated financial statements		Separate financial statements	
	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Short-term benefits	243	334	219	300

41 Commitments and significant agreements

41.1 Commitments

41.1.1 Capital expenditure obligations

The Group had commitments under design, construction and installation of machinery and equipment and project construction contract considered as capital expenditure obligations as of the statement of financial position date but not recognized in the financial statement are as follow:

	Consolidated financial statement			
	Foreign currency Million	2022 Baht Million	Foreign currency Million	2021 Baht Million
Baht	-	2,960	-	1,410
US Dollar	630	21,869	633	21,255
Swedish krona	391	1,306	213	798
Euro	2	78	2	80
Total		26,213		23,543

	Separate financial statement			
	Foreign currency Million	2022 Baht Million	Foreign currency Million	2021 Baht Million
Baht	-	561	-	104
US Dollar	-	-	1	14
Total		561		118

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41.1.2 Letters of guarantee

As at 31 December 2022 and 2021, there were outstanding letters of guarantee issued by financial institutions on behalf of the Group in respect of certain performance required in the normal course of business of the Group, as follows:

Company	Currency	2022 Million	2021 Million
Global Power Synergy Public Company Limited	Baht	84	58
IRPC Clean Power Company Limited	Baht	537	470
Combined Heat and Power Producing Company Limited	Baht	20	2
Boree Plus Company Limited	Baht	90	-
Eurus Plus Company Limited	Baht	52	-
Helios 1 Company Limited	Baht	49	-
Helios 2 Company Limited	Baht	61	-
Glow Energy Public Company Limited	Baht	741	639
Glow SPP 2 Company Limited	Baht	689	714
Glow SPP 3 Company Limited	Baht	589	536
Glow SPP 11 Company Limited	Baht	411	424
Glow IPP Company Limited	Baht	11	11
GHECO-One Company Limited ⁽¹⁾	Baht	42	42
Houay Ho Power Company Limited ⁽²⁾	US Dollar	3	3

⁽¹⁾ The bank guarantee of GHECO-One Company Limited is guaranteed by a subsidiary up to a maximum of 65 percent of the amount.

⁽²⁾ On 2 February 2015, the Group issued the letter of guarantee with amounts not exceeding an aggregate of US Dollar 3 million to a bank in order to guarantee Houay Ho Power Company Limited's liability to EGAT under the Power Purchase Agreement.

41.1.3 Letter of Credit

As at 31 December 2022, the Group had outstanding letters of credit issued by financial institutions on behalf of GHECO-ONE Company Limited in respect of purchase of coal totalling US Dollar 29.5 million and Combined Heat and Power Producing Company Limited in respect of purchase of asset totalling US Dollar 1 million (as at 31 December 2021: GHECO-ONE Company Limited and Glow SPP 3 Company Limited amounting to US Dollar 22.2 million).

41.2 Long-term service commitments

The Group entered into service agreements with a related party for receiving management services, system management and inspection and other related services to be performed in accordance with the operations and maintenance procedures. Under term and conditions of the service agreements, the Group is obliged to the fee. Such agreements have the term of 10 years and automatically renewed for additional 5 years.

41.3 Significant agreements

41.3.1 Significant Power Purchase Agreements

The Group entered into Power Purchase Agreements (PPAs) with the Electricity Generating Authority of Thailand (EGAT) totalling 17 agreements. The PPAs are effective for the periods of 21 years, 25 years and 30 years commencing from their commercial operation dates. Sales quantities and prices must comply with the agreements. In 2017, the Group entered into Amendments to two of the PPAs to revise their pricing structures and extend the PPAs' terms for another 3 years after their maturity dates.

41.3.2 Gas supply agreements

The Group entered into Gas Supply Agreements (GSAs) with PTT Public Company Limited (PTT) totalling 18 agreements. The agreements are effective for periods between 4 and 25 years. Sales quantities and prices must comply with the agreements. Four of these agreements can be extended for another 4 years commencing from the maturity date, with the conditions stipulated in the agreements.

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41.3.3 Coal supply agreements

The Group entered into coal supply agreements with both domestic and overseas companies totalling 5 agreements to sale and purchase of coal. Sales quantities and prices must comply with the agreements.

