

GPSC Sustainable Product, Service, and Revenue 2025



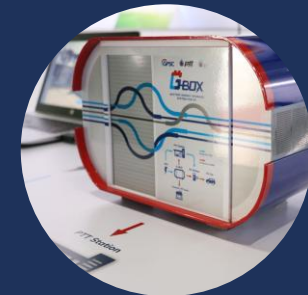
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Introduction

GPSC operates a diversified portfolio across both power and non-power businesses, some of which contribute to the transition toward a low-carbon economy in line with both international and national climate goals. This positions GPSC to include potentially sustainable activities within its portfolio, aligned with the EU Taxonomy definition*. Accordingly, this overview assesses the sustainable revenue potential of GPSC's core business activities in accordance with the EU Taxonomy for sustainable economic activities. The analysis focuses on four key areas: (1) electricity generation from hydropower, (2) electricity generation from wind power, (3) electricity generation using solar photovoltaic technology, and (4) manufacture of batteries. Each activity is examined for alignment with the EU Taxonomy's technical screening criteria, substantial contribution to climate change mitigation, compliance with 'Do No Significant Harm' (DNSH) principles, and adherence to minimum social safeguards. This assessment highlights GPSC's strategic direction in enhancing the sustainability of its operations while supporting Thailand's and the global transition to a low-carbon economy.





Electricity generation from hydropower

Electricity generation from hydropower

GPSC's hydropower portfolio, comprising the Xayaburi, Houay Ho, and Nam Lik 1 power plants, demonstrates strong potential alignment with the EU Taxonomy activity “Electricity generation from hydropower” under the climate change mitigation objective. Both Xayaburi and Nam Lik 1 exceed the required power density threshold of 5 MW/km², with values of 26.18 and 5.57 MW/km² respectively, indicating a substantial contribution to climate mitigation. While Houay Ho falls slightly below the threshold at 4.11 MW/km². However, it is qualified by meeting the criteria for run-of-river hydropower plants, aligning with the substantial contribution criteria.



Run-Off-River

Xayaburi Power Plant

26.18 MW/km²

Power density of the electricity generation



Run-Off-River

Houay Ho Power Plant

4.11 MW/km²

Power density of the electricity generation



Run-Off-River

Nam Lik Power 1

5.57 MW/km²

Power density of the electricity generation



Electricity generation from wind power

Electricity generation from wind power

GPSC invests in and operates renewable energy assets, including onshore wind power generation. This activity is identified as aligned with the EU Taxonomy activity "Electricity generation from wind power", particularly under the climate change mitigation objective. This alignment is based on the EU Taxonomy's technical screening criteria, which require that the activity consists of the construction and operation of wind power plants for the generation of electricity. The criteria do not impose specific GHG thresholds, as electricity generation from wind is inherently considered to make a substantial contribution to climate change mitigation due to its zero direct greenhouse gas emissions during operation.



Generating and Supply Power from Offshore Wind Farm Changfang and Xidao is located in Changhua Coast, Taiwan with the capacity of 595 Megawatts and 20 years Power Purchase Agreement (PPA) with Taiwan Power Company.



Electricity generation using solar photovoltaic technology

Electricity generation using solar photovoltaic technology

GPSC engages in the generation of electricity from solar photovoltaic (PV) technology through its owned and operated renewable energy projects. This activity is identified as aligned with the EU Taxonomy activity “**Electricity generation using solar photovoltaic technology**”, which contributes directly to the environmental objective of **climate change mitigation**. Under the EU Taxonomy technical screening criteria, electricity generation from solar PV is considered to make a substantial contribution to climate mitigation without a specific emissions threshold. The analysis of this activity results in a preliminary indication that GPSC’s solar PV operations meet the substantial contribution criteria under the EU Taxonomy. This alignment reinforces GPSC’s strategic direction toward renewable energy expansion and decarbonization in line with international sustainability frameworks.

