

**BCPG Public Company Limited
Management Discussion and Analysis
For 2022 Operating Results**

20th February 2023

A photograph of four wind turbines on a green hill under a cloudy sky. The turbines are white with three blades each. The foreground is a lush green field.

Empowering
Green Lifestyle

Executive Summary

Financial Highlight

Unit: THB million	4Q21	4Q22	Δ %	3Q22	Δ %	2021	2022	Δ %
Revenue from sales and rendering of service	1,231.7	1,266.7	2.8%	1,543.5	(17.9%)	4,668.8	5,405.2	15.8%
Share of profit of investment in associates*	152.2	13.8	(90.9%)	(17.1)	(180.5%)	600.0	129.7	(78.4%)
EBITDA*	1,099.4	935.2	(14.9%)	1,272.5	(26.5%)	4,252.8	4,434.5	4.3%
Net profit attributable to owners of parent	237.7	295.9	24.5%	640.9	(53.8%)	2,010.8	2,630.1	30.8%
Core profit*	582.6	374.5	(35.7%)	626.3	(40.2%)	2,284.3	2,066.3	(9.5%)

*Excluding gain/(loss) on FX and one-time items

Q4/2022: BCPG or the Group of Companies recorded core profit of THB 374.5 million, dropped by 35.7% YoY and 40.2% QoQ. These were resulted from the following factors.

-35.7% YoY

- (-) Lower revenue contribution from solar projects in Thailand due to the expiration of adder power plants, totaling 40 MW in July and October 2022. Yet, the impact of adder expiry was lessened by the higher Ft rate.
- (-) Lower revenue contribution from wind power plants in Thailand from the lower wind speed.
- (-) Lower revenue contribution from hydropower projects in Lao PDR as the plants being shut down in order in order to prepare for the transfer of electricity sales to EVN.
- (-) Lower share of profit from associates due to the absence of contribution from geothermal power plants in Indonesia.

-40.2% QoQ

- (-) Lower revenue contribution from wind power plants in Thailand as a result of lower wind speed.
- (-) Lower revenue contribution from hydropower projects in Lao PDR, "Nam San 3A" and "Nam San 3B" owing to the low season hydropower plants.
- (-) Lower revenue contribution from solar projects in Japan due to the lower irradiation.

For 2022, the Group of Companies recorded core profit of THB 2,066.3 million, decreased by 9.5% YoY. This was resulted from the following factors.

- (-) Lower revenue contribution from solar projects in Thailand due to the expiration of adder power plants; however, the impact of adder expiry was lessened by the higher Ft rate.
- (-) Lower revenue contribution from wind power plants in Thailand from the lower wind speed.
- (-) Lower share of profit from associates due to the absence of contribution from geothermal power plants in Indonesia and the lower share of profits from the wind power plant in the Philippines.

Key developments during 2022 until now

Announced an additional investment in Taiwan Solar farms

On 28 January 2022, the Group of Companies announced an additional development of solar power projects in Taiwan with an installed capacity of 357 MW, resulting in the Company's total development pipeline in Taiwan of 469 MW. The construction commencement of the projects is expected to start in 2023 and the commercial operation date is scheduled from 2023 to 2024.

This development of solar power projects is an excellent opportunity for the Group of Companies as the projects will have long-term-Feed-in-Tariffs power purchase agreement with Taiwan Power Company, the state-owned enterprise managing electricity production and distribution in Taiwan.

Disposed 33.3% shares of Star Energy Group Holdings Pte. Ltd. (SEGHPL)

On 3 March 2022, the Group of Companies disposed 33.3% shares of Star Energy Group Holdings Pte Ltd. (SEGHPL) to Springhead Holdings Pte Ltd. in the amount of USD 440.0 million (or an equivalent of THB 14,551.32 million based on exchange rate of THB 33.06/USD). The proceed from the divestment will be supported in new investment of renewable projects, increasing the Group of Companies' investment ability in the future.

SEGHPL operates business by investing in 3 geothermal power plants in Indonesia, including Wayang Windu power plant (installed capacity of 227 MW), Salak power plant (installed capacity of 377 MW and Darajat power plant (installed capacity of 216 MW)

Achieved the COD of 2 solar projects in Japan as target

On 29 March 2022 and on 15 April 2022, the Group of Companies successfully achieved the commercial operations of 2 solar power plant projects in Japan, Komagane and Yabuki.

The Komagane project is located in Nagano province and has a PPA of 25.0 MW at the Feed-In-Tariff rate of JPY 36.0 per kWh with Chubu Electricity Power Company for 20 years. Meanwhile, the Yabuki project is located in Fukushima province and has a PPA of 20.0 MW at the FIT rate of JPY 36.0 kWh with Tohoku Electricity Power Company for 20 years.

With the most recent commercial operations of these two projects, the Group of Companies' total operating capacity in Japan is 79.7 MW, with a developing capacity of 10 MW.

Achieved the COD of CMU phase 2 project at Chiang Mai University

On 1 April 2022, the solar rooftop project at Chiang Mai University under CMU Smart City started the COD of phase 2 with an installed capacity of 1.3 MW. The second phase is located in Suan Dok area, Chiang Mai province, which is being operated by Thai Digital Energy ("TDED"), a subsidiary of the Group of Companies with a 75% stake. The recent COD of the phase 2 project increases the operating contracted capacity to 9.8 MW.

Achieved in the settlement of EDL account receivables (EDL A/R) with Nam Tai Hydropower Investment

On 10 August 2022, the Group of Companies successfully settled the EDL A/R, an amount of USD 32 million, with 25% of the investment of Nam Tai Hydropower (Nam Tai) from Phongsubthavy Group Sole Co., Ltd. Through the investment in Nam Tai, the Company will obtain the 50% of Economic Right to develop and operate the 220kV transmission line system and substation from "Nam San 3A" and "Nam San 3B" project in Lao PDR to connect to Vietnam Electricity ("EVN"). The transmission line is expected to be completed within Q1/2023.

Successfully issued project bond for Yabuki Project in Japan

On 18 October 2022, Solar power plant project, named Yabuki entered into a secured long-term loan using for shareholder loan repayment to the Group of the Companies in the amount of JYP 10,900 million, fixed interest rates and the installment period for repayment within September 2039.

Yabuki project located in Fukushima province, Japan and has Power Purchase Agreement (PPA) of 20.0 MW at Feed-in-Tariff (FIT) 36 yen per kWh with Tohoku Electric Power Company for 20 years. Also, the investment is under TK investment with 100% proportion.

TRIS Rating increased credit rating from "A-" to "A" with a stable outlook

In October 2022, TRIS Rating has increased the company rating and the ratings on the company's outstanding senior unsecured debentures from "A-" to "A" with a "stable" outlook. The rating reflects BCPG's role to play in achieving Bangchak Group's strategy regarding the business expansion and Net Zero target, as well as the revenue reliability from power-generating assets, BCPG's well-diversified power portfolio, and the sufficient cashflow for investment to compensate the decrease in adder revenue in the future. This credit will also provide the opportunity to access new sources of funding for supporting the investment readiness in further.