41.3.4 Coal berth joint operation agreement

The Group entered into a joint operation agreement with the Industrial Estate Authority of Thailand (IEAT) to develop an area to construct a shipping berth at Map Ta Phut Industrial Estate. This berth is to be used for handling coal, other raw materials and necessary goods. The Group has the right to utilise this area for 30 years and must pay the specified benefits to IEAT. In addition, the dedicated berth's ownership is transferred to IEAT 15 years from the commencing date.

41.3.5 Operation and management services agreements

The Group entered into Operation and Management Services Agreements with two overseas companies to use its facilities between 1 July 2016 and 31 December 2022. The fees must be received as stated in the agreements.

41.3.6 Long-term parts and repairs agreements

The Group entered into long-term parts and repairs agreements with domestic and overseas companies to provide certain parts and maintenance services on power plant machines and equipment. The scope of work performed, their conditions and prices must comply with the agreements.

41.3.7 Maintenance agreement

The Group entered into a Maintenance Service 230 kV Substation Agreement (MSA) with EGAT. In accordance with the MSA, EGAT commits to perform preventive maintenance services, including corrective maintenance and on-call services of the 230 kV substation and transmission line for 6 years. The scope of work performed, its condition and its price must comply with the agreement.

41.3.8 Royalty agreement

In consideration for the granting and issuance of all rights, leases, permits and other benefits to the Group under the Build-operate-transfer Agreement (BOT), the Group pays a royalty to the Government of Lao PDR each quarter, within 90 days of the end of each quarter. The royalty can be paid in Thai Baht, US Dollars and Kip at the rate of 3.15% during the first seven years of commercial operation and 7.2% thereafter, of sales revenue under its PPAs.

41.3.9 Essential agreements under the Energy Recovery Unit Project

On 10 May 2019, the Group entered into agreements relating to the Energy Recovery Unit (ERU) Project, which is a part of the Clean Fuel Project (CFP) of Thai Oil Public Company Limited (TOP). The agreements are detailed below.

a) Asset sale and purchase agreement (ERU)

The Group entered into an asset sale and purchase agreement for the transfer of ownership of the ERU Project from TOP for the amounts not exceeding US Dollar 757 million. The Group makes payments according to Project's milestones, and ownership will be transferred upon the Project's construction and issuing of the Provisional Acceptance Certificate (PAC) under the CFP, which expected to be completed within 2023.

b) Products sales agreement

The Group entered into a sales agreement for electricity, steam and other products under the ERU Project with TOP. The agreement's term is 25 years from the Project's ownership transfer date which sale quantity and renewal period must comply with the agreement.

c) Fuel and utilities supply agreement

The Group entered into a fuel and utilities supply agreement with TOP for purchasing pitch, other fuels, and various utilities that are necessary to operate the ERU Project. The agreement term is 25 years from the Project's ownership transfer date. The contract's renewal period must comply with the agreement.

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d) Operation and maintenance service agreement

The Group entered into an operation and maintenance service agreement to engage TOP for providing operation and maintenance services for all ERU Project units. The agreement term is 25 years from the Project's ownership transfer date. The contract renewal period must comply with the agreement

41.3.10 Letter of guarantee

During the year ended 31 December 2022, the Company entered into a loan guarantee agreement with a financial institution to guarantee the loan facilities of an associate up to a maximum of Indian Rupee 13,000 million and related obligation from the loan for managing and preventing relevant risks to the loan guarantee. The Group is obliged to guarantee the loan up to a maximum of its shareholding proportion.

41.3.11 Power plant construction agreements

On 31 March 2022, a subsidiary entered into power plant construction and installation of machinery and equipment agreements with domestics and overseas vendors for a purpose of CHP-III construction project. The scope of work performed, its condition and its price must comply with the agreements. The project is expected to be completed within 2024.

42 Promotional privileges

The BOI has granted the Group some privileges relating to its production of electricity, steam, water, chilled water, refuse-derived fuel and lithium-ion batteries. The privileges include income tax exemption for certain operations for four or eight years from the date on which the income is first derived from those operations. As promoted companies, the Group must comply with certain terms and conditions prescribed in the promotional certificates.

43 Events after the reporting date

Establishment of Wind Power Development Company Limited

On 30 January 2023, the Company and CI NMF I Cooperatief U.A. established Wind Power Development Company Limited, which was incorporate in Thailand with total registered share capital of Baht 1 million. The Company owns 51% of the shareholding interests. The principal business operation is to conduct feasibility studies of wind power generation especially wind power projects in Thailand.



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