Example of electricity generation using solar photovoltaic technology project



Xayaburi Power Plant



Global Renewable Power Co., Ltd. (GRP)



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



Private PPA Solar Power Generation and Distribution Project



Avaada Energy Private Limited (AEPL)



Thai Solar Renewable Co., Ltd. (TSR)



Glow Energy Solar



Manufacture of batteries

Manufacture of batteries (2/2)

Manufacture of batteries

GPSC, through its strategic investments in the energy storage sector, is engaged in the manufacture of rechargeable batteries and battery components for use in transport, stationary and off-grid energy storage, and other industrial applications. This activity is identified as potentially aligned with the EU Taxonomy activity "Manufacture of batteries", particularly under the climate change mitigation objective.

This alignment is based on the EU Taxonomy's technical screening criteria, which recognize the manufacture of rechargeable batteries, battery packs, and accumulators as an enabling activity contributing to substantial GHG emission reductions. The criteria also cover the production of key battery components such as battery cells, active materials, casings, and electronic components, as well as the recycling of end-of-life batteries, which GPSC is progressively incorporating into its operational strategy.



Manufacture of batteries (2/2)

Manufacture of batteries – Recycling Approach

In addition to its manufacturing activities, GPSC is collaborating with 24M Technologies to develop and implement innovative battery technologies. Notably, 24M's LiForever™ technology introduces a direct material recycling process for lithium-ion batteries, including lithium iron phosphate (LFP) batteries. This approach enables the efficient and cost-effective recovery and reuse of battery materials, maintaining the integrity of active materials without generating black mass—a common issue in traditional recycling methods.

The integration of LiForever™ aligns with the EU Taxonomy's emphasis on recycling end-of-life batteries. By adopting this technology, GPSC enhances the sustainability of its battery manufacturing operations, contributing to a circular economy and reducing the environmental impact of battery production and disposal.

Furthermore, 24M's Electrode-to-Pack (ETOP) technology streamlines battery pack design by eliminating individual cells and modules, directly integrating electrodes into the pack. This innovation not only improves energy density and reduces costs but also supports sustainability by minimizing material usage and waste.



Summary of Sustainable Revenue

Summary of Sustainable Revenue

Economic Activity	Revenue and Percentage	Revenue Generated (FY 2022)	Revenue Generated (FY 2023)	Revenue Generated (FY 2024)	Revenue Generated (FY 2025)
Total Revenue	Total Revenue (THB)	127,908,260,000	92,900,770,000	92,799,000,000	87,493,000,000
Sustainable Revenue	Sustainable Revenue (THB)	1,238,268,854.21	2,188,796,755.18	3,675,731,030.00	4,145,981,045.15
Percentage of sustainable revenues	%	0.97	2.36	3.96	4.74

Own Classification System of Sustainable Product and Service

Own Classification System of Sustainable Product and Service

GPSC applies an internal Sustainable Product Classification System (Own Classification System) based on the Thailand Greenhouse Gas Management Organization (TGO) Carbon Label Scheme. Products and services are classified as sustainable when they obtain Carbon Footprint Product (CFP) certification and/or Carbon Footprint Reduction (CFR) certification, demonstrating quantified and independently verified life-cycle greenhouse gas emissions and emissions reductions. The classification relies on objective, measurable, and externally verified criteria and is reviewed periodically to ensure certification validity. Products meeting these requirements are included in GPSC's sustainable product and service portfolio and may contribute to sustainable revenue reporting.

The classification system is externally validated through the TGO Carbon Label Scheme. All products classified as sustainable under this system are subject to independent verification by TGO-approved verification bodies and certification by the TGO.

Carbon Footprint Reduction (CFR)

[illegible]





น้ำปราศจากแร่ธาตุ (GPSC CUMI)

เลขที่ใบอนุญาต: TGO CFR FY24-018-0134

ผู้ผลิต: บริษัท ทีเอสเอส (เพาเวอร์) อินเตอร์เนชั่นแนล จำกัด (มหาชน) (00000)

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ประเภทอุตสาหกรรม: เคมีภัณฑ์

หน่วยการทำงาน: 1 ลูกบาศก์เมตร

สถานะ: B2B

วันที่อนุมัติ: 28/08/2567

วันหมดอายุ: 27/08/2570

รายละเอียด:

Carbon Footprint Product (CFP)

The screenshot displays a Thai company's environmental report. At the top right, a logo features a globe with a circular arrow and the number '2'. Below it, the text '74.8 kgCO₂e' is shown. A blue banner contains the text 'โปลี (PSC CUP2)'. The main content area includes a photograph of an industrial facility with tall chimneys and a complex network of pipes. Below the photo is a horizontal bar chart titled '% สัดส่วนการปล่อยก๊าซเรือนกระจก' (Percentage of greenhouse gas emissions). The chart has four bars: 'การปล่อยจากโรงงาน' (Emissions from the factory) at approximately 15%, 'การปล่อยจากยานพาหนะ' (Emissions from vehicles) at approximately 85%, 'การปล่อยจากอาคาร' (Emissions from buildings) at approximately 0%, and 'การปล่อยจากกระบวนการผลิต' (Emissions from production processes) at approximately 0%. To the right of the chart, there is a list of details in Thai: 'เลขที่ใบรับรอง: TGO CFP FY24-182-03-1997', 'ผู้ผลิต: บริษัท โกลบอล เพาเวอร์ ซินเนอร์ยี่ จำกัด (มหาชน) (000000)', 'ที่อยู่: 555/2 วัฒนาวิเลจ', 'อุตสาหกรรม: พลังงานไฟฟ้า', 'ขนาดอุตสาหกรรม: พลังงานไฟฟ้า', 'หน่วยการคำนวณ: kgCO₂e', 'ขอบเขต: B2B', 'ปริมาณ: 74.8 kgCO₂e', 'วันที่อนุมัติ: 28/08/2567', and 'วันที่หมดอายุ: 27/08/2570'.

โปลี (PSC CUP2)

เลขที่ใบรับรอง: TGO CFP FY24-182-03-1997

ผู้ผลิต: บริษัท โกลบอล เพาเวอร์ ซินเนอร์ยี่ จำกัด (มหาชน) (000000)

ที่อยู่: 555/2 วัฒนาวิเลจ

อุตสาหกรรม: พลังงานไฟฟ้า

ขนาดอุตสาหกรรม: พลังงานไฟฟ้า

หน่วยการคำนวณ: kgCO₂e

ขอบเขต: B2B

ปริมาณ: 74.8 kgCO₂e

วันที่อนุมัติ: 28/08/2567

วันที่หมดอายุ: 27/08/2570

% สัดส่วนการปล่อยก๊าซเรือนกระจก

ประเภทการปล่อย	สัดส่วน (%)
การปล่อยจากโรงงาน	~15
การปล่อยจากยานพาหนะ	~85
การปล่อยจากอาคาร	~0
การปล่อยจากกระบวนการผลิต	~0

Quantified Targets for Sustainable Product and Service Revenue

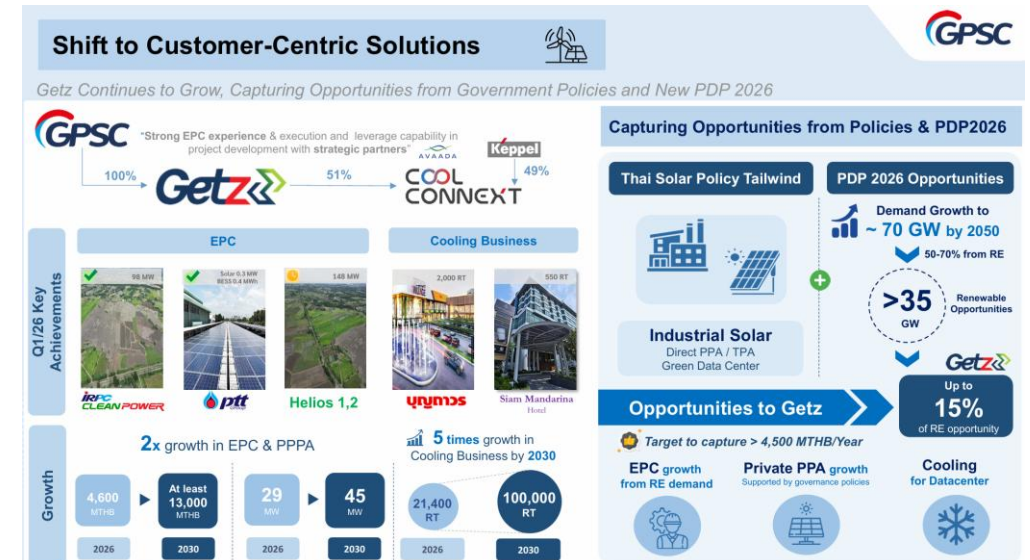
Quantified Targets for Sustainable Product and Service Revenue