Successfully signed an EPC contact with PowerChina International for the wind project "Monsoon"

On 6 December 2022, the Group of Companies entered into an engineering, procurement and construction (EPC) contact between PowerChina International Company Limited and Monsoon Wind Power Company Limited for the construction of the Monsoon onshore wind power project in Lao PDR.

Monsoon project is considered to be the largest wind power project in Asia and also the first project that will sales electricity cross-border via a 500 kV transmission line. The project is expected to complete the construction and be ready for commercial operation within 2025.

Achieved in the acquisition of Asia Link Terminal for an investment in oil terminal and seaport projects

On 30 December 2022, the Group of Companies has entered into the share sale and purchase agreement to purchase all shares in the Asia Link Terminal Company Limited (Asia Link) with the amount of not exceeding THB 9,000 million. Asia Link operates an oil terminal and seaport business, which is a public utility infrastructure platform supporting the energy sector and can generate recurring income, in accordance with the Group of Companies' business plan and investment direction. Furthermore, the acquired infrastructure can be extended to support other future business opportunities.

TRIS Rating placed CreditAlert “Negative” implication on company and issue rating

In January 2023, TRIS Rating placed the company rating and the ratings on senior unsecured debentures of “A” on CreditAlert with a “negative” implication. This follows the rating action on Bangchak Corporation PLC (BCP). The rating action follows BCP’s announcement on acquiring 65.99% of the share of ESSO (Thailand) PLC from ExxonMobil Aisa Holdings Pte. The CreditAlert placement indicates uncertainties surrounding the potential impact of the takeover on BCP’s creditworthiness. However, TRIS Rating will revise the CreditAlert again as the transaction reaches the close and TRIS Rating has a clearer picture of BCP’s post-acquisition credit profile.

Invested in 2 combined cycle gas turbine power plants in the USA

On 15 February 2023, the Group of Companies established a subsidiary, BCPG USD Inc. (“BCPG USA”) in the United States of America to invest in combined cycle gas turbine power plants with the initial registered capital not exceeding USD 5,000. The Group of Companies holds 100% of the issued shares. Subsequently, on 17 February 2023, BCPG USA has entered into a share Purchase and Sales Agreement with (1) AP Carroll County Holdings LLC (“APCCH”) and (2) AP South Field Holdings LLC (“APSFH”) with an aggregated investment value of approximately USD 115.0 million (equivalent to THB 3,972.22 million), to acquire a generation capacity of 150.98 MW, proportional to the Group of Companies’ interest.

The Group of Companies acquired 49.00% of the membership interests in AP-BCPG CCE Partners LLC (“AP-BCPG CCE”) from APCCH. AP-BCPG CCE indirectly owns a 17.76% membership interest in Carroll County Energy LLC (“CCE”), which operates a 700 MW combined cycle power generation plant project located in Carroll County, Ohio, United States (equivalent equity MW of 61 MW). The Group of Companies also acquired 49.00% of the membership interests in AP-BCPG SFE Partners LLC (“AP-BCPG SFE”) from APSFH. AP-BCPG SFE indirectly owns a 15.55% membership interest in South Field Energy LLC (“SFE”), which operated a 1,182 MW combined cycle power generation plant project located in Columbiana County, Ohio, United States (equivalent equity MW of 90 MW)..

This investment aligns with the Group of Companies’ strategies in order to expand our core business, while creating recurring income scheme to the Group of Companies. Besides, it also enhances the investment opportunity in the USA in the future.







Dividend payment from the operating results for the second half of the year 2022

On 20 February 2023, the Board of Directors, in meeting No. 2/2023, has approved the dividend payment from the operating results for the second half of the year 2022 (1 July 2022 - 31 December 2022) to be proposed to the Annual General Meeting of Shareholders for year 2022 for approval at THB 0.16 per share. The total dividend payment for year 2021 is THB 0.20 per share, approximately THB 0.36 million. This included the dividend payment from the operating results for the first half of year 2022 (1 January 2022 – 30 June 2022) at THB 0.20 per share.

The Group of Companies' Contracted Capacity

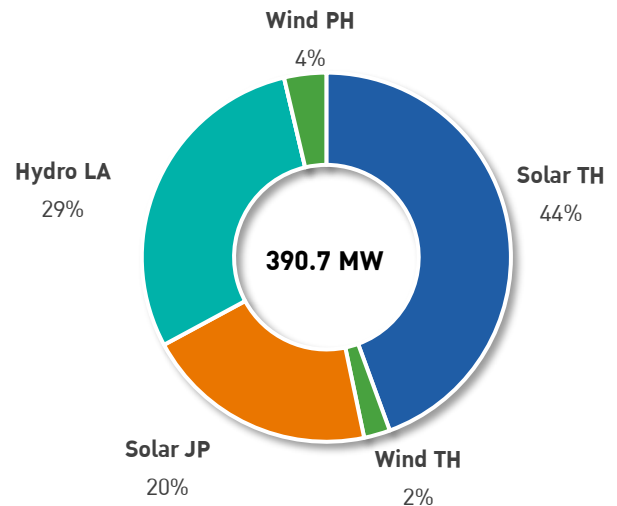
Contracted capacity breakdown by countries and types of energy at the end of Q4/2022.

Unit: Equity MW

Country	4Q21	4Q22	Δ %	3Q22	Δ %
Thai					
	171.8	173.7	1.1	173.7	0.0
	9.0	9.0	0.0	9.0	0.0
Japan					
	34.7	79.7	129.7	79.7	0.0
Laos					
	114.0	114.0	0.0	114.0	0.0
Indonesia*					
	157.5	0.0	-100.0	0.0	NA
The Philippines					
	14.4	14.4	0.0	14.4	0.0
Total	501.4	390.7	-22.1	390.7	0.0

*Remark: In 1Q/2022 the Group of Companies disposed 33.3% shares of Star Energy Group Holdings Pte Ltd. (SEGHPL) to Springhead Holdings Pte Ltd. and the transaction has been completed on 3 March 2022

Contracted capacity breakdown by power types



At the end of Q4/2022, total contracted capacity was 390.7 MW, decreased by 22.1% YoY, mainly from the disposal of 33.3% Star Energy Group Holdings Pte Ltd. shares to Springhead Holdings Pte Ltd. in March 2022. However, the Group of Companies' contracted capacity increased from the following factors:

- (1) The commercial operation of 3 new solar power plants in Japan with the total capacity of 65.0 MW. The 3 new projects include Chiba 1 project (COD in November 2021), Komagane project (COD in March 2022), and Yabuki project (COD in April 2022).
- (2) The commercial operation of new solar rooftop under the CMU Smart City project since November 2021 to April 2022
- (3) The commercial operation of new solar rooftop

While compared to Q3/2022, total contracted capacity remained unchanged.

