

MD&A

FY2021 and Q4/2021



Management Discussion and Analysis

Year 2021 and 4th Quarter of 2021

Significant Events in 2021 – Present

- In 2021, the Thai economy was beset by the COVID-19 pandemic. The Company maintained the highest level of COVID-19 prevention measures and management in response to the spread of COVID-19 through GPSC's G-COVID center. The Company also designated the production process area as a special controlled area and set up a special operation team (Golden man) for each power plant. External parties are strictly refrained from entering the Company's offices and operating areas. Consequently, the Company can secure its operation, ensuring stability and continuity of electricity, steam and utilities supply to meet all our customers' needs.
- The Company announced new corporate strategy to keep pace with the energy transition by moving towards clean energy in line with worldwide reducing global warming trends and Thailand's national energy plan. The Company aims to be the top three power company in Southeast Asia with more than half of MW from green portfolio. The 4S strategy model comprises the following:
 1. **Strengthen and Expand the Core:** strengthening the Company's core businesses and expertise and being operational and business excellent along with expanding the Company's businesses that aims to ensure the balance for all stakeholders, as well as being international recognized.
 2. **Scale-up Green Energy:** scaling up green energy development projects including solar and wind energy, and an integration of renewable energy with an Energy Storage System (ESS).
 3. **S-Curve & Batteries:** investing in energy innovation to earn revenue from battery businesses and the new S-curve to support energy businesses transition in the future.
 4. **Shift to Customer-centric Solutions:** moving towards new energy through the use of energy innovation to provide solutions for customers' various needs.
- The Glow Energy Phase 5 power plant had unplanned outages which had no impact on the sale of electricity and steam to industrial customers as the Company is able to manage the operation through the Company's electricity and steam network to serve customers' demand during the period. In addition, the Company has done the process of insurance in order to mitigate the impact from the incidents. Details are as follows:
 - The unplanned outage of the Glow Energy Phase 5 power plant during June 4 – October 18, 2020, and December 6, 2020 – April 1, 2021. The Company recognized insurance claim in 2021, which covered compensation during the period. However, there was a deductible for Property Damage (PD) of USD 1.5 million and Business Interruption (BI) for 60 days.
 - The Glow Energy Phase 5 power plant had an unplanned outage from August 14, 2021, and currently, in the process of maintenance and insurance claim. The plant is expected to resume normal operation in February 2022.
- The GHECO-One power plant had an unplanned outage from August 30, 2021, for 28 days. The power plant resumed its normal operation since September 27, 2021.

Investments and Project Progress

- On January 20, 2021, the Board of Directors Meetings No. 1/2021 resolved to approve the Company to invest through the Company's newly set-up subsidiary by way of capital increase in Anhui Axxiva New Energy Technology Co., Ltd. ("AXXIVA"), which operate a battery manufacturing business in China using technology license of 24M Technologies, Inc. (24M), USA. The total investment was THB 499 million for the acquisition of 11.1% of the total capital. The proceed will be used in building Phase 1 SemiSolid battery plant in China at production capacity of 1 GWh p.a., serving customers in electric vehicle industry, e.g., Chery New Energy Automobile. Later, on February 19, 2021, the Company has established GPSC Singapore Pte. Ltd. in Singapore, in which the Company holds a 100% stake, to proceed for the investment in AXXIVA as mentioned above.
- The Company's Rayong Waste to Energy Project with Refuse Derived Fuel (RDF) technology at production capacity of 9.8 MW is located in Numkok Sub-district, Muang District, Rayong Province. The RDF power plant had started its commercial production and has sold electricity to the Provincial Electricity Authority since May 28, 2021.
- Global Renewable Power One Company Limited (GRP1), indirectly associate which the Company holds shares together with PTT Global Management Company Limited (PTTGM) in the proportion of 50:50 has achieved the conditions precedent under the share purchase agreement for 90% of the total shares in Sheng Yang Energy Company Limited ("Sheng Yang"). The total value of the transaction is approximately THB 2,560 million. The Company has been recognized the operating results from Sheng Yang since May 28, 2021.
- The Company unveiled its "G-Cell" Energy Storage Unit Production Plant with a total initial capacity of 30 MWh per year, the first in Southeast Asia that employs the SemiSolid technology of 24M Technologies, Inc. (24M), USA. The production plant is located in Map Ta Phut Industrial Estate in Rayong Province, which has started its production since July 19, 2021.

- The Company has established Global Renewable Synergy Company Limited (“GRSC”), in which the Company holds a 100% stake, to support an investment in renewable energy abroad. In 2021, GRSC has invested in renewable energy projects, as follows:
 - On July 13, 2021, GRSC has completed the acquisition of shares in Avaada Energy Private Limited (AEPL), India’s leading developer of renewable energy projects, with a total investment of THB 14,984 million, accounting for 41.6% of the total capital. As of December 31, 2021, AEPL has a total committed capacity of 4,608 MW, of which 2,205 MW are from operating plants and 2,403 MW are from under-construction plants, which will gradually begin commercial operations between 2022-2023. In addition, AEPL aims to expand its capacity up to 11,000 MW by 2025.
 - On July 14, 2021, GRSC has entered into an agreement with Copenhagen Infrastructure Partners (“CIP”), acting on behalf of the funds Copenhagen Infrastructure II K/S (“C-II”) and Copenhagen Infrastructure III K/S (“C-III”), to join the Changfang and Xidao offshore wind farm in Taiwan with a total capacity of 595 MW and a total investment of USD 500 million. The projects is expected to start full commercial operation date in the first quarter of 2024. Furthermore, the Company has established Global Renewable Synergy Company Limited Taiwan (“GRSC TW”) to acquire a 25% interest in the abovementioned project. The Company expects that the conditions precedent will be satisfied, and that the transfer of shares will be completed before the end of the 2nd quarter of 2022.
- SPP Replacement project of Glow Energy Company Limited (GLOW) will replace expiring Firm-SPP cogeneration power plants, consisting of 3 projects that are progressing as follows:
 - GLOW Energy Phase 2, with the electricity generating capacity of 192 MW and steam generating capacity of 300 tons/hour under two PPAs with EGAT for 60 MW, is currently under construction with 62.9% progress and expected to start commercial operation in 2022.
 - GLOW SPP 2, with the electricity generating capacity of 96 MW and steam generating capacity of 230 tons/hour under two PPAs with EGAT for 60 MW, has signed construction contract with Jurong Engineering Limited (Singapore) and Thai Jurong Engineering Company Limited to start the project construction with an expected commercial operation date in 2024. The Company has realized the economic and business environment as well as industrial conditions that has changed over time, therefore the Company considered to reduce the capacity of the project by reducing the number of machines from 2 units to 1 unit per PPA. Nevertheless, by using advanced technology, the Company will increase the project efficiency in terms of power and steam generation, the stability of power and steam network, serving energy demand of EGAT and industrial customers as well as being environmentally friendly.
 - GLOW SPP 3, with the electricity generating capacity 96 - 120 MW and steam generating capacity of 150 - 300 tons/hour under two PPAs with EGAT for 60 MW, is under consideration for investment possibility and is under preparation of Environmental Impact Assessment (EIA) Report. The project is expected to start commercial operation in 2024 - 2025.
- As of December 31, 2021, the Company holds a 14.17% stake in 24M Technologies, Inc. (24M), USA, decreasing from a 26.02% stake at the end of 2020 as the Company did not increase its capital shares after 24M has issued capital increase shares to other shareholders, i.e., Volkswagen Group. However, such lower stake in 24M does not impact the Company’s license to manufacture of SemiSolid technology and sale of batteries in Thailand.
- On January 11, 2022, the Company and ARUN PLUS Company Limited, a wholly owned subsidiary of PTT Public Company Limited, have established Nuovo Plus Company Limited (NUOVO PLUS) in which the Company and ARUN PLUS hold 49% and 51% of the shares, respectively. The objectives of NUOVO PLUS are to support investment in battery value chain, including investment in related businesses, supporting the electric vehicle industry in line with Thailand’s automotive industry policy of promoting electric vehicles, and Energy Storage System. This joint investment will increase capability in enhancing competitive advantage in battery business and electric vehicles’ supply chain responding to growth opportunities.
- On February 7, 2022, the Company has entered into the Unit Purchase Agreement with CES Iwate Taiyoko Hatsudensho GK to sell the shares in Ichinoseki Solar Power 1 GK (ISP1), a solar power plant, totaled 100% of the total capital. The transaction is expected to be completed in Q1/2022. This is part of asset management in alignment with the Company’s strategy to expand its total capacity from green portfolio in target countries. The Company will recognize the value-added profit from the investment in ISP1 and plans to use the proceeds from the transaction for further investment in accordance with the Company’s strategy.

Synergy from Acquisition of GLOW

In 2021, the Company recognized synergy value from the merger of over THB 1,633 million (after tax), higher than planned. The synergy value was mainly from the management of power and steam network integration and maintenance, as well as the reduction in operating costs via an improvement of procurement process and inventory cost control, creating economies of scale. Other co-managements include managing financing costs, insurance, working capital, and organizational cost control.