GPSC has established specific, time-bound and quantified targets for increasing revenues from sustainable products and services through the expansion of renewable electricity generation and customer-centric clean energy solutions. The Company's sustainable offerings include renewable electricity generated from solar photovoltaic (PV) projects aligned with the EU Taxonomy activity "Electricity generation using solar photovoltaic technology" and clean energy solutions delivered through Getz Energy, including solar EPC, Private Power Purchase Agreements (Private PPAs), district cooling systems, and Energy-as-a-Service (EaaS) solutions.

To support sustainable revenue growth and expand its sustainable products and services portfolio, GPSC has established the following targets by 2030:

- Increase Getz's solar EPC and clean energy solutions business value from THB 4.6 billion in 2026 to at least THB 13 billion by 2030.
- Expand Private PPA solar capacity from 29 MW in 2026 to 45 MW by 2030 to support customers' renewable energy transition.
- Grow district cooling capacity from 21,400 RT in 2026 to 100,000 RT by 2030, representing approximately five-fold growth in energy-efficient cooling services.

These targets are supported by Getz's solar EPC project pipeline, which is targeted to increase from approximately **THB 1.8 billion in 2025 to THB 13 billion by 2030**, and by strategic growth opportunities arising from Thailand's renewable energy policies and PDP 2026. Through its solar EPC, Private PPA, district cooling, and renewable electricity businesses, GPSC aims to capture more than **THB 4.5 billion per year** of renewable energy-related opportunities and position Getz to capture up to **15% of renewable energy market opportunities** associated with Thailand's projected renewable energy expansion.



**Investments made (CAPEX, OPEX) to increase
sustainable products or services portfolio**

R&D resources to develop sustainable products or services

GPSC invests in research, development, and innovation (R&D) activities to support the creation of future sustainable products and services and accelerate the transition toward a low-carbon energy system. During the reporting period, GPSC invested approximately **THB 21.03 million** in sustainable technology research, feasibility studies, pilot development, and strategic partnerships related to emerging low-carbon energy solutions. These R&D initiatives are aligned with climate change mitigation activities recognized under the EU Taxonomy framework and are intended to support the future commercialization of sustainable products and services.

Through these R&D investments, GPSC is building a pipeline of future sustainable products and services, including low-carbon electricity, clean steam, hydrogen-based energy solutions, carbon management services, renewable energy systems, and integrated energy solutions. Although these initiatives are currently at the research, feasibility assessment, technology evaluation, and partnership development stages, they support the development of future economic activities recognized under the EU Taxonomy Climate Change Mitigation objective and contribute to GPSC's long-term sustainable growth strategy.

S3 - New S-Curve Business project update

On progress of executing S-Curve with tangible Projects for a Decarbonized Future

On-going : SMR Gen. 4

1 Molten Salt Reactor



- Generates power & steam matching customer needs (Pressure/temp)
- Power barge (Plug & play)

2 Pebble Bed



- Inherent safety design- no fuel meltdown
- High temp steam generation
- Shaped in spherical fuel element (Pebble-bed)

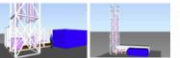
CCS : MOU with Axens



2 Years MOU
24th Sep 2025

Strategic Rationale

- Partnership: Collaborates with Axens to conduct feasibility study on DMX™ Carbon Capture technology
- DMX™: 2nd generation Amine based technology with efficiently capture CO2 from power plant emissions with lower energy use



Transportable containerized unit

Ammonia with Doosan

Key project impacts

- Secures long-term asset viability via 50% CO2 reduction
- Same heat rate with G1