Financial Performance

Financial Performance for Q4/2022

Unit: THB million	4Q21	4Q22	Δ (%)	3Q22	Δ (%)	2021	2022	Δ (%)
Revenue from sales and rendering of service	1,231.7	1,266.7	2.8%	1,543.5	(17.9%)	4,668.8	5,405.2	15.8%
Cost of sales and rendering of services	(424.2)	(532.9)	25.6%	(521.3)	2.2%	(1,607.9)	(1,978.3)	23.0%
Gross profit	807.5	733.8	(9.1%)	1,022.2	(28.2%)	3,060.9	3,426.8	12.0%
Administrative expenses*	(170.4)	(204.4)	19.9%	(130.3)	56.9%	(588.4)	(626.3)	6.5%
Operating profit	637.1	529.4	(16.9%)	891.9	(40.6%)	2,472.6	2,800.5	13.3%
Share of profit of investment in associates (excluding one-time item)	152.2	13.8	(90.9%)	(17.1)	180.5%	600.0	129.7	(78.4%)
EBITDA*	1,099.4	935.2	(14.9%)	1,272.5	(26.5%)	4,252.8	4,434.5	4.3%
Other income/(expense)	16.6	54.6	229.1%	35.0	55.9%	71.4	137.6	92.7%
FX gain/(loss)	(245.9)	(62.0)	NA	140.6	NA	34.3	(188.3)	NA
Other one-time item**	(99.1)	(16.6)	NA	(126.0)	NA	(307.8)	752.2	NA
EBIT	460.9	519.3	12.7%	924.4	(43.8%)	2,870.5	3,631.6	26.5%
Finance costs*	(210.8)	(193.2)	(8.3%)	(223.9)	(13.7%)	(787.4)	(835.6)	6.1%
EBT	250.1	326.0	30.4%	700.5	(53.5%)	2,083.0	2,796.0	34.2%
Income tax (expense) benefit*	(12.3)	(29.6)	NA	(59.2)	NA	(72.5)	(164.1)	NA
Minority interest	(0.1)	(0.4)	NA	(0.4)	NA	0.3	(1.8)	NA
Net profit attributable to owners of parent	237.7	295.9	24.5%	640.9	(53.8%)	2,010.8	2,630.1	30.8%
Core profit*	582.6	374.5	(35.7%)	626.3	(40.2%)	2,284.3	2,066.3	(9.5%)
Basic Earnings per Share (THB)	0.08	0.10	25.0%	0.11	(9.1%)	0.74	0.91	23.0%

Remark:

*Excluding gain/(loss) on FX and one-time items

**Including tax related to FX gain/(loss)

	4Q21	4Q22	3Q22	2021	2022
Total one-time items:	(344.9)	(78.5)	14.6	(273.5)	563.8
FX gain/(loss)	(245.9)	(62.0)	140.6	34.3	(188.3)
Tax related to FX gain/(loss)	26.7	(6.8)	(43.1)	(17.6)	(45.8)
Other one-time item	(125.8)	(9.8)	(82.9)	(290.2)	797.9
Expenses related to refinancing	-	-	-	(107.8)	-
Net gain from sales of investment in associates	-	-	-	-	1,644.6
Loss from disposal and impairment of assets	(70.8)	(8.9)	0.4	(94.1)	(644.0)
Net withholding tax and special business tax	-	(0.9)	(78.5)	-	(149.7)
Other one-time item	(55.0)	-	(4.8)	(88.4)	(52.9)

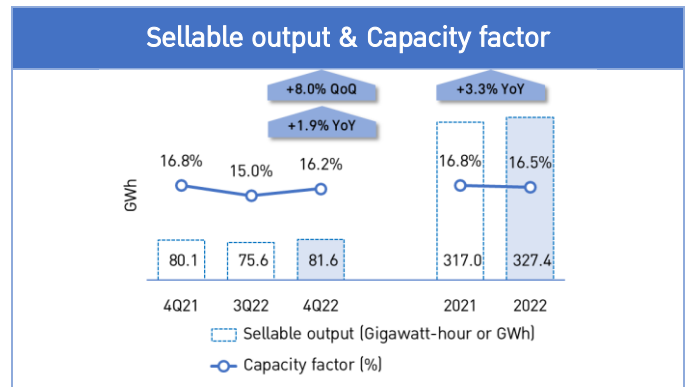
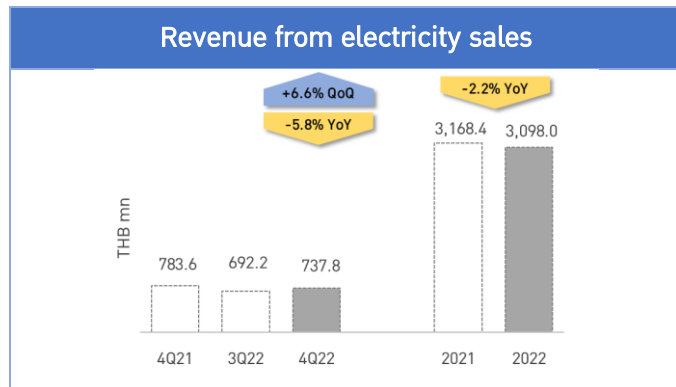
Revenue from sales and rendering of services

The Group of Companies has revenue structures classified by country as follows:

Unit: THB mn	4Q21	4Q22	Δ %	3Q22	Δ %	2021	2022	Δ %
Thai	804.1	754.0	(6.2%)	715.2	5.4%	3,251.9	3,170.1	(2.5%)
Laos	314.6	282.2	(10.3%)	499.5	(43.5%)	1,125.4	1,178.4	4.7%
Japan	96.7	202.3	109.1%	316.5	(36.1%)	245.5	996.1	305.7%
Other operating income	16.3	28.3	73.2%	12.4	127.5%	46.0	60.6	31.6%
Total	1,231.7	1,266.7	2.8%	1,543.5	(17.9%)	4,668.8	5,405.2	15.8%

The company and subsidiaries: Thailand

Solar



In Q4/2022, the Group of Companies recorded operating revenue from solar power plants in Thailand of THB 737.8 million, decreased by 5.8% YoY but grew by 6.6% QoQ. These were resulted from the following factors.

YoY

(+) Electricity generation grew by 1.9% YoY, thanks to the commercial operation of the solar rooftop (CMU project) during the past 12-month.

(-) Revenue from solar power plants in Q4/2022 fell YoY as a result of the expiration of adder power plants, totaling 40 MW in July and October 2022. However, the impact was lessened by the higher Ft rate.

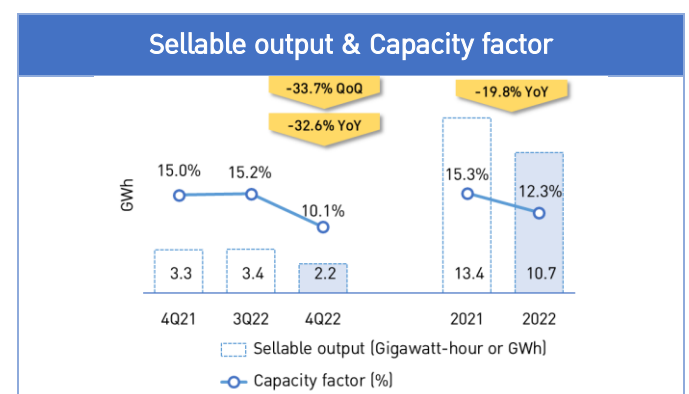
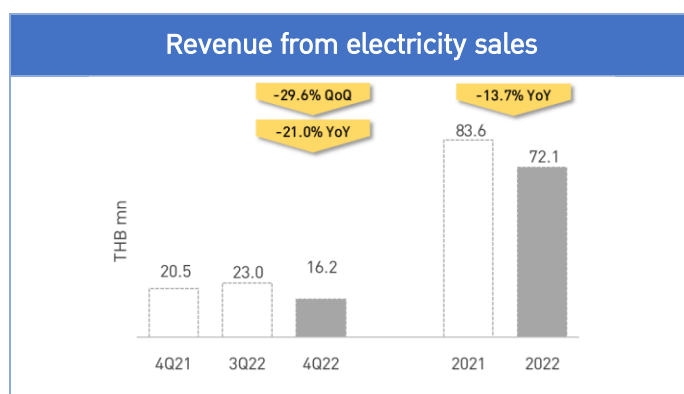
QoQ

(+) Electricity generation decreased by 8.0% QoQ, owing to the seasonal factor as the third quarter is normally the low season.