Q4/2021 Operating Results

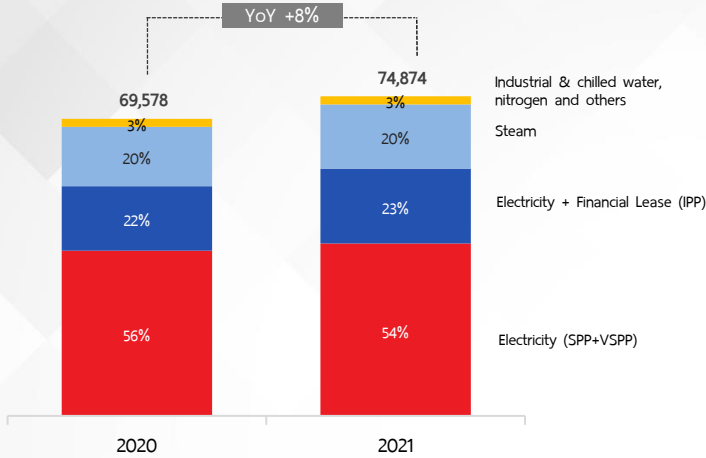
- **Net profit for the Company in Q4/2021** was THB 1,168 million, decreased by THB 290 million or 20% from **Q4/2020** which was mainly due to gross profit of SPP business decreased following higher natural gas and coal price. However, there was an increase in gross profit of IPP business from higher Availability Payment (AP) due to THB depreciation, and higher availability rate. Energy Payment (EP) of Sriracha Power Plant and GIPP also increased from an increase in energy dispatch to EGAT. In addition, the Company recognized partial insurance claim in this quarter from an unplanned outage of the Glow Energy Phase 5 power plant.
- When comparing to **Q3/2021**, net profit for the Company decreased by THB 707 million or 38% mainly due to higher natural gas and coal price, and lower electricity and steam sales volume to industrial customers in line with industrial customers' planned maintenance, resulting in lower gross profit of SPP business. In addition, the Company recognized lower shares of profit from Xayaburi hydro power plant due to seasonality. However, the Company received partial insurance claim in this quarter from an unplanned outage of the Glow Energy Phase 5 power plant.
- The Company recognized synergy value from the acquisition of GLOW amounting THB 541 million (after tax) in Q4/2021, mainly from operation and maintenance - power and steam network integration, commercial activities especially cost optimization, production and expanding customers base as well as procurement and maintenance management.

Overall operating results of the Company and its subsidiaries (unit: THB million)	Q4/20	Q3/21	Q4/21	change +/-		2020	2021	Change
				YoY	QoQ			YoY
Operating revenue	16,532	17,997	22,019	33%	22%	69,578	74,874	8%
Cost of sales (excluding depreciation and amortization)	(11,601)	(13,075)	(18,098)	56%	38%	(48,249)	(55,206)	14%
Gross profit	4,931	4,922	3,920	(20%)	(20%)	21,329	19,667	(8%)
Selling and administrative expenses	(528)	(431)	(582)	10%	35%	(1,790)	(1,963)	10%
Other operating income	5	5	5	2%	0%	20	20	0%
EBITDA	4,409	4,496	3,343	(24%)	(26%)	19,559	17,724	(9%)
Depreciation and amortization	(2,046)	(2,205)	(2,200)	8%	(0.2%)	(8,287)	(8,630)	4%
EBIT	2,362	2,291	1,143	(52%)	(50%)	11,272	9,094	(19%)
Finance costs	(965)	(998)	(901)	(7%)	(10%)	(4,024)	(3,860)	(4%)
Other non-operating income and expenses	133	262	1,063	699%	306%	915	2,100	130%
Dividend received and shares of profit of associates and joint ventures	367	772	201	(45%)	(74%)	1,320	1,792	36%
Income tax expenses	(141)	(295)	(97)	(31%)	(67%)	(992)	(1,192)	20%
Profit before FX and extraordinary items	1,757	2,033	1,409	(20%)	(31%)	8,491	7,934	(7%)
Net foreign exchange gain (loss)	12	(95)	68	466%	(172%)	(1)	(93)	9,221%
Net profit	1,769	1,938	1,477	(17%)	(24%)	8,490	7,841	(8%)
Non-controlling interests	(311)	(63)	(309)	(1%)	391%	(982)	(522)	(47%)
Net profit for the Company	1,458	1,875	1,168	(20%)	(38%)	7,508	7,319	(3%)
Adjusted Net Income¹	1,813	2,256	1,571	(13%)	(30%)	8,962	8,907	(1%)
Gross profit margin (%)	30%	27%	18%	(12%)	(10%)	31%	26%	(5%)
Net profit margin (%)	9%	10%	5%	(4%)	(5%)	11%	10%	(1%)
Adjusted Net Income margin (%)	11%	13%	7%	(4%)	(5%)	13%	12%	(1%)

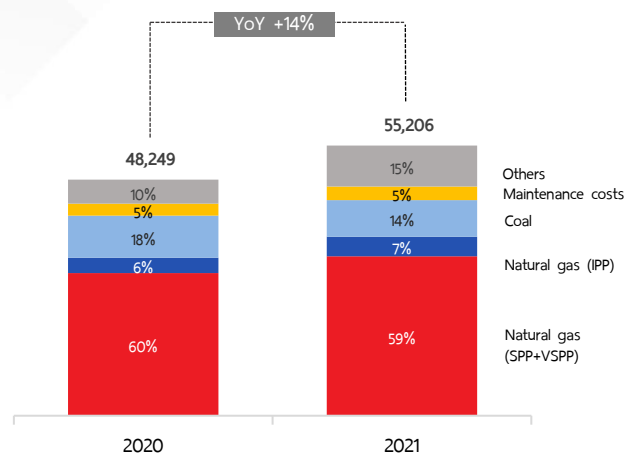
Notes: 1. Adjusted Net Income is net profit attributed to the Company excluding "fair value of intangible assets from the acquisition of GLOW". (see details on page 24)

Comparison of Company's Performance

Operating Revenue (THB million, %)



Cost of Sales (THB million, %)



2021 Gross Profit Breakdown (THB million, %)

Very Small Power Producer (VSPP)

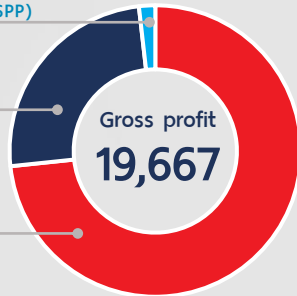
THB 355 million | 2%

Independent Power Producer (IPP)

THB 4,889 million | 25%

Small Power Producer (SPP)

THB 14,423 million | 73%



Gross profit for the year 2021 was THB 19,667 million, decreased by THB 1,662 million or 8% from 2020.

Q4/2021 Gross Profit Breakdown (THB million, %)

Very Small Power Producer (VSPP)

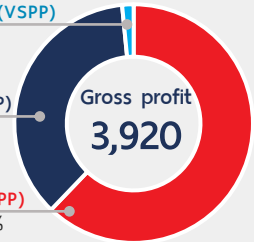
THB 61 million | 2%

Independent Power Producer (IPP)

THB 1,423 million | 36%

Small Power Producer (SPP)

THB 2,437 million | 62%



Gross profit in Q4/2021 was THB 3,920 million, decreased by THB 1,011 million or 20% from Q4/2020 and decreased by THB 1,002 million or 20% from Q3/2021.

yoy Q4/2021 VS Q4/2020

- **Gross profit of Independent Power Producer (IPP)** increased by THB 307 million or 27%, mainly due to the following:
 - The USD-linked portion of the Availability Payment (AP) increased due to THB depreciation together with higher AP rate from GHECO-One and GIPP.
 - Energy Payment (EP) of Sriracha Power Plant and GIPP increased due to an increase in electricity dispatch to EGAT.
 - Higher revenue from sales of HHPC due to higher electricity sales volume.
- **Gross profit of Small Power Producer (SPP)** decreased by THB 1,270 million or 34% mainly due to an increase of natural gas and coal price, and an unplanned outage of Glow Energy Phase 5 from August 14, 2021, resulting in lower margin from electricity and steam sales to industrial customers as well as total electricity sales volume decreased.

qoq Q4/2021 VS Q3/2021

- **Gross profit of Independent Power Producer (IPP)** increased by THB 334 million or 31%, mainly due to the following:
 - Higher Availability Payment (AP) of GHECO-One as a result of there was an unplanned outage 28 days in Q3/2021.
 - Lower AP from Sriracha Power Plant due to planned maintenance in December 2021.
 - Lower revenue from sales of HHPC due to lower electricity dispatch following to seasonality.
- **Gross profit of Small Power Producer (SPP)** decreased by THB 1,284 million or 35% mainly due to higher natural gas and coal price as well as electricity and steam sale volume to industrial customers decreased due to industrial customers' planned maintenance in Q4/2021.

Quarterly Comparison of Company's Performance (cont.)

yoy

Q4/2021 VS Q4/2020

- **Gross profit of Very Small Power Producer (VSPP) and others** decreased by THB 47 million or 44% mainly from the Company sold 50% shares of Global Renewable Power Co., Ltd. (GRP) to a subsidiary of PTT and the transaction has been completed on 4 January 2021, As a results, GRP's performance has been recorded in shares of profit of associates instead of recognized in revenue from electricity sales.
- **Other non-operating income and expenses and Others** in Q4/2021, other non-operating income was THB 1,944 million, increased by THB 1,754 million, mainly from there was recognized partial insurance claim amounting THB 1,295 million of Glow Energy Phase 5's unplanned outage and insurance claim of Ichinoseki Solar Power 1 GK (ISP1) from heavy snow covered solar panels. Meanwhile, other non-operating expense and others were THB 4,588 million, increased by THB 868 million, mainly from write-off machinery of Glow Energy phase 5 incident.
- **Dividend received and shares of profit of associates and joint ventures** was THB 201 million in Q4/2021, decreased by THB 166 million or 45% yoy, mainly from a decrease in shares of profits from Xayaburi Power Company Limited (XPCL) by THB 53 million and dividend from Ratchaburi Power Company Limited (RPCL) decreased by THB 43 million.
- **Non-controlling interests** decreased by THB 2 million

qoq

Q4/2021 VS Q3/2021

- **Gross profit of Very Small Power Producer (VSPP) and others** decreased by THB 51 million or 46% mainly from the decrease of revenue from electricity sales of Ichinoseki Solar Power 1 GK (ISP1) due to lower solar radiation intensity according to seasonality resulting in lower solar production as well as higher maintenance cost there was maintenance work on some project. However, other income from Combine Heat and Power Producing Co., Ltd. (CHPP) increased due to higher the Engineering, Procurement and Construction service (EPC) income.
- **Other non-operating income and expenses and Others** in Q4/2021, other non-operating income was THB 1,944 million, increased by THB 1,659 million, mainly from there was recognized partial insurance claim amounting THB 1,295 million of Glow Energy Phase 5 unplanned outage. Meanwhile, other non-operating expense and others were THB 4,588 million, increased by THB 547 million, mainly from write-off machinery of Glow Energy phase 5 incident.
- **Dividend received and shares of profit of associates and joint ventures** was THB 201 million in Q4/2021, decreased by THB 571 million or 74% qoq, mainly from a decrease in shares of profits from Xayaburi Power Company Limited (XPCL) by THB 555 million due to seasonality effect (out of rainy season).
- **Non-controlling interests** increased by THB 246 million mainly due to higher net profit of GHECO-One as there was unplanned outage 28 days in Q3/2021.