Completed Pre-FS study

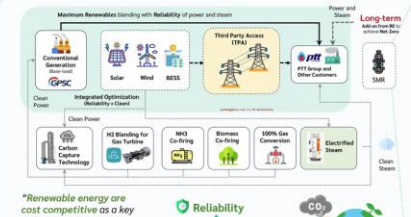
- Economics : Policy support required for commercialize.
- Path Forward: GHECO-One as potential for co-firing technology demonstration



Note: 1. Current 2020 price forecasts remain high (e.g., ~400 USD/ton) sources: McKinsey Analysis, May 2025.

Powering SMR for Thailand & MTP

Bridge Technology and Society Making SMR Knowledge Accessible, Credible, and Relevant for Thailand's Energy Future



Maximum Renewables (solving with Reliability of power and steam)

Power and Steam Long-term solution for SMR

Third Party Access (TPA)

Integrated Optimization (Renewable + Clean)

Clean Power

100% Gas Conversion

Electrified Steam

CO2

Reliability

Affordability

Sustainability

Renewable energy are cost competitive as a key technology for net zero. However, large scale development of renewables can increase the risk of grid instability if not properly managed - and this also come with additional costs

Partnership



Public & Dialogue



Social Awareness



การแถลงข่าวการเปิดตัว



ไทยจำเป็นต้องมีโรงไฟฟ้านิวเคลียร์?



เพื่อ Decarbonization



R&D resources to develop sustainable products or services

Advanced Low-Carbon Power Generation Technologies

GPSC is investing approximately **THB 1.87 million** in the R&D of pontoon-mold technology for floating solar photovoltaic (FPV) systems. Key initiatives include Small Modular Reactor (SMR) technology and renewable energy integration through solar photovoltaic (PV), wind power, and battery energy storage systems (BESS). These R&D activities are associated with EU Taxonomy activities including **"Construction and safe operation of new nuclear power plants, for the generation of electricity and/or heat, including for hydrogen production, using best-available technologies"**, **"Electricity generation using solar photovoltaic technology"**, **"Electricity generation from wind power"**, and **"Storage of electricity"**. The initiatives aim to support future sustainable products and services related to low-carbon electricity generation, clean steam production, and grid flexibility solutions.



Hydrogen and Alternative Fuel Technologies

GPSC also conducts the assessment of hydrogen and alternative fuel technologies, including hydrogen blending for gas turbines and ammonia (NH₃) co-firing. These R&D activities support future low-carbon fuel systems and industrial decarbonization pathways and are associated with EU Taxonomy activities such as **"Manufacture of hydrogen"** and the production and utilization of hydrogen-based synthetic fuels. The initiatives are intended to support future sustainable products and services related to hydrogen energy solutions, low-carbon fuels, and industrial energy transition.



Carbon Management Technologies

In 2025, GPSC has evaluated the carbon capture technologies to support emissions reduction from conventional power generation and industrial processes. These initiatives are associated with EU Taxonomy activities including **"Capture of CO₂"**, **"Transport of CO₂"**, and **"Permanent underground geological storage of CO₂"**. The R&D activities aim to support the development of future carbon management services and emissions reduction solutions for industrial customers.



Industrial Decarbonization and Clean Energy Solutions

GPSC invested approximately **THB 47.66 million** in industrial decarbonization and smart energy solutions, including electrified steam systems, biomass co-firing, fuel-switching pathways, Smart Energy Solutions at Wangchan Valley, and the Energy & Certificate Trading under ERC Sandbox Phase 2. These initiatives support digital energy management, renewable energy integration, and low-carbon energy services, while contributing to industrial process decarbonization. The initiatives are associated with EU Taxonomy climate change mitigation activities, including **"Electricity generation from bioenergy"** and other low-carbon energy solutions, supporting the development of future sustainable products and services such as clean steam, renewable thermal energy, smart energy systems, and energy trading platforms.