(+) Revenue from solar power plants in Q4/2022 improved QoQ thanks to the better electricity generation and the increased Ft rate, which fully compensated the impact from 10 MW adder expiration in October 2022.

For 2022, the Group of Companies recorded operating revenue from solar power plants in Thailand of THB 3,098.0 million, fell by 2.0% YoY owing to the expiration of adder power plants (8 MW in August 2021, 30 MW in July 2022, and 10 MW in October 2022). However, the impact was lessened by the higher Ft rate.

Wind

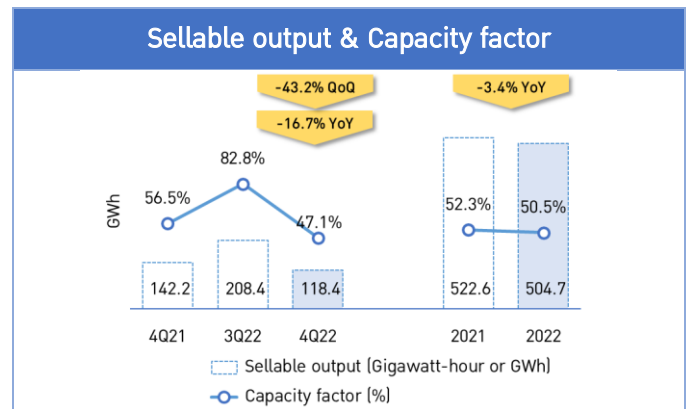
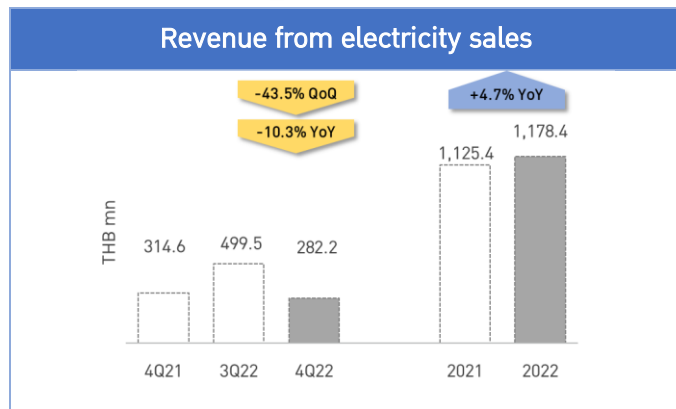


In Q4/2022, the Group of Companies recorded operating revenue from a wind power plant in Thailand of THB 16.2 million, decreased by 21.0% YoY and 29.6% QoQ. These were resulted from the following factors.

YoY	QoQ
<p>(-) Electricity generation dropped by 32.6% YoY to 2.2 GWh. Capacity factor fell to 10.1% from 15.0% in Q4/2021, mainly resulted from the lower wind speed at the project.</p>	<p>(-) Electricity generation decreased by 33.7% QoQ, which mainly due to the lower wind speed.</p>

For 2022, the Group of Companies recorded operating revenue from a wind power plant in Thailand of THB 72.1 million, fell by 13.7% YoY. This mainly came from the lower wind speed at the project, which led to the drop in capacity factor to 12.3% from 15.3% in 2021.


Subsidiaries: Laos

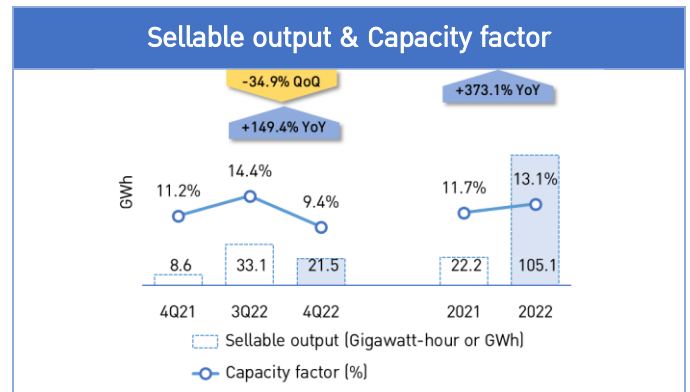
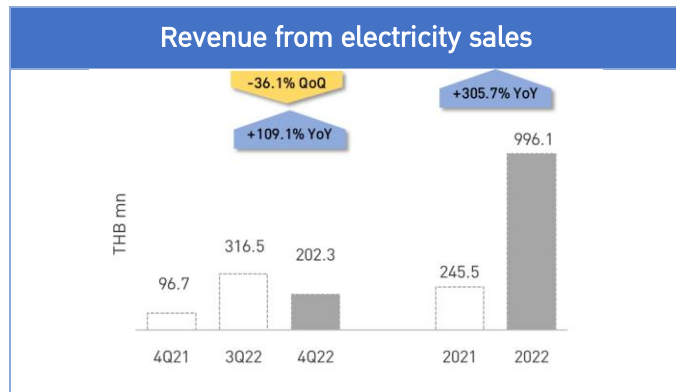


In Q4/2022, the Group of Companies recorded operating revenue from hydropower plants in Laos of THB 282.2 million, dropped by 10.3% YoY and 43.5% QoQ. These were resulted from the following factors.

YoY	QoQ
<p>(-) Electricity generation fell by 16.7% YoY from the plant shutdowns in December 2022, preparing for electricity sales to EVN.</p>	<p>(-) Electricity generation diminished by 43.2%, owing to plant shutdowns as mentioned as well as the impact from low season.</p>

For 2022, the Group of Companies recorded operating revenue from hydropower plants in Laos of THB 1,178.4 million, increased by 4.7% YoY. This mainly resulted by the appreciation of USD currency against the THB currency. Even though the electricity generation fell by 3.4% YoY from the plant shutdowns as mentioned.

Subsidiaries: Japan 



In Q4/2022, the operating revenue from solar power plants in Japan was reported at THB 202.3 million, which grew by 109.1% YoY but fell by 36.1% QoQ. These were resulted from the following factors.

YoY

(+) Electricity generation grew significantly by 149.4% YoY, due to the commercial operations of 3 new solar power plants, including Chiba 1 Project (Nov 21), Komagane Project (Mar 22), and Yabuki Project (Apr 22).