Yearly Comparison of Company's Performance (2021 VS 2020)

Net profit in 2021 was THB 7,319 million, decreased by THB 189 million or 3% from 2020 which was mainly due to the following:

- Gross profit of SPP business decreased mainly due to higher natural gas and coal price, although electricity and steam sales volume to industrial customers were higher, lower margin from electricity and steam sales, and expenses due to unplanned outage of Glow Energy phase 5 even though the Company received partial insurance claim for the incident. In addition, gross profit of IPP business decreased due to planned maintenance of GHECO-One in Q1/2021 and unplanned outage in Q2 and Q3 of 2021 resulting in lower AP.
- However, shares of profit from Xayaburi hydro power plant increased by THB 702 million as a result of higher water level than last year which facing drought situation.

Awards Received in Q4/2021 - Present

On November 4, 2021, the Company won the **Rising Star Sustainability Awards** in the **Sustainability Excellence** category at the **SET Awards 2021**, organized by the Stock Exchange of Thailand and Money & Banking magazine. The Rising Star Sustainability Awards was given to listed companies with outstanding sustainable business practices and a strong commitment to corporate governance while ensuring maximum benefits to the shareholders by building a roadmap for sustainability through value creation in the economic, social, and environmental aspects.

On November 29, 2021, the Company has received 4 awards at the **11th Asian Excellence Awards 2021** for the second consecutive year, which are **(1) Asia's Best CEO** (Mr. Worawat Pitayasiri) **(2) Asia's Best CFO** (Mr. Thitipong Jurapornsiridee) **(3) Asia's Best CSR** and **(4) Best Investor Relations Company (Thailand)** from **Corporate Governance Asia** magazine, Hong Kong's leading economic and governance magazine. The awards are given to leaders and organizations with excellent business operations from across Asia.

On December 17, 2021, the Company received the **Sustainability Disclosure Award (Honorary Award)** at the **Sustainability Disclosure Award 2021** ceremony. This is the third consecutive year that GPSC has been recognized for its transparent sustainability reporting and disclosure of economics, social, and environmental information based on the Global Reporting Initiative (GRI) Standards to the public and stakeholders, demonstrating its commitment to sustainable business practices.

On December 20, 2021, the Company won the excellence award in the **Off-Grid Alternative Energy Project** category for its ground solar power generation project to enhance the livelihoods of Koh Kham residents in Chonburi province at the **Thailand Energy Awards 2020**. The award illustrates the Company's successful efforts in driving its clean and eco-friendly energy business toward sustainability.

In addition, the Company was also included on the **Thailand Sustainability Investment (THSI) 2021 list** for the fourth consecutive year, illustrating the company's commitment to business operations that take into account all stakeholders while maintaining good environmental, social, and governance practices for sustainable growth.

Furthermore, on February 2, 2022, the Company has earned the Bronze Class distinction from S&P Global Sustainability Award with the highest score in the social dimension among its peers in the Electric Utilities industry and is included in the S&P Global Sustainability Yearbook 2022 for the second consecutive year, which aligns with the Dow Jones Sustainability Indices (DJSI) assessment.

2022 Economic Outlook

Thailand economic situation: the Bank of Thailand forecasted Thai economy in 2022 to grow at 3.4% from the recovery in domestic consumption and foreign tourists. The spread of the Omicron variant of COVID-19 will impact the economic recovery particularly in the first half of 2022, in terms of domestic activities, exports sector, and number of foreign tourists.

Meanwhile, the Bank of Thailand expected a temporary rise in headline inflation rate in 2022 at 1.7% from 1.4% due mainly to supply factor, where energy price is expected to increase from higher fuel costs that moves in line with global oil market.

Ft adjustment: on November 29, 2021, the Energy Regulatory Commission (ERC) passed a resolution concurring the automatic power tariff adjustment mechanism (Ft) for the collection of electricity invoice during January 1 – April 30, 2022, at 1.39 Satang/unit, which increased by 16.71 Satang/unit from the previous period. The increase was due mainly to rising fuel costs and higher cost in purchasing electricity from private power producers.

In addition, to keep the stability of the Ft, lessen the burden on electricity users during the uncertain of the global economy from COVID-19 situation, and cope with higher Ft outlook in 2022, the ERC resolved to approve to gradually increase the Ft in 2022 in a step rate.

2022 electricity consumption forecast: Krungsri Research forecasted that the power generation will see continuing growth as demand expected to rise by 3.6% p.a. in line with gradual economic recovery and the government's Power Development Plan (PDP) that encourages capacity expansion and investment in 3 types of power plants, as follows:

1. **IPPs:** plans to replace gas-fired power plants that will expire in 2025 - 2027.
2. **SPPs:** SPP Replacement projects to replace expiring power plants between 2019-2025 are expected, and additional generating should be ongoing to support stronger power demand, especially in the Eastern Economic Corridor (EEC) area.
3. **VSPPs:** investment will accelerate continuously, particularly for residential rooftop solar installations, biomass, biogas, and waste-to-energy in accordance with the government's support.

Operating Results: Independent Power Producer (IPP)

Operating results (unit: THB million)	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
				YoY	QoQ			
Revenue from electricity sales								
- Availability Payment: AP	1,265	1,378	1,453	15%	5%	5,653	5,318	(6%)
- Energy Payment: EP	2,316	1,769	5,575	141%	215%	9,431	12,225	30%
- Money received to submit to Power Developments Funds	3	1	7	132%	1,109%	8	15	93%
Total revenue from electricity sales	3,584	3,148	7,035	96%	123%	15,092	17,558	16%
Revenue from finance lease agreement	193	187	227	18%	22%	822	737	(10%)
Other income	0	0	0	n/a	n/a	20	0	(100%)
Total revenue	3,777	3,335	7,262	92%	118%	15,934	18,295	15%
Cost of raw materials								
- Natural gas ¹	857	647	556	(35%)	(14%)	3,126	4,011	28%
- Coal	1,322	1,097	1,431	8%	30%	5,767	4,233	(27%)
- Others	24	118	3,409	14,106%	2,781%	106	3,706	3,397%
Total cost of raw materials	2,203	1,862	5,397	145%	190%	8,999	11,950	33%
Maintenance cost ²	174	199	251	44%	26%	626	755	21%
Others (excluding depreciation and amortization)	285	185	191	(33%)	4%	951	701	(26%)
Total cost of sales of goods and rendering of services	2,661	2,246	5,840	119%	160%	10,576	13,406	27%
Gross profit	1,116	1,089	1,423	27%	31%	5,358	4,889	(9%)
Gross profit margin	30%	33%	20%	(10%)	(13%)	34%	27%	(7%)

Notes: : 1. Including gas pipeline transmission cost (fixed cost)

Revenue: IPP

Key revenue drivers	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
				YoY	QoQ			
Availability Rate (%)								
Sriracha Power Plant	90%	100%	63%	(27%)	(37%)	97%	91%	(6%)
GIPP	90%	98%	93%	3%	(5%)	97%	92%	(5%)
GHECO-One	94%	69%	96%	2%	27%	94%	75%	(19%)
Electricity dispatch (GWh)								
Sriracha Power Plant	285	58	472	66%	719%	778	1,316	69%
GIPP	0	44	148	n/a	240%	0	697	n/a
GHECO-One	1,378	1,006	1,408	2%	40%	5,478	4,372	(20%)
Houay Ho Power	67	97	83	23%	(15%)	382	403	5%
Total electricity dispatch	1,730	1,204	2,111	22%	75%	6,637	6,788	2%
Average selling price								
Average selling price (THB/kWh)	2.18	2.77	3.44	58%	24%	2.41	2.70	12%

Quarterly Comparison of IPP's Revenue

yoy Q4/2021 VS Q4/2020

Revenue from IPP business in Q4/2021 was THB 7,262 million, increased by THB 3,485 million or 92% yoy mainly due to the following contributing factors:

- **Revenue from Sriracha Power Plant** increased by THB 2,296 million mainly from higher Energy Payment (EP) received from EGAT corresponding to higher electricity dispatch to EGAT. However, the revenue from Availability Payment (AP) decreased according to lower availability rate as there was planned maintenance in December 2021.
- **Revenue from IPP business of GLOW** increased by THB 1,189 million mainly due to higher Energy Payment (EP) from GIPP and GHECO-One following to higher dispatch instruction by EGAT. In addition, the revenue of HHPC increased corresponding to higher electricity dispatch.

qoq Q4/2021 VS Q3/2021

Revenue from IPP business in Q4/2021 was THB 7,262 million, increased by THB 3,928 million or 118% qoq mainly due to the following contributing factors:

- **Revenue from Sriracha Power Plant** increased by THB 2,524 million primarily from increased Energy Payment (EP) received from EGAT corresponding to an increase in energy dispatch to EGAT. However, the AP decreased according to lower availability rate due to planned maintenance in December 2021.
- **Revenue from IPP business of GLOW** increased by THB 1,404 million primarily from higher EP of GIPP and GHECO-One corresponding to higher dispatch instruction by EGAT and higher AP of GHECO-One due to there was unplanned outage for 28 days in Q3/2021. However, revenue of HHPC decreased due to lower electricity dispatch according to seasonality.