Infrastructure improvements to ensure products and services are produced/manufactured/maintained sustainably

AVAADA ENERGY PRIVATE LIMITED (AEPL)

INDIA



GPSC holds 39.9% shares through Global Renewable synergy Co., Ltd. (GRSC) in Avaada Energy Private Limited (AEPL), which operates a renewable business in several states in India. AEPL distributes the entire capacity to industrial customers and the Government of India under a long-term PPA, which is valid for 10-25 years.

Shareholder's Equity	Type of Business
39.9%	Very Small Power Producer (VSPP)
Equity Capacity	
 Electricity 8,874.5 MW	
Commercial Operation Date	Fuel Type
2018 - 2026	Solar, Wind

AVAADA Energy Private Limited (AEPL)

GPSC has invested THB 10,500,000 in equity capital (39.9% shareholding via GRSC) to expand its renewable energy portfolio through AEPL's solar and wind generation assets across India, totaling 8,874.5 MW of equity capacity. This investment supports infrastructure development for utility-scale renewable power generation, with output delivered to industrial customers and the Government of India under long-term PPAs (10–25 years), thereby increasing the proportion of sustainable energy products within the Group's portfolio.

PRIVATE PPA SOLAR POWER GENERATION AND DISTRIBUTION PROJECT

THAILAND



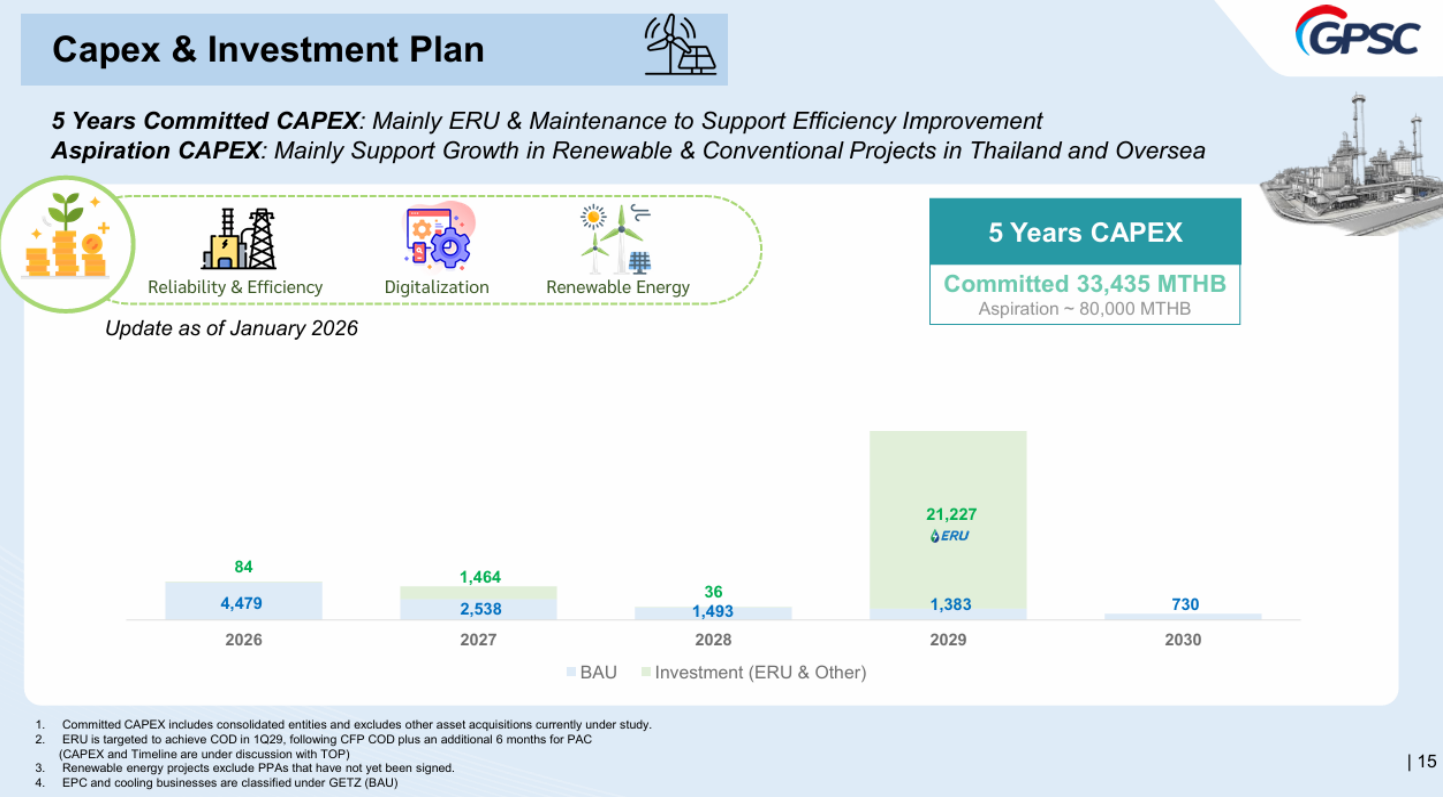
GPSC group has further developed its renewable-energy business operations by seeking investment in solar farm or solar rooftop projects with government bodies and private companies to invest and share benefits from electricity generation using solar power Private Power Purchase Agreement (PPPA). Currently, the company's subsidiaries have entered PPAs with several companies within and outside PTT Group.