QoQ

(-) Electricity generation weakened by 34.9% QoQ, owing to lower irradiation.

For 2022, the operating revenue from solar power plants in Japan was reported at THB 996.1 million, significantly rose by 305.7% YoY from the commercial operations of 3 new projects as mentioned.

Total revenue from sales and rendering of services

In Q4/2022, total revenue was at THB 1,266.7 million, strengthened by 2.8% YoY, but weakened by 17.9% QoQ. These were resulted from the following factors.

YoY

(+) Higher revenue from an increase in electricity generation of solar power projects in Japan as mentioned.

QoQ

(-) Drop in revenue from the decrease of electricity generated from solar projects in Japan, hydropower in Lao PDR, and wind power projects in Thailand as mentioned.

For 2022, total revenue was at THB 5,405.2 million, grew by 15.8% YoY thanks to higher electricity generation of solar power projects in Japan and hydropower projects, “Nam San 3A” and “Nam San 3B”, in Lao PDR as mentioned.

Share of profit of investment in associates

The Group of Companies has share of profit of investment in associate's structure classified by country as follows:

Investment in associates: the Philippines



*Share of profits from operation excludes amortization and one-time items.

*Sellable output calculation according to holding stake

Unit: THB million	4Q21	4Q22	Δ YoY (%)	3Q22	Δ QoQ (%)	2021	2022	Δ YoY (%)
Share profits from operation	13.3	27.4	106.0%	[5.2]	622.2%	54.7	64.3	17.7%
(-) Amortization	[8.0]	[7.7]	4.1%	[7.8]	1.6%	[31.3]	[31.0]	0.8%
Share profits from operation (after amortization)	5.3	19.7	274.0%	[13.1]	250.4%	23.4	33.3	42.5%

In Q4/2022, the Group of Companies recorded share of profits from operation (after amortization) of THB 19.7 million, improved by 274.0% YoY and 250.4% QoQ. These were resulted from the following factors.

YoY

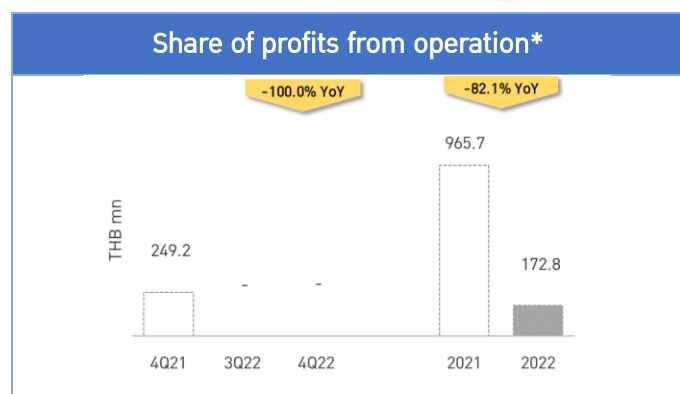
(+) The project received higher tariff rate and the compensation from business interruption insurance, which offset the decrease of electricity generation.

QoQ

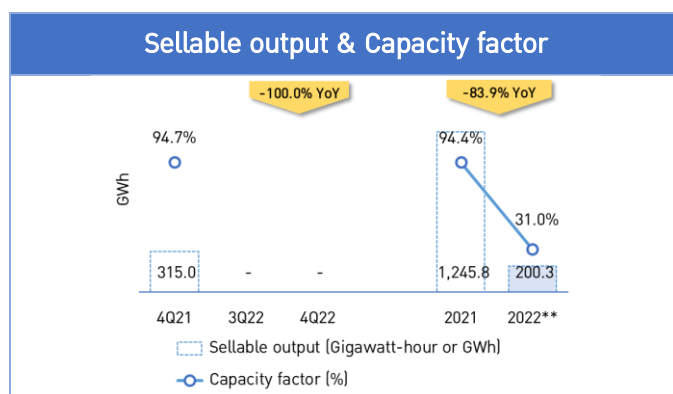
(+) Electricity generation grew by 88.5% QoQ following a better capacity factor of 29.6% from 15.7% in the previous quarter, which was due to the monsoon season in the Philippines.

For 2022, the Group of Companies recorded share of profits from operation (after amortization) of THB 33.3 million, increased by 42.5% YoY. This was mainly resulted by the higher tariff rate and the insurance compensation, which offset the decreased of electricity generation.

Investment in associates: Indonesia



*Share of profits from operation excludes amortization and one-time items



*Sellable output calculation according to holding stake

**9M22 Capacity factor was calculated from an average of 1Q/2022 capacity factor at 93.1% and 2Q/2022, 3Q/2022 that has no operations after the divestment completion in March 2022.

Unit: THB million	4Q21	4Q22	Δ YoY (%)	3Q22	Δ QoQ (%)	2021	2022	Δ YoY (%)
Share profits from operation	249.2	-	(100.0%)	-	NA	965.7	172.8	(82.1%)
(-) Amortization	(102.3)	-	(100.0%)	-	NA	(389.1)	(64.7)	(83.4%)
Share profits from operation (after amortization)	146.9	-	(100.0%)	-	NA	576.6	108.2	(81.2%)

In Q4/2022, the Group of Companies did not record share of profits from operation (after amortization) of geothermal power plants in Indonesia as the Group of Companies completed the share disposal of Star Energy Group Holdings Pte Ltd. (SEGHPL) on 3 March 2022. As a result, the share of profits from the operation (after amortization) of geothermal power plants decreased by 100% YoY.

For 2022, the Group of Companies reported share of profits from operation (after amortization) of geothermal power plants in Indonesia at THB 108.2 million, fell by 81.2% YoY from the divestment of geothermal power plants in March 2022.

Share of profit of investment in associates (before one-time items)

Unit: THB million	4Q21	4Q22	Δ YoY (%)	3Q22	Δ QoQ (%)	2021	2022	Δ YoY (%)
Share profits from operation	262.5	27.4	(89.6%)	(5.2)	(622.2%)	1,020.4	237.2	(76.8%)
Others	-	(5.9)	NA	(4.1)	NA	-	(11.8)	NA
(-) Amortization	(110.3)	(7.7)	(93.0%)	(7.8)	(1.6%)	(420.4)	(95.7)	(77.2%)
Share profits from operation (after amortization)	152.2	13.8	(90.9%)	(17.1)	180.5%	600.0	129.7	(78.4%)

In Q4/2022, the Group of Companies recorded share of profits of investment in associates (after amortization and before one-time items) of THB 13.8 million, dropped by 90.9% YoY but grew by 180.5% QoQ. These were resulted from the following factors.

YoY	QoQ
(-) there was no share of profit contributed from geothermal power plants in Indonesia as well as the record of losses from other business.	(+) Higher share of profits from wind power projects in the Philippines as mentioned.

For 2022, the Group of Companies recorded a share of profit of investment in associates (after amortization and before one-time items) of THB 129.7 million, down by 78.4% YoY. This mainly came from the sales of geothermal power plants in Indonesia in March 2022, together with the record of losses from other business.

EBITDA from operation

In Q4/2022, EBITDA from the operation was at THB 935.2 million, weakened by 14.9% YoY and 26.5% QoQ. These were resulted from the following factors.