Yearly Comparison of IPP's Revenue (2021 VS 2020)

Revenue from IPP business in 2021 was THB 18,925 million, increased by THB 2,361 million or 15% from 2020 mainly from the following:

- **Revenue from Sriracha Power Plant** increased by THB 2,620 million mainly due to higher Energy Payment (EP) following an increase of electricity dispatch to EGAT while Availability Payment (AP) decreased due to higher planned maintenance than last year.
- **Revenue from IPP Business of GLOW** decreased by THB 259 million mainly due to revenue of GHECO-One decreased according to planned maintenance in Q1/2021 and unplanned outage in Q2 and Q3 of 2021 resulting in lower AP and EP. However, the revenue of GIPP increased as a result of higher EP following to higher electricity dispatch to EGAT and the revenue of HHPC slightly increased corresponding to higher electricity dispatch.

Cost of Sales of Goods and Rendering of Services: IPP

Key cost drivers	Q4/20	Q3/21	Q4/21	Change +/- (-)		2020	2021	Change +/- (-)
				YoY	QoQ			
Natural Gas								
Natural gas consumption								
GPSC's natural gas consumption ('000 MMBTU)	2,185	473	130	(94%)	(73%)	6,074	6,775	12%
GLOW's natural gas consumption ('000 MMBTU)	9.6	311	1,102	n/a	254%	15.7	4,977	n/a
Coal								
Coal consumption (Ton JPU)	491,477	361,030	503,052	2%	39%	1,951,364	1,562,000	(20%)
Average coal cost (excluding freight) (USD/Ton JPU)	79.2	89.6	95.7	21%	7%	85.5	87.5	2%

Quarterly Comparison of IPP's Cost of Sales of Goods and Rendering of Services

yoy Q4/2021 VS Q4/2020

Cost of sales of goods and rendering of services of IPP business in Q4/2021 was THB 5,840 million, increased by THB 3,179 million or 119% yoy mainly due to the following:

- **Cost of natural gas** decreased by THB 301 million mainly due to using diesel as primary fuel instead of natural gas of Sriracha Power Plant and GIPP.
- **Cost of coal** increased by THB 109 million due to higher average coal price of 21% despite higher consumption of coal by 2%.
- **Other raw materials** increased THB 3,385 million from higher cost of diesel of Sriracha power plant and GIPP which used as primary fuel instead of natural gas according to energy dispatch instructed by EGAT.

qoq Q4/2021 VS Q3/2021

Cost of sales of goods and rendering of services of IPP business in Q4/2021 was THB 5,840 million, increased by THB 3,594 million or 160% qoq mainly due to the following:

- **Cost of natural gas** decreased by THB 91 million mainly due to using diesel as primary fuel instead of natural gas of Sriracha Power Plant and GIPP.
- **Cost of coal** increased by THB 334 million corresponding to GHECO-One's coal consumption increased by 39% following to higher electricity sales, as well as higher average coal price of 7%.
- **Other raw materials** increased THB 3,291 million from higher cost of diesel of Sriracha power plant and GIPP which used as primary fuel instead of natural gas according to energy dispatch instructed by EGAT.

Yearly Comparison of IPP's Cost of Sales of Goods and Rendering of Services (2021 VS 2020)

Cost of sales of goods and rendering of services of IPP business in 2021 was THB 13,406 million, increased by THB 2,830 million or 27% from the previous year primarily due to cost of others raw material increased by THB 3,600 million from higher cost of diesel of Sriracha power plant and GIPP which used as primary fuel according to energy dispatch instructed by EGAT. In addition, cost of natural gas increased by THB 885 million from higher electricity sales volume of Sriracha power plant and GIPP corresponding to energy dispatch to EGAT. However, cost of coal decreased by THB 1,534 million as result of planned maintenance of GHECO-One in Q1/2021 and unplanned outage in Q2 and Q3 of 2021 resulting lower coal consumption.

Gross Profit: IPP

Gross profit of IPP business in 2021 was THB 1,423 million, increased by THB 307 million or 27% from 2020 mainly due to the following:

- **Gross profit of IPP business of GLOW** increased mainly from higher AP according to the USD-linked portion of the AP increased due to THB depreciation as well as higher availability rate of GHECO-One and GIPP. Besides, gross profit of HHPC increased according to higher electricity sales volume.
- **Gross profit of Sriracha Power Plant** increased mainly from higher EP corresponding to higher dispatch instruction by EGAT and operational management by using diesel as primary fuel instead of natural gas resulting in higher margin from electricity sales.

When comparing to Q3/2021, gross profit of IPP business increased by THB 334 million or 31% primarily due to the following:

- **Gross profit of IPP business of GLOW** increased due to higher AP of GHECO-One as a result of unplanned outage 28 days in Q3/2021 as well as the USD-linked portion of the AP increased due to THB depreciation resulting in higher AP of GIPP. However, gross profit of HHPC decreased according to lower electricity sales volume as seasonality.
- **Gross profit of Sriracha Power Plant** decreased due to the AP decreased from lower availability rate due to planned maintenance in December 2021.

Gross profit of IPP business in 2021 was THB 4,889 million, decreased by THB 469 million or 7% from 2020 mainly from GHECO-One's gross profit decreased due to planned maintenance in Q1/2021 and unplanned outage in Q2 and Q3 of 2021 resulting in lower AP and EP.

Operating Results: Small Power Producer (SPP)

Operating results (unit: THB million)	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
				YoY	QoQ			YoY
Revenue								
Revenue from electricity sales	9,057	10,482	10,051	11%	(4%)	38,100	39,975	5%
Revenue from steam sales	3,312	3,789	4,311	30%	14%	13,906	15,032	8%
Other income	214	214	215	0.3%	0.3%	788	882	12%
Total revenue	12,583	14,485	14,577	16%	1%	52,794	55,889	6%
Cost of raw materials								
Natural gas	6,586	8,527	9,523	45%	12%	29,007	32,395	12%
Coal	613	1,017	872	42%	(14%)	2,841	3,250	14%
Others	208	79	384	84%	384%	782	897	15%
Total cost of raw materials	7,407	9,623	10,778	46%	12%	32,630	36,542	12%
Maintenance cost	683	432	519	(24%)	20%	1,785	1,956	10%
Others (excluding depreciation and amortization)	785	709	842	7%	19%	3,016	2,968	(2%)
Total cost of sales of goods and rendering of services	8,876	10,764	12,140	37%	13%	37,432	41,466	11%
Gross profit	3,707	3,721	2,437	(34%)	(35%)	15,362	14,423	(6%)
Gross profit margin	29%	26%	17%	(12%)	(9%)	29%	26%	(3%)

Revenue: SPP

Key revenue drivers	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
				YoY	QoQ			YoY
Electricity sales volume								
GPSC's electricity sales volume (GWh)	1,139	1,165	1,127	(1%)	(3%)	4,361	4,574	5%
GLOW's electricity sales volume (GWh)	2,095	2,275	2,044	(2%)	(10%)	8,587	8,739	2%
Electricity average selling price								
Weighted average selling price (THB/kWh)	2.80	3.05	3.17	13%	4%	2.94	3.00	2%
Steam sales volume								
GPSC's steam sales volume ('000 tons)	1,758	1,836	1,741	(1%)	(5%)	6,659	7,025	5%
GLOW's steam sales volume ('000 tons)	1,981	2,030	2,000	1%	(1%)	7,212	8,065	12%
Steam average selling price								
Weighted average selling price (THB/ton)	886	980	1,153	30%	18%	1,003	996	(0.7%)

Quarterly Comparison of SPP's Revenue

yoy Q4/2021 VS Q4/2020

Revenue from SPP business in Q4/2021 was THB 14,577 million, increased by THB 1,994 million or 16% yoy mainly due to the following:

- **Revenue from SPP business of GPSC** increased by THB 1,340 million mainly from an increase of revenue of Rayong Central Utility Plant (CUP) by THB 796 million due to higher electricity and steam selling price while electricity and steam sales volume to industrial customers and EGAT were nearly the same level as the previous quarter. In addition, the revenue of IRPC-CP increased by THB 544 million according to higher steam sales volume and selling price to industrial customers.
- **Revenue from SPP business of GLOW** increased by THB 654 million mainly from electricity and steam selling price increased although electricity and steam sales volume decreased slightly.

qoq Q4/2021 VS Q3/2021

Revenue from SPP business in Q4/2021 was THB 14,577 million, increased by THB 92 million or 1% qoq mainly due to the following:

- **Revenue from SPP business of GPSC** increased by THB 242 million mainly from revenue of IRPC-CP increased by THB 356 million from higher electricity and steam sales volume to industrial customers while electricity sales to EGAT decreased slightly. However, revenue of Rayong Central Utility Plant (CUP) decreased by THB 113 million as a result of lower electricity and steam sales volume to industrial customers.
- **Revenue from SPP business of GLOW** decreased by THB 150 million mainly due to electricity sales volume to EGAT and electricity and steam sales volume to industrial customers decreased.

Yearly Comparison of SPP's Revenue (2021 VS 2020)

Revenue from SPP business in 2021 was THB 55,889 million, increased by THB 3,095 million or 6% from the previous year primarily due higher total electricity and steam sales volume increased as well as electricity selling price increased by 2%.