Shareholder's Equity	Type of Business
100%	Very Small Power Producer (VSPP)
Equity Capacity	
 Electricity 49 MW	
Commercial Operation Date	Fuel Type
2012 - 2024	Solar Power

Private PPA Solar Power Generation and Distribution Project

GPSC has invested a combined THB 100,610,782 across project components to develop solar farm and rooftop solar infrastructure in Thailand, enabling the production and distribution of renewable electricity through Private Power Purchase Agreements (PPPAs) with both government bodies and private companies. With 100% shareholder equity, this investment reflects direct infrastructure improvement to expand the Group's sustainable electricity generation and distribution capacity, supplying customers both within and outside the PTT Group.

Infrastructure improvements to ensure products and services are produced/manufactured/maintained sustainably



Internal training on sustainable design principles for functions developing products or services (e.g. R&D, innovation)

As part of its operational expenditure (OPEX) on human capital development, GPSC invested in 9 sustainability-related training programmes, representing 298 training hours and a total training investment of approximately THB 805,275. The programmes were delivered to executives and employees from key business functions responsible for product, service, engineering, and innovation development, covering topics such as energy transition and climate change management, net-zero strategy, ESG integration, sustainable finance, renewable energy technologies, and solar photovoltaic system design and engineering. These investments strengthen employees' knowledge and technical competencies in sustainable design principles, enabling the development and continuous improvement of low-carbon, resource-efficient, and innovative products and services that support GPSC's sustainability and energy transition objectives.

Incentives for sales staff on sustainable products or services

Incentives for sales staff on sustainable products or services

GPSC integrates sustainability-related sales KPIs into its annual performance management system. Sales personnel are incentivized through measurable business targets that promote renewable energy deployment and environmental attribute products — supporting both the company’s growth strategy and customers’ decarbonization goals.



9% Wight

Solar Private PPA Execution

Objective: Measure the number of Solar Private PPA agreements successfully signed with industrial customers during the year to accelerate renewable energy deployment and support the company’s clean energy growth strategy.

Performance Targe

LEVEL 3

Sign 2 Solar Private PPA contracts

LEVEL 5

Sign 4 Solar Private PPA contracts



7% Wight

Environmental Attribute Certificate Sales

Objective: Measure delivery of Renewable Energy Certificates (RECs) under existing contracts while expanding new markets through I-REC and Carbon Credit sales — generating environmental attribute revenue and supporting customers’ Net Zero commitments.

Performance Target

LEVEL 3

Deliver contracted RECs & approach ≥1 new customer

LEVEL 5

Close ≥1 I-REC or Carbon Credit contract

LEVEL 5

Close ≥2 I-REC or Carbon Credit contracts

ANNUAL SALES PERFORMANCE MANAGEMENT



Direct incentive linkage: These KPIs directly incentivize sales personnel to promote sustainable energy solutions and environmental attribute products, contributing to renewable energy expansion and customer decarbonization.

Thank You