YoY	QoQ
(-) Lower revenue contributed from solar power projects in Thailand, wind projects in Thailand and hydropower projects in Lao PDR as mentioned. (-) no share of profit contributed from geothermal power projects in Indonesia as mentioned.	(-) Lower revenue contributed from hydropower plants in Lao PDR, solar projects in Japan and wind projects in Thailand as mentioned.

For 2022, EBITDA from the operation was at THB 4,434.5 million, rose by 4.3% YoY from higher total revenue from solar power projects in Japan and hydropower projects in Lao PDR as mentioned.

Administrative expense

In Q4/2022, administrative expense (excluding one-time items) was at THB 204.4 million, increased by 19.9% YoY from the higher personnel and consulting expenses, while the growth QoQ was mainly resulted from the consulting expenses.

For 2022, administrative expense (excluding one-time items) was at THB 624.3 million, rose by 6.5% YoY.

SG&A to sales ratio in Q4/2022 grew from Q4/2021 and Q3/2022. However, SG&A to sale ratio in 2022 was lower from 2021.

Unit: %	4Q21	3Q22	4Q22	2021	2022
SG&A / Sales*	13.8	8.4	16.1	12.6	11.6

**Remark: administrative expenses are excluded from one-time items*

One-time items

In Q4/2022, the Group of Companies has one-time items as followed.

	4Q21	4Q22	3Q22	2021	2022
Total one-time items:	(344.9)	(78.5)	14.6	(273.5)	563.8
FX gain/(loss)	(245.9)	(62.0)	140.6	34.3	(188.3)
Tax related to FX gain/(loss)	26.7	(6.8)	(43.1)	(17.6)	(45.8)
Other one-time item	(125.8)	(9.8)	(82.9)	(290.2)	797.9
Expenses related to refinancing	-	-	-	(107.8)	-
Net gain from sales of investment in associates	-	-	-	-	1,644.6
Loss from disposal and impairment of assets	(70.8)	(8.9)	0.4	(94.1)	(644.0)
Net withholding tax and special business tax	-	(0.9)	(78.5)	-	(149.7)
Other one-time item	(55.0)	-	(4.8)	(88.4)	(52.9)

Gain/(loss) from foreign exchange

In Q4/2022, the Group of Companies booked FX loss of THB 62.0 million. This came from the Group of the Company's assets, which use foreign currency as a functional currency have decreased in value following the depreciation of foreign currency against THB in Q4/2022. As a result, the loss from translation occurred.

YoY	QoQ
(+) FX loss of THB 245.9 million in Q4/2021 from the depreciation of foreign currency against THB.	(-) FX gain of THB 167.4 million in Q3/2022 from appreciation of foreign currency against THB.

For 2022, the Group of Companies booked an FX loss of THB 188.3 million, decreased from the FX gain recorded in 2021 of THB 34.3 million. The loss recorded in 2022 came from the Group of the Company's assets, which use foreign currency as a functional currency, decreased in value following the depreciation of foreign currency against THB.

One-time expenses from sales of investment in associates

In 2022, the Group of Companies disposed 33.3% shares of Star Energy Group Holdings Pte Ltd. to Springhead Holdings Pte Ltd. in the amount of USD 440 million (or equivalent to THB 14,551.3 million). As a result, the Group of Companies recorded net gain from sales of investment in associate after related expenses and tax of THB 1,644.6 million.

One-time expenses from asset disposal and allowance for impairment of assets

In 2022, the Group of Companies recorded allowance for impairment of assets from 2 transactions, totaling of THB 644.0 million. First, a solar power project in Japan (10 MW), in the process of acquiring relevant permits to commence the construction, contains risk that it may not be able to obtain the permits as scheduled. As a result, there is a risk that the Feed-in-Tariff rate may be declined, affecting the possibility to develop the project. Meanwhile, the allowance for impairment of account receivables was booked to reflect the customer's credit risks due to its high outstanding balances.

One-time expenses related to withholding tax and special business tax

For 2022, the Group of Companies recorded expenses related to non-refundable withholding tax and special business tax (net tax) at THB 149.7 million. This one-time expense occurred from the settlement of shareholder loan's interest during the year.

Finance cost

In Q4/2022, the Group of Companies recorded finance cost (excluding one-time items) of THB 193.2 million, decreased by 8.3% YoY thanks to the lower amount of interest-bearing debt. While the QoQ drop by 13.7% was resulted from the efficiency of company's financial management that reduced the financial cost.

For 2022, the Group of Companies recorded finance cost (excluding one-time items) of THB 835.6 million, rose by 6.1% YoY. This came from the increasing of market interest rate resulted in floating rate loan portion had higher finance cost.

The average finance cost in Q4/2022 grew from Q4/2021 but fell from Q3/2022. Meanwhile the average finance cost in 2022 remained at the similar level to 2021.

Unit: %	4Q21	3Q22	4Q22	2021	2022
Average finance cost*	2.9	3.5	3.1	2.9	3.0

**Remark: administrative expenses are excluded from one-time items*

Core profit

In Q4/2022, the Group of Companies recorded core profit (excluding gain (loss) from FX and one-time items) of THB 374.5 million, dropped by 35.7% YoY and 40.2% QoQ. These were resulted from the following factors.

YoY	QoQ
<p>(-) Lower revenue contributed from solar power projects in Thailand, wind projects in Thailand and hydropower projects in Lao PDR together with the absence of share of profit contributed from geothermal power plants in Indonesia as mentioned.</p>	<p>(-) Lower revenue contributed from hydropower projects in Lao PDR, solar power plants in Japan, and wind power projects in Thailand as mentioned.</p>

For 2022, the Group of Companies recorded core profit (excluding gain (loss) from FX and one-time items) of THB 2,066.3 million, fell by 9.5% YoY. This came from the lower of revenue contributed from solar power projects and wind project in Thailand as well as the lower share of profit contributed from investments in associates as mentioned.

Net profit attributable to owners of parent

In Q4/2022, the Group of Companies recorded net profit attributable to owners of parent of THB 295.9 million, strengthened by 24.5% YoY but weakened by 53.8% QoQ. This was resulted by one-time items as followed.

YoY	QoQ
(+) In Q4/2022, the total one-time loss of THB 55.8 million was recorded, compared to Q4/2021 that recorded the total one-time loss of THB 344.9 million, as a result the net profit grew higher than the core profit's growth.	(-) In Q4/2022, the total one-time gain of THB 55.8 million was recorded, compared to Q3/2022 that recorded the total one-time gain of THB 14.6 million, as a result the net profit growth was lower than the core profit growth.

For 2022, the Group of Companies recorded net profit attributable to owners of parent of THB 2,630.1 million, up by 30.8% YoY, where the total one-time gain of THB 586.3 million was included. When compared to 2021, there was one-time loss of THB 273.5 million. As a result, net profit grew YoY.