Cost of Sales of Goods and Rendering of Services: SPP

Key cost drivers	Q4/20	Q3/21	Q4/21	change +/-		2020	2021	Change +/-
				YoY	QoQ			
Natural Gas								
Natural gas consumption								
GPSC's natural gas consumption ('000 MMBTU)	13,217	13,562	12,907	(2%)	(5%)	50,590	52,857	4%
GLOW's natural gas consumption ('000 MMBTU)	16,604	17,851	15,879	(4%)	(11%)	64,403	69,421	8%
Average natural gas price								
Average natural gas price (THB/MMBTU)	221	271	331	50%	22%	252	265	5%
Coal								
GLOW's coal consumption (Ton JPU)	261,037	284,752	258,630	(1%)	(9%)	1,100,646	1,047,416	(5%)
Average coal cost (excluding freight) (USD/Ton JPU)	67.8	105.7	144.2	113%	36%	73.4	102.5	40%

Quarterly Comparison of SPP's Cost of Sales of Goods and Rendering of Services

yoy Q4/2021 VS Q4/2020

Cost of sales of goods and rendering of services of SPP business in Q4/2021 was THB 12,140 million, increased by THB 3,264 million or 37% yoy mainly due to the following:

- **Cost of natural gas** increased by THB 2,937 million (THB 1,756 million increase from GLOW SPP and THB 1,181 million increase from GPSC SPP) mainly from higher average natural gas price by 50% despite natural gas consumption decreased slightly.
- **Cost of coal** increased by THB 259 million mainly due to average coal price increased by 113%.

qoq Q4/2021 VS Q3/2021

Cost of sales of goods and rendering of services of SPP business in Q4/2021 was THB 12,140 million, increased by THB 1,376 million or 13% qoq mainly due to the following:

- **Cost of natural gas** increased by THB 996 million (THB 502 million increase from GLOW SPP and THB 494 million increase from GPSC SPP) mainly from higher natural gas price by 22% while natural gas consumption decreased by 8% corresponding to operational management of existing capacity to meet industrial customers' demand during Glow Energy Phase 5 downtime.
- **Cost of coal** decreased by THB 146 million from 9% lower coal consumption while 36% higher average coal price.

Yearly Comparison of SPP's Costs of Sales of Goods and Rendering of Services (2021 VS 2020)

Cost of sales of goods and rendering of services of SPP business in 2021 was THB 41,466 million, increased by 4,034 million or 11% primarily due to higher natural gas price corresponding to higher natural gas consumption which average natural gas price increased by 5%. In addition, coal price increased by 40% while coal consumption decreased by 5%.

Gross Profit: SPP

Gross profit of SPP business in Q4/2021 was THB 2,437 million, decreased by THB 1,270 million or 34% from Q4/2020 due to higher natural gas and coal price as well as an unplanned outage of Glow Energy phase 5 resulting in lower margin from electricity and steam sales to industrial customers together with electricity sales volume decreased slightly.

When comparing to gross profit of Q3/2021, gross profit of SPP business decreased by THB 1,284 million or 35% mainly due to natural gas and coal price increased as well as electricity and steam sales volume to industrial customers decreased due to there was customers' planned maintenance in Q4/2021.

Gross profit of SPP business in 2021 was THB 14,423 million, decreased by THB 939 million of 6% from 2020 mainly due to higher natural gas and coal price although total electricity and steam sales volume increased.

Operating Results: Very Small Power Producer (VSPP) and Others

Operating results (unit: THB million)	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
				YoY	QoQ			
Revenue								
Revenue from electricity sales	124	129	103	(17%)	(20%)	615	418	(32%)
Revenue from chilled water sales	43	48	43	1%	(9%)	193	182	(6%)
Other income	5	1	33	564%	3,287%	44	89	102%
Total revenue	172	177	179	4%	1%	851	689	(19%)
Cost of raw materials								
Natural gas and others	33	43	28	(14%)	(33%)	147	175	19%
Total cost of raw materials	33	43	28	(14%)	(33%)	147	175	19%
Maintenance cost	18	8	27	48%	253%	45	60	33%
Others (excluding depreciation and amortization)	13	15	64	389%	335%	49	100	104%
Total cost of sales of goods and rendering of services	64	65	119	85%	83%	241	334	39%
Gross profit	108	112	61	(44%)	(46%)	610	355	(42%)
Gross profit margin	63%	63%	34%	(29%)	(29%)	72%	51%	(28%)

Note: VSPP and others include Combine Heat and Power Producing Company Limited (CHPP), Ichinoseki Solar Power 1 GK (ISP1), and Refuse Derived Fuel Plant (RDF)

Revenue: VSPP and Others

Key revenue drivers	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
				YoY	QoQ			
Electricity								
Sales volume (GWh)	20	15	13	(33%)	(8%)	82	47	(43%)
Average selling price (THB/kWh)	6.06	8.86	7.70	27%	(13%)	8.00	8.93	12%
Chilled water								
Sales volume ('000 RT)	5,884	6,807	5,651	(4%)	(17%)	27,694	25,228	(9%)
Average selling price (THB/RT)	7.31	7.03	7.70	5%	9%	6.97	7.21	3%

Quarterly Comparison of VSPP's and Others' Revenue

yoy Q4/2021 VS Q4/2020

Revenue from VSPP and other businesses in Q4/2021 was THB 179 million, increased by THB 7 million or 4% yoy mainly due to the following:

- **Revenue from electricity sales** decreased by THB 21 million mainly due to the Company sold 50% shares of GRP to a subsidiary of PTT and the transaction has been completed on January 4, 2021, As a results, GRP's performance has been recorded in shares of profit of associates instead of recognized in revenue from electricity sales.
- **Other income** increased by THB 28 million primarily due to an increase in revenue from EPC services and solar cells of Combine Heat and Power Producing Company Limited (CHPP).

qoq Q4/2021 VS Q3/2021

Revenue from VSPP and other businesses in Q4/2021 was THB 179 million, increased by THB 2 million or 1% qoq mainly due to the following:

- **Revenue from electricity sales** decreased by THB 26 million mainly from Ichinoseki Solar Power 1 GK (ISP1) due to lower electricity production and sales volume from to lower solar radiation intensity as seasonality while revenue from RDF Power Plant increased.
- **Other income** increased by THB 32 million due to the higher recognized revenue from EPC services and solar cells of Combine Heat and Power Producing Company Limited (CHPP).

Yearly Comparison of VSPP's Revenue (2021 VS 2020)

Revenue of VSPP and other businesses in 2021 was THB 689 million, decreased by THB 162 million or 19% from 2020, mainly due to the Company sold 50% shares of GRP to a subsidiary of PTT and the transaction has been completed on 4 January 2021, As a results, GRP's performance has been recorded in shares of profit of associates instead of recognized in revenue from electricity sales together with lower revenue from Ichinoseki Solar Power 1 GK (ISP1). In addition, revenue from chilled water of CHPP decreased following to lower sales volume.

Cost of Sales of Goods and Rendering of Services: VSPP and Others

Quarterly Comparison of VSPP's Cost of Sales of Goods and Rendering of Services

yoy

Q4/2021 VS Q4/2020

Cost of sales of goods and rendering of services of VSPP and other businesses in Q4/2021 was THB 119 million, increased by 55 million or 85% yoy mainly due to the following:

- **Other costs** increased mainly from RDF power plant after commenced the Commercial Operation Date (COD) on 28 May 2021.
- **Maintenance cost** increased mainly from Ichinoseki Solar Power 1 GK (ISP1) due to there was maintenance work on some parts of the project.

qoq

Q4/2021 VS Q3/2021

Cost of sales of goods and rendering of services of VSPP and other businesses in Q4/2021 was THB 119 million, increased by 54 million or 83% qoq mainly due to the following:

- **Other costs** increased mainly from RDF power plant according to electricity sales volume.
- **Maintenance cost** increased mainly from Ichinoseki Solar Power 1 GK (ISP1) due to there was maintenance work on some parts of the project.

Yearly Comparison of VSPP's Cost of Sales of Goods and Rendering of Services (2021 VS 2020)

Cost of sales of goods and rendering of services of VSPP and other businesses in 2021 was THB 334 million, increased by THB 93 million or 39% from 2020 mainly due to higher other costs from RDF power plant since the COD on 28 May 2021 and higher maintenance cost from Ichinoseki Solar Power 1 GK (ISP1) due to there was maintenance work on some project.

Gross Profit: VSPP and Others

Gross profit of VSPP and other businesses in Q4/2021 was THB 61 million, decreased by THB 47 million or 44% from Q4/2020 due to the Company sold 50% shares of GRP to a subsidiary of PTT and the transaction has been completed on January 4, 2021. As a results, GRP's performance has been recorded in shares of profit of associates instead of recognized in revenue from electricity sales

When comparing with Q3/2021, gross profit decreased by THB 51 million or 46% mainly from lower revenue from electricity sales of Ichinoseki Solar Power 1 GK (ISP1) due to lower electricity production and sales volume as a result of lower solar radiation intensity than the previous quarter as seasonality as well as higher maintenance cost due to there was maintenance work on some project. However, revenue from EPC services and solar cells of Combine Heat and Power Producing Company Limited (CHPP) increased.

Gross profit of VSPP and other businesses in 2021 was THB 355 million, decreased by THB 255 million or 42% from 2020 mainly due to the recognition of GRP's performance in shares of profit of associates instead of recognized in revenue from electricity sales since January 4, 2021.

Other Expenses

Selling and administrative expenses and Other expenses (unit: THB million)	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
				YoY	QoQ			
Selling and administrative expenses	528	431	582	10%	35%	1,790	1,963	10%
Depreciation and amortization	2,046	2,205	2,200	7%	(0.2%)	8,287	8,630	4%
Finance costs	965	998	901	(7%)	(10%)	4,024	3,860	(4%)
Income tax expense	141	295	97	(31%)	(67%)	992	1,192	20%
Net foreign exchange loss (gain)	(12)	95	(68)	447%	172%	1	93	9,086%
Total other expenses	3,668	4,023	3,712	1%	(8%)	15,094	15,739	4%

Quarterly Comparison of Other Expenses

yoy Q4/2021 VS Q4/2020

Other expenses was THB 3,712 million in Q4/2021, increased slightly by THB 44 million or 1% yoy mainly from the following:

- **Selling and administrative expenses** was THB 582 million in Q4/2021, increased by THB 54 million or 10% from Q4/2020 mainly due to general expenses.
- **Depreciation and amortization** was THB 2,200 million in Q4/2021, increased by THB 153 million or 7% from Q4/2020.
- **Finance costs** was THB 901 million in Q4/2021, decreased by THB 64 million or 7% from Q4/2020.
- **Income tax expenses** was THB 97 million in Q4/2021, decreased by THB 44 million or 31% from Q4/2020.
- **Net foreign exchange gain/loss:** net gain of THB 68 million was recorded in Q4/2021, increased by THB 56 million or 447% from Q4/2020. This was due to record of
 - i. Increase of unrealized FX gain of THB 110 million;
 - ii. Increase in loss from fair value valuation of derivatives instruments of THB 32 million; and
 - iii. Increase in realized FX loss of THB 22 million.

qoq Q4/2021 VS Q3/2021

Other expenses was THB 3,712 million in Q4/2021, decreased by THB 311 million or 8% qoq mainly from the following:

- **Selling and administrative expenses** was THB 582 million in Q4/2021, increased by THB 151 million or 35% from Q3/2021 mainly due to investment and IT-related advisory fee.
- **Depreciation and amortization** was THB 2,200 million in Q4/2021, decreased by THB 5 million or 0.2% from Q3/2021.
- **Finance costs** was THB 901 million in Q4/2021, decreased by THB 97 million or 10% from Q3/2021.
- **Income tax expenses** was THB 97 million in Q4/2021, decreased by THB 198 million or 67% from Q3/2021.
- **Net foreign exchange gain/loss:** net gain of THB 68 million was recorded in Q4/2021, increased by THB 163 or 172% million from Q3/2021. This was due to record of
 - i. Increase in unrealized FX gain of THB 109 million;
 - ii. Decrease in loss from fair value valuation of derivatives instruments of THB 19 million; and
 - iii. Decrease in realized FX loss of THB 35 million.

Shares of Profit of Associates and Joint Ventures

Shares of Profit (Loss) of Associates and Joint Ventures (unit: THB million)	Share-holding %	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
					YoY	QoQ			
Independent Power Producer (IPP)									
Xayaburi Power Company Limited (XPCL)	25%	90	592	37	(59%)	(94%)	242	944	290%
Small Power Producer (SPP)									
Bangpa-in Cogeneration Company Limited (BIC)	25%	30	34	23	(22%)	(31%)	147	123	(16%)
Nava Nakorn Electricity Generating Company Limited (NNEG)	30%	24	31	4	(82%)	(86%)	94	116	24%
Very Small Power Plant (VSPP) and Others									
Eastern Seaboard Clean Energy Company Limited (ESCE)	33%	9	7	6	(34%)	(20%)	40	27	(32%)
Nam Lik 1 Power Company Limited (NL1PC)	40%	19	18	21	12%	19%	69	67	(3%)
Thai Solar Renewable Company Limited (TSR)	40%	72	79	65	(9%)	(17%)	332	335	1%
Avaada Energy Private Limited (AEPL)	42%	n/a	(31)	(25)	n/a	19%	0	(57)	n/a
Global Renewable Power Company Limited (GRP)	50%	n/a	(39)	(11)	n/a	72%	0	(20)	n/a
Total shares of profit (loss) of associates and joint ventures		244	690	120	(51%)	(83%)	924	1,536	66%

Shares of profit of associates and joint ventures in 2021 was THB 1,536 million increased by THB 612 million or 66% from 2020.

Shares of profit of associates and joint ventures in Q4/2021 was THB 120 million, decreased by THB 124 million or 51% from Q4/2020 and decreased by THB 569 million or 83% from Q3/2021.

Xayaburi Power Co., Ltd. (XPCL)



Share of profit from XPCL decreased by THB 53 million compared to Q4/2020 due to lower water level resulting in lower electricity generation, and decreased THB 555 million from Q3/2021 due to seasonal lower water level.

Bangpa-in Cogeneration Co., Ltd. (BIC)



Share of profit from BIC decreased by THB 7 million from Q4/2020 mainly due to higher natural gas prices, and THB 11 million from Q3/2021 due to lower electricity demand from EGAT.

Thai Solar Renewable Co., Ltd. (TSR)



Share of profit from TSR decreased by THB 7 million from Q4/2020 and THB 14 million from Q3/2020, mainly due to impairment of assets from solar panel improvement in the previous quarter.

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



Share of profit from NNEG slightly decreased by THB 20 million from Q4/2020, and THB 27 million from Q3/2021 due to lower electricity and steam demands from industrial customers.

Global Renewable Power Co., Ltd. (GRP)



Share of profit from GRP increased by THB 28 million from Q3/2021 due to higher solar radiation, resulting in higher generation of electricity.

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



Share of profit from NL1PC slightly increased by THB 2 million from Q4/2020 mainly due to the depreciation of LAK and increased by THB 3 million from Q3/2021 mainly due to lower expenses in Q4/2021.

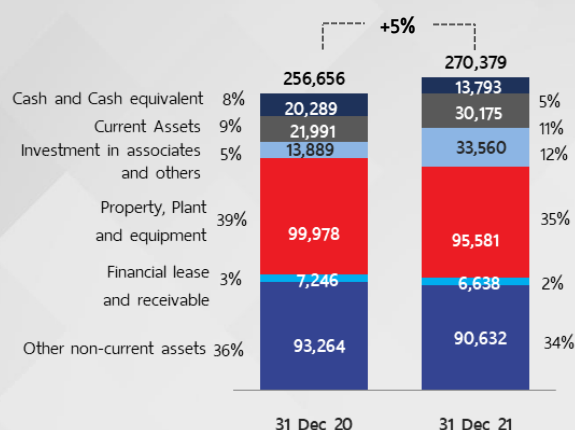
Avaada Energy Private Limited (AEPL)



Share of profit from AEPL increased by THB 6 million from Q3/2021 due to profit recognition of projects started commercial operation during Q4/2021, however high finance costs and extreme rainfall in November impacted this quarter financial performance.

Summary of Financial Position of the Company and its Subsidiaries

Total Assets (THB million, %)

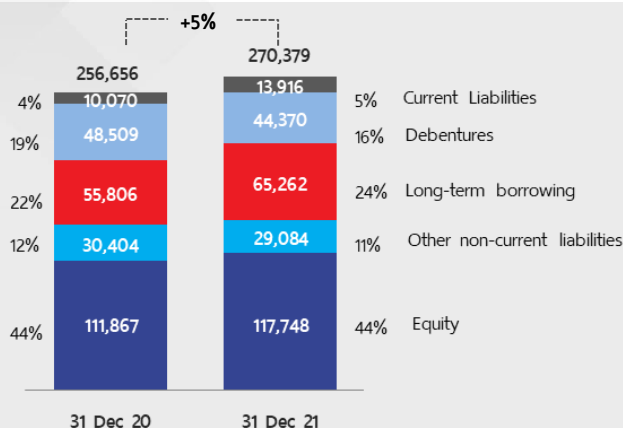


Total Assets

As of 31 December 2021, total assets of the Company and its subsidiaries was THB 270,379 million, increased by THB 13,723 million or 5% from 31 December 2020 which was primarily as a result of the following:

- **Cash and cash equivalent** decreased by THB 6,496 million or 32%
- **Investments in associates and others** increased by THB 19,672 million or 142% mainly due to recognized investment in Avaada Energy Private Limited (AEPL) in India, Global Renewable Power Company Limited (GRP), and Anhui Axxiva New Energy Technology Company Limited (Axxiva) in China
- **Property, Plant and equipment** decreased by THB 4,397 million or 4%
- **Other assets** increased by THB 4,944 million or 4% due to trade account receivable increased by THB 4,357 million or 48%, financial asset measured at amortized cost increased by THB 1,325 million or 58%, while intangible assets decreased THB 2,457 million or 6%.

Total Liabilities and Equity (THB million, %)



Total Liabilities

As of 31 December 2021, total liabilities of the Company and its subsidiaries was at THB 152,632 million, increased by THB 7,843 million or 5% from 31 December 2020 which was primarily as a result of the following:

- **Current liabilities** increased by THB 3,846 million or 38% mainly from trade account payable increased by THB 2,456 million, while other payables decreased THB 616 million
- **Long-term borrowings and debentures** increased by THB 5,317 million or 5% mainly from long-term loans with financial institutions and related parties increased by THB 9,456 million and debentures decreased by THB 4,138 million
- **Other liabilities** decreased by THB 1,320 million or 4%.

Total Equity

As of 31 December 2021, total shareholders' equity of the Company and its subsidiaries was at THB 117,748 million, increased by THB 5,880 million or 5% from 31 December 2020 due to net profit for the period increased by THB 7,840 million, dividend payment decreased by THB 4,534 million and other comprehensive income increased by THB 2,574 million.

Total Interest-Bearing Debt (THB million)



As of 31 December 2021, the Company and its subsidiaries has total interest-bearing debt (excluding lease liabilities) of THB 109,632 million which comprised of current liabilities totaling THB 9,121 million or 8% and non-current liabilities totaling THB 100,511 million or 92%.