Financial Position

Financial position analysis as of 31 December 2022

Unit: THB million	2021	% of total assets	2022	% of total assets	Δ (%)
Cash and cash equivalents	11,227.7	19.1%	20,332.8	36.2%	81.1%
Current investments	0.0	0.0%	0.0	0.0%	n.a.
Trade accounts receivables	2,316.7	3.9%	1,762.4	3.1%	(23.9%)
Other current assets	388.6	0.7%	783.1	1.4%	101.5%
Total current assets	13,932.9	23.7%	22,878.3	40.7%	64.2%
Investments in associate & subsidiaries	13,485.8	23.0%	1,341.7	2.4%	(90.1%)
Property, plant and equipment	17,371.8	29.6%	17,013.9	30.3%	(2.1%)
Goodwill and Intangible assets	11,809.6	20.1%	11,412.3	20.3%	(3.4%)
Other non-current assets	2,121.1	3.6%	3,514.2	6.3%	65.7%
Total non-current assets	44,788.3	76.3%	33,282.1	59.3%	(25.7%)
Total Assets	58,721.2	100.0%	56,160.4	100.0%	(4.4%)
Short-term borrowings	0.0	0.0%	0.0	0.0%	n.a.
Current portions of long-term borrowings	3,575.4	6.1%	2,571.1	4.6%	(28.1%)
Long-term borrowings	13,995.5	23.8%	10,673.7	19.0%	(23.7%)
Debentures	11,984.6	20.4%	11,984.7	21.3%	0.0%
Other liabilities	1,937.6	3.3%	1,655.0	2.9%	(14.6%)
Total liabilities	31,493.1	53.6%	26,884.4	47.9%	(14.6%)
Equity attributable to owners of the Company	27,159.7	46.3%	29,224.9	52.0%	7.6%
Non-controlling interests	68.5	0.1%	51.1	0.1%	(25.4%)
Total liabilities and Equity	58,721.2	100.0%	56,160.4	100.0%	(4.4%)

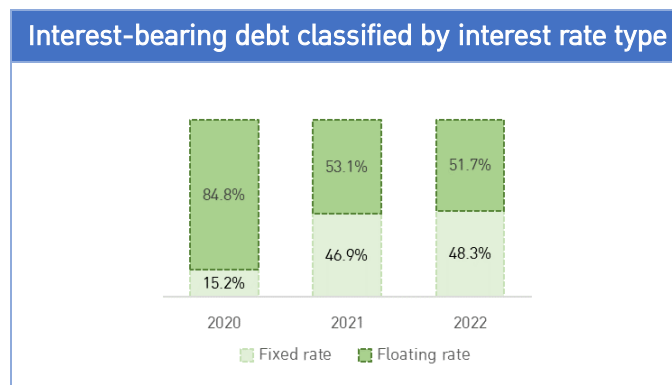
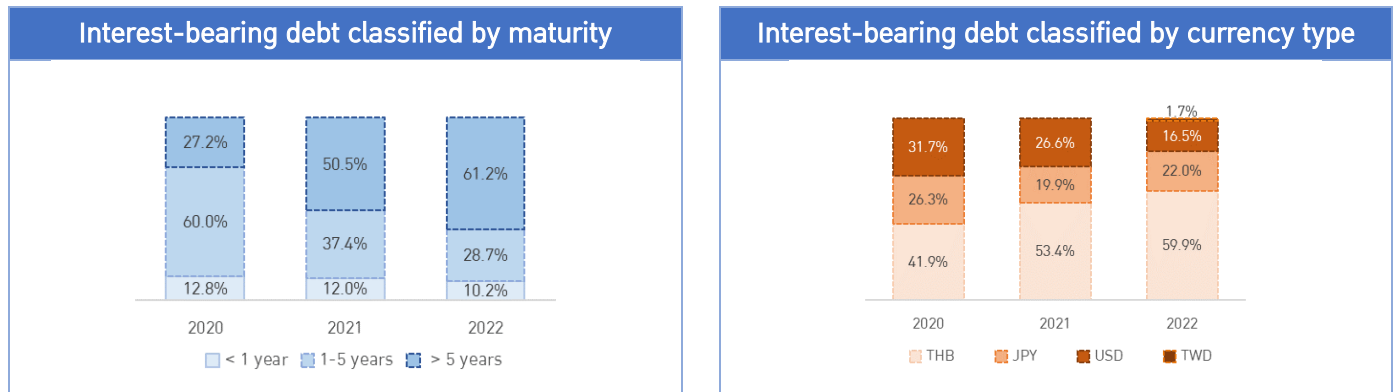
Asset

Total assets were at THB 56,160.4 million, declined by 4.4% from ending of 2021. This was resulted from the decrease in investments in associate & subsidiaries that the Group of Companies had sold the investment in Star Energy Group Holdings Pte. Ltd. ("SEGHPL") in March 2022. In addition, trade accounts receivables decreased from the settlement of EDL A/R, an amount of USD 32 million, with 25% of the investment of Nam Tai Hydropower (Nam Tai) from Phongsubthavy Group Sole Co., Ltd. Given this, the company obtained right to invest in electricity transmission line in Lao PDR.

Liability

Total liabilities were at THB 26,884.4 million, dropped by 14.6% from ending of 2021. This was mainly due to the partial loan repayments.

Interest-bearing debt classified by maturity, currency type and interest rates type are as follow.



In 2022, the proportion of interest-bearing debts with a maturity of less than 1 year and the proportion of interest-bearing debts with a maturity of between 1-5 years decreased to 10.2% and 28.7% respectively, while the proportion of interest-bearing debts with a maturity of over 5 years increased and has the largest majority at 61.2%.

Also, when considering interest-bearing debts classified by currency, the proportion of debts in THB currency increased due to the repayment of debts in USD currency. The proportion of fixed-rate loan slightly increased to 48.3%, while the proportion of floating rate interest-bearing debts slightly decreased to 51.7%.

Equity

Equity attributable to owners of the group of companies worth THB 29,224.9 million, grew by 7.6% from ending 2021 following the growth of operating performance.

Cash Flow Statement

Cash flow statement analysis as of 31 December 2022

Unit: THB million	2021	2022	Δ
Net cash from (used in) operating activities	2,467.3	2,988.2	520.9
Net cash from (used in) investing activities	(4,458.6)	12,336.8	16,795.4
Net cash from (repay to) financing activities	1,425.0	(6,223.0)	(7,648.0)
Net increase in cash and cash equivalents	(566.3)	9,102.0	9,668.3
Cash and cash equivalents at 1 January	11,138.3	11,227.7	89.5
Effect of exchange rate changes on balances held in foreign currencies	235.2	3.1	(232.1)
Cash and cash equivalents at end period	10,807.2	20,332.8	9,525.7
Cash paid for investment activities	(4,475.0)	(1,902.6)	2,572.4

For the year 2022, net cash flow from operating activities was at THB 2,988.2 million. Meanwhile, net cash flow from investing activities was at THB 12,336.8 million, mainly came from the sales of investment in Star Energy Group Holdings Pte Ltd. (SEGHPL). Net cash flow repaid to financing activities was at THB 6,223.0 million, mainly came from the repayment of loan from financial institutions. As a result, cash and cash equivalents at end of 2022 was at THB 20,332.8 million.