Cash Flow (unit: THB million)	2021
Net cash flow from operating activities	16,109
Net cash used in investing activities	(19,610)
Net cash flow used in financing activities	(2,724)
Net increase (decrease) in cash and cash equivalent (before exchange rate effect)	(6,225)
Effect of exchange rate to cash and cash equivalent	59
Cash related to assets held-for-sale	(331)
Net increase (decrease) in cash and cash equivalents	(6,496)
Cash and cash equivalents at the beginning of the period	20,289
Cash and cash equivalents at the end of the period	13,793

At the end of 2021, the Company and its subsidiaries had a net decrease of cash and cash equivalent of THB 6,496 million from the end of 2020 which was primarily as a result of the following:

Cash Flow from Operating Activities

At the end of 2021, the Company and its subsidiaries had net cash inflow from operating activities of THB 16,109 million, which was from cash received from operating activities of THB 17,744 million deducted by corporate income tax payment of THB 1,635 million.

Cash Flow from Financing Activities

At the end of 2021, the Company and its subsidiaries had net cash flow used in financing activities of THB 2,724 million, which was from:

- i. Utilization of long-term loans from financial institutions and related parties of THB 42,520 million;
- ii. Long-term loan repayment to financial institutions of THB 23,208 million;
- iii. Interest and fees paid to financial institutions of THB 4,037 million;
- iv. Dividend paid of THB 4,719 million;
- v. Debenture repayment of THB 13,055 million;
- vi. Cash paid for liabilities under lease agreements of THB 208 million; and
- vii. Cash paid for other financing activities of THB 17 million.

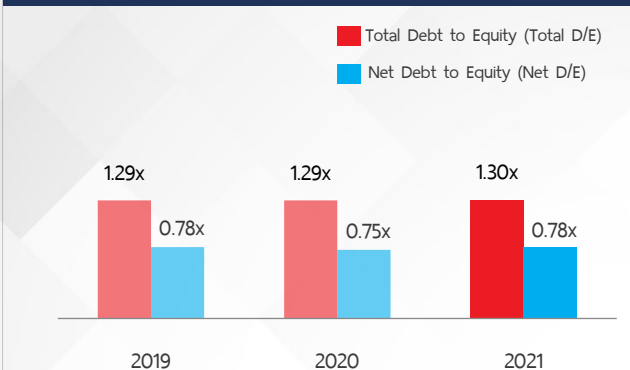
Cash Flow from Investing Activities

At the end of 2021, the Company and its subsidiaries had net cash used in investment activities of THB 19,610 million which was:

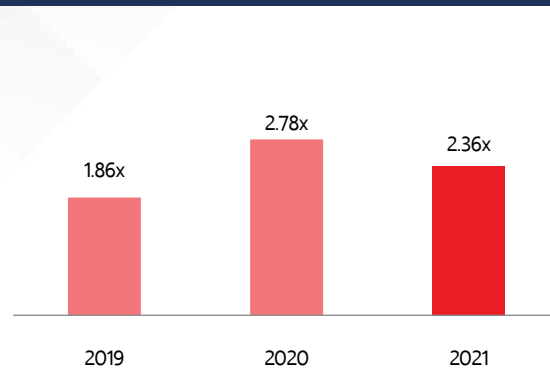
- i. CAPEX of THB 4,440 million;
- ii. Cash paid on financial assets of THB 1,116 million;
- iii. Cash paid on investment of THB 15,274 million;
- iv. Dividend received and others of THB 998 million; and
- v. Other investing activities of THB 224 million.

Key Financial Ratios

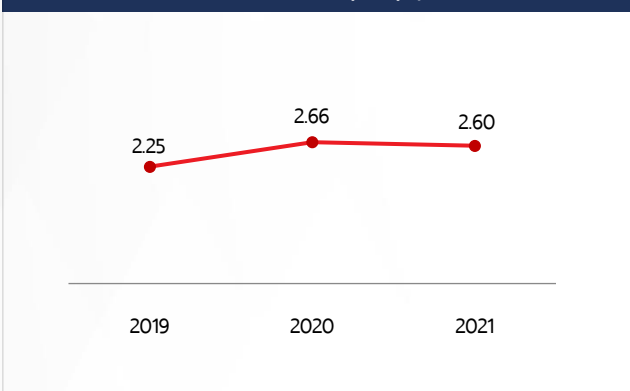
TOTAL DEBT TO EQUITY AND NET DEBT TO EQUITY RATIO | times



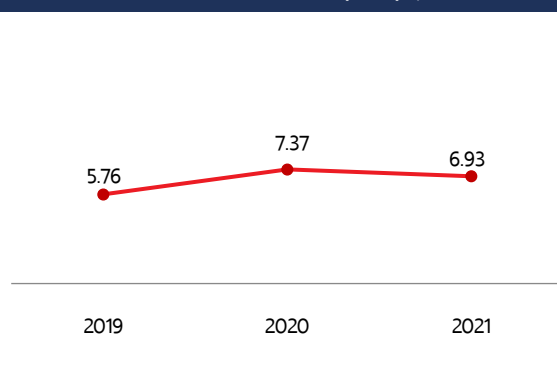
INTEREST COVERAGE RATIO | times



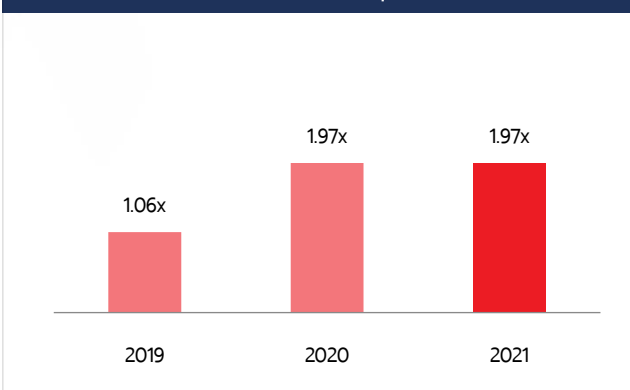
EARNING PER SHARE (EPS) | THB/Share



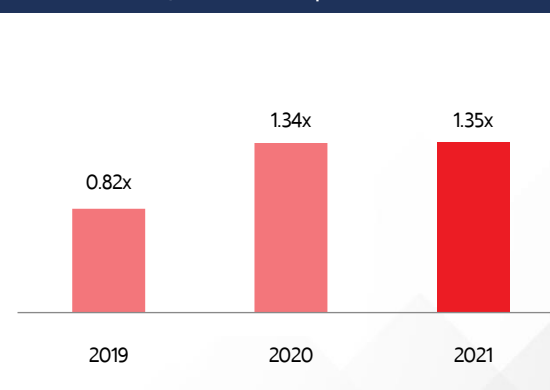
RETURN ON EQUITY (ROE) | %



CURRENT RATIO | times



QUICK RATIO | times



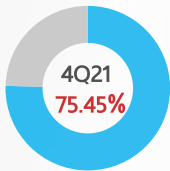
Total Debt to Equity Ratio	Total debt / Equity
Net Debt to Equity Ratio	(Interest-bearing debt - (cash and cash equivalent + restricted cash + temporary investment)) / Equity
Interest Coverage Ratio	Earnings before Interest and Taxes (EBIT) / Interest expenses
Earning per Share	Net profit for the Company / Weighted average number of common shares
Current Ratio	Current assets / Current liabilities
Quick Ratio	(Cash and cash equivalent + restricted cash + temporary investment + account receivable) / Current liabilities)

Update of Projects Under Construction



SCOD | 2023¹

Energy Recovery Unit (ERU)



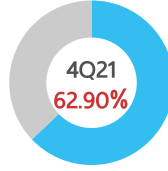
Project updates:
Engineering design work almost done. Procurement of steam turbine and electricity generator 1 and 2 are done, while the procurement of boiler 1, 2, and 3 including condenser of SNOX system are in progress. The construction of foundation and equipment work for Boilers, Pitch Solidification, Electrostatic precipitator, and Cooling Tower are in progress. Overall, the project has reached 75.45%.

Note: 1. Commercial Operation Date (COD) as planned; however, the COD may be impacted by the COVID-19 pandemic in which the Company will notify once this matter is concluded.



SCOD | Q4/2022

SPP Replacement - Stage 1 | Glow Energy Phase 2



Project updates:
The engineering design work, procurement and construction progress has reached 62.9% and the project is on the process of installing machine, notably HRSG, Piperack, Gas Metering Station and foundation work for Gas Turbine which are on schedule.

Projects	Electricity Capacity (MW)	Steam Production Capacity (t/h)	Contracted PPA with EGAT (MW)
SPP Replacement Project Stage 1			
• Glow Energy Phase 2	192	300	60 (2 PPAs)



SCOD | 2021-2023

Avaada Energy Private Limited (AEPL)



- Total contracted capacity of 4,608 MW
- GPSC holds 41.6% of total AEPL shares

Project	Electricity Capacity (MW)	COD
Operating (23 projects)	2,205	As of Q4/2021
Under construction (13 projects)	2,403	2022 - 2023



SCOD | Q1/2024

Offshore Wind Power Plant in Taiwan Changfang Project and Xidao Project (CFXD)

Project updates

The project is under construction and expected to COD in 2024

Power Plants of the Company, its subsidiaries, associates and joint ventures

Power plant	Fuel Type	Location	shareholding	Installed Power capacity (MW)	Equity Power capacity (MW)	Equity in operation (MW)	Steam equity capacity (t/h)	Customers	Commercial Operation Date (COD)
Independent Power Producer (IPP)									
Sriracha	Natural gas	Sriracha	GPSC (100%)	700	700	700	-	EGAT	2000
GIPP	Natural gas	WHA Chonburi Industrial Estate 1	GLOW (95%)	713	677	677	-	EGAT	2003
Houay Ho	Hydro	Attapeu Province, Lao PDR.	GLOW (67%)	152	102	102	-	EGAT / EDL	1999
GHECO-One	Coal	Map Ta Phut Industrial Estate	GLOW (65%)	660	429	429	-	EGAT	2012
XPCL	Hydro	Laos	GPSC (25%)	1,285	321	321	-	EGAT / EDL	2019
RPCL	Natural gas	Ratchaburi	GPSC (15%)	1,400	210	210	-	EGAT	2008
Total capacity of IPP				4,910	2,439	2,439			
Small Power Producer (SPP)									
CUP-1	Natural gas	WHA eastern industrial estate	GPSC (100%)	226	226	226	890	EGAT / IU	2006
CUP-2	Natural gas	Rayong industrial land	GPSC (100%)	113	113	113	170	EGAT / IU	2008
CUP-3	Natural gas	WHA eastern industrial estate	GPSC (100%)	-	-	-	280	IU	2009
Rayong Expansion (CUP-3)	Natural gas	WHA eastern industrial estate	GPSC (100%)	15	15	15	-	IU	2019
CUP-4	Natural gas	Asia Industrial Estate	GPSC (100%)	49	49	49	140	IU	2019
GLOW Energy Phase 1	Natural gas	Map ta phut Industrial Estate	GLOW (100%)	-	-	-	250	IU	1994
GLOW Energy Phase 2	Natural gas	Map ta phut Industrial Estate	GLOW (100%)	281	281	281	300	EGAT / IU	1996
GLOW Energy Phase 4	Natural gas	Map ta phut Industrial Estate	GLOW (100%)	77	77	77	137	EGAT / IU	2005
GLOW Energy Phase 5	Natural gas	Map ta phut Industrial Estate	GLOW (100%)	328	328	328	160	EGAT / IU	2011
GLOW SPP 2 / GLOW SPP 3	Natural gas and coal	Map ta phut Industrial Estate	GLOW (100%)	513	513	513	190	EGAT / IU	1999
GLOW SPP 11 Phase 1	Natural gas	Siam Eastern Industrial Park	GLOW (100%)	120	120	120	-	EGAT / IU	2000
GLOW SPP 11 Phase 3	Natural gas	Siam Eastern Industrial Park	GLOW (100%)	42	42	42	-	EGAT / IU	2006
GLOW SPP 11 Phase 2	Natural gas	Siam Eastern Industrial Park	GLOW (100%)	110	110	110	-	EGAT / IU	2012
GLOW Energy CFB 3	Coal	Map ta phut Industrial Estate	GLOW (100%)	85	85	85	79	-	2010

Power plants of the Company, its subsidiaries, associates and joint ventures (Cont.)

Power plant	Fuel Type	Location	Direct shareholding	Installed Power capacity (MW)	Equity Power capacity (MW)	Equity in operation (MW)	Steam equity capacity (t/h)	Customers	Commercial Operation Date (COD)
IRPC-CP Phase 1	Natural gas	IRPC industrial Zone	GPSC (51%)	45	23	23	86.7	EGAT / IU	2015
IRPC-CP Phase 2	Natural gas	IRPC industrial Zone	GPSC (51%)	195	99.4	99.4	66.3	EGAT/ IU	2017
NNEG	Natural gas	Nava Nakorn industrial promotion Zone	GPSC (30%)	125	38	38	9	EGAT/ IU	2016
NNEG Expansion	Natural gas	Nava Nakorn industrial promotion Zone	GPSC (30%)	60	18	-	3	IU	2020
BIC-1	Natural gas	Bangpa-in industrial estate	GPSC (25%)	117	29.25	29.25	5	EGAT / IU	2013
BIC-2	Natural gas	Bangpa-in industrial estate	GPSC (25%)	117	29.25	29.25	5	EGAT / IU	2017
Total capacity of SPP				2,618	2,196	2,196	2,771		
Very Small Power Producer (VSPP)									
Rayong Waste To Energy (WTE)	RDF	Rayong	GPSC (100%)	9.8	9.8	9.8	-	PEA	2021
Glow Energy Solar Plant	Solar	Asia Industrial Estate	GLOW (100%)	1.55	1.55	1.55	-	PEA	2012
CHPP	Natural gas	Government complex	GPSC (100%)	5	5	5	-	MEA / The Government Complex	2008
CHPP (Solar)	Solar	Chanthaburi	GPSC (100%)	5	5	5	-	PEA	2016
ISP1	Solar	Japan	GPSC (100%)	20.8	20.8	20.8	-	IU	2017
GRP (NPS,WXA,PPS)	Solar	Phichit, Suphan Buri, Lopburi, Khon Kaen	GPSC (50%)	39.5	19.75	19.75	-	PEA	2014-15
GRP1 (Sheng Yang)	Solar	Taiwan	GPSC (45%)	55.8	25.11	-	-	TaiPower	2016-21
AEPL (Solar Power Platform)	Solar	India	GPSC (41.6%)	4,608	1,917	917	-	Central and State Gov. and C&I	2018-23
TSR (SSE1)	Solar	Suphanburi and Kanjanaburi	GPSC (40%)	80	32	32	-	PEA	2013
NL1PC	Hydro	Laos	GPSC (40%)	65	26	26	-	EDL	2019
Chonburi Clean Energy (CCE)	Industrial waste	WHA Chonburi Industrial Estate 1	GLOW (33%)	8.6	2.87	2.87	-	PEA/ IU	2019
CFXD (Offshore wind farm) (Under closing process)	Wind	Taiwan	GPSC (25%)	595	149	-	-	TaiPower	2022-24
Private PPA (GPSC Group)	Solar	Various Areas	GPSC Gr. (100%)	23.40	23.40	2.99	-	IU	2018-22
Total capacity of VSPP				5,518	2,237	1,068	-		
Others									
ERU (Under construction)	Petroleum Pitch	Chonburi	GPSC (100%)	250	250	-	175	Thai Oil PLC	2023
Total capacity of Others				250	250	-	175		
Total				13,296	7,122	5,703	2,946		

Note: - Total committed equity capacity as of December 31, 2021.

- Equity capacity includes 100% stake in GLOW, CFXD, Private PPA and ERU

- On January 18, 2022, GPSC has raised the equity injection amounting USD 25 million in AEPL and shareholding proportion was increased to 42.93%

Fair Value Assessment of Net Assets from the Acquisition of GLOW

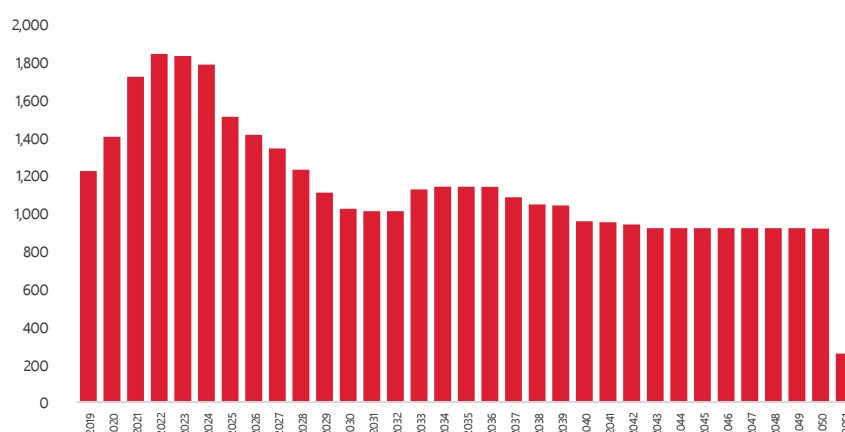
As accounting standard establishes that after any business acquisition, fair value of a company being acquired must be assessed by using comparable present market value. GPSC has evaluated fair value of GLOW by using the purchase price of 69.11% of GLOW's shares from ENGIE Global Developments B.V. on 14 March 2019 at THB 93,001 million. Details of fair value assessment of GLOW are as follows:

unit: THB million

Items	Book Value of GLOW	Fair Value of GLOW	Differential Value
Assets	107,655	155,500	47,845
Liabilities	(56,246)	(66,497)	(10,251)
Net Assets of GLOW at 14 March 2019	51,409	89,003	37,594
Non-Controlling interests at 30.89%		(32,092)	
Total Net Asset obtained GLOW at 69.11%		56,911	
Goodwill		36,090	
Proportion of acquisition cost 69.11%		93,001	

From the fair value stated in the table, the majority portion is derived from valuing the Power Purchase Agreements (PPA) totaling THB 37,594 million. The fair value recognition of net assets acquired from GLOW will be amortized yearly. The amortization of PPA will be completed based on the remaining period of the contracts categorized under intangible assets by using straight-line method with estimated useful life of 5 to 31 years.

Amortization of fair value assessed from net assets acquired from GLOW during 2019 - 2051 (computed based on 100% of GLOW shares)



Adjusted Net Income

Adjusted Net Income is net profit attributable to the Company excluding “fair value of intangible assets from the acquisition of GLOW” which was derived from the assessment of the fair value of net assets and allocation of business acquisition cost which were calculated backwards from 14 March 2019 (the first day that GPSC has recognize GLOW's performance in GPSC's consolidated financial statement). The Adjusted Net Income is a good representation of GPSC's earnings from normal operations. In Q4/2021, such amortization expense added up to THB 402 million.

Adjusted Net Income (unit: THB million)	Q4/20	Q3/21	Q4/21	Change +/-		2020	2021	Change +/-
				YoY	QoQ			YoY
Net Profit for the Company	1,458	1,875	1,168	(20%)	(38%)	7,508	7,319	(3%)
<u>Add back:</u> Amortization of assets acquired from the acquisition of GLOW	354	382	402	14%	5%	1,454	1,588	(9%)
Adjusted Net Income	1,813	2,256	1,571	(14%)	(31%)	8,962	8,907	(1%)



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