Key Financial Ratio

Key financial ratio analysis as of 31 December 2022

	2021	2022	Δ
Profitability ratio			
Gross profit margin (%)	65.6	63.4	(2.2)
EBITDA margin (%)*	80.7	73.2	(7.5)
Net profit margin (%)	43.1	48.7	5.6
ROE (%) (Annualized)	8.1	9.3	1.2
ROA (%) (Annualized)	3.7	4.6	0.9
Liquidity ratio			
Current ratio (x)	2.9	6.6	3.7
Account receivable turnover (x)	2.7	2.7	0.0
Average collection period (days)	135.2	134.3	(0.9)
Leverage ratio			
Interest-bearing debt/equity (x)	1.1	0.9	(0.2)
Net interest-bearing debt/equity (x)	0.7	0.2	(0.5)
Total liability/equity (x)	1.2	0.9	(0.3)

**EBITDA margin (%) = EBITDA/(sales + share of profit before one-time items)*

Profitability ratio

Gross profit margin in 2022 was at 63.4%, decreased from 2021 due to adder expiration of solar power plants in Thailand. While EBITDA margin in 2022 was at 73.2%, lower from the previous year due to the absence of profit contributed from the geothermal power plants in Indonesia. Net profit margin in 2022 was reported at 48.7%, improved YoY thanks to gain from the sales of investment in associates as mentioned.

Liquidity ratio

The Group of Companies specifies credit term for trade receivables of no more than 60 days. As of ending 2022, majority operating income of the Group of Companies come from the State Enterprise, namely EGAT and PEA. These state enterprises need to follow the payment condition in Power Purchase Agreement (PPA) or practice of individual state enterprises.

Average collection period as of 2022 remained relatively similar to the previous year from the conversion of EDL account receivables to the investment in transmission line project. The electricity payment of hydro power plants, “Nam San 3A” and “Nam San 3B” in Lao PDR from EDL had a longer period. As a result, the average collection period was different from the past.

However, the Group of Companies closely monitored EDL debt collection and continued to receive payment. In addition, the hydropower plants have Power Purchase Agreement (PPA) with EVN, which will begin to sell electricity within 1Q/2023. This would lessen average collection period by getting faster payment.

Leverage ratio

Interest-bearing debt to equity ratio in 2022 was at 0.9 times, slightly reduced from 2022.

Other important information

Key factors which could affect to the Group of Companies performance

The group of companies estimates key factors which could affect its short-term operations as follow:

(+/-) Changes in the policy of the government and other related parties in conducting businesses in Thailand and Japan. The change might affect the group of companies's under-construction projects and the prospect of business in the future. However, our one of the main strategies is to focus an investment to the country that have clear renewable energy supporting policy in Power Development Plan. We also followed the change in a policy closely.

(+/-) The fluctuation of THB against JPY and USD will allow the group of companies to book gain/loss in FX translation due to net assets/liability balance sheet exposure in foreign currency. Nevertheless, the group of companies have plan to manage and follow net assets/liabilities to blend with both transaction and functional currency in each footprint to decrease impact from FX translation.

(+/-) A change in interest rate is expected to allow the financial cost of the group of companies to change slightly since approximate 52% of the group of companies's interest-bearing debt bears with floating rates. However, the group of companies believes that the financial cost will be well-managed under the prudent financial policy. The Group of the Companies is in the process of offering debentures in THB for repayment of debts, most of which are floating interest rate, and some are in foreign currency. Therefore, this could reduce the risk of interest rate and the exchange rate.

(+/-) Seasonality factors in each country have impact on electricity generation performance of the group of the group of companies from renewable energy including Solar conditions, Wind and Hydro. For example, in rainy season, electricity generation from solar will decrease while, on the other hand, electricity generation from hydropower will increase.

(-) At this moment, the Group of the Companies have various types of counterparties, including domestic counterparties and international counterparties both in developing country and under developing country. Moreover, there was counterparties in government sector and private sector. The difference types of counterparties have different levels of credit risk. However, the Group of the Companies has managed to diversify the counterparties risk in portfolio. In some circumstances, the counterparty's credit risk could be managed by switching counterparty to another counterparty with better credit risk profile.

Appendices

Sellable electricity output by each power plants

MWh	4Q21	4Q22	Δ (%)	3Q22	Δ (%)	2021	2022	Δ (%)
Total production	234,220	223,765	(4.5%)	320,450	(30.2%)	875,210	947,908	8.3%
Production - Thailand (Solar)	80,095	81,633	1.9%	75,579	8.0%	317,030	327,350	3.3%
Production - Adder	68,246	66,350	(2.8%)	61,338	8.2%	269,663	266,140	(1.3%)
Tariff (Incl. adder) (THB-kWh)	10.77	10.18	(5.5%)	10.26	(0.8%)	10.94	10.66	(2.6%)
Production - FIT 5.66	6,530	6,733	3.1%	6,042	11.4%	26,152	26,579	1.6%
Feed in Tariff (THB-kWh)	5.66	5.66	0.0%	5.66	0.0%	5.66	5.66	0.0%
Production - FIT 4.12	3,248	3,207	(1.3%)	3,073	4.4%	13,438	13,261	(1.3%)
Feed in Tariff (THB-kWh)	4.12	4.12	0.0%	4.12	0.0%	4.12	4.12	0.0%
Public solar	2,071	5,342	158.0%	5,126	4.2%	7,777	21,371	174.8%
Feed in Tariff (THB-kWh)	2.86	3.56	24.5%	3.12	14.1%	2.91	3.10	6.5%
Production - Thailand (Wind)	3,307	2,227	(32.6%)	3,359	(33.7%)	13,392	10,738	(19.8%)
Tariff (Incl. adder) (THB-kWh)	6.20	7.27	17.3%	6.84	6.3%	6.24	6.71	7.5%
Production - Japan (Solar)	8,626	21,514	149.4%	33,072	(34.9%)	22,215	105,101	373.1%
Feed in Tariff (JPY-kWh)	37.53	38.99	3.9%	36.36	7.2%	37.63	36.22	(3.7%)
Production - Laos (Hydro)	142,191	118,391	(16.7%)	208,440	(43.2%)	522,573	504,720	(3.4%)
Feed in Tariff (US cents-kWh)	6.63	6.56	(1.1%)	6.58	(0.3%)	6.65	6.58	(1.1%)

Revenue structure of each power plants

Unit: THB million	4Q21	4Q22	Δ (%)	3Q22	Δ (%)	2021	2022	Δ (%)
1. Revenue - Thailand (Solar)	783.6	737.8	(5.8%)	692.2	6.6%	3,168.4	3,098.0	(2.2%)
2. Revenue - Thailand (Wind)	20.5	16.2	(21.0%)	23.0	(29.6%)	83.6	72.1	(13.7%)
3. Revenue - Japan (Solar)	96.7	202.3	109.1%	316.5	(36.1%)	245.5	996.1	305.7%
4. Revenue - Laos PDR (Hydro)	314.6	282.2	(10.3%)	499.5	(43.5%)	1,125.4	1,178.4	4.7%
5. Other operating income	16.3	28.3	73.2%	12.4	127.5%	44.0	60.6	37.7%
Total revenue	1,231.7	1,266.7	2.8%	1,543.5	(17.9%)	4,666.8	5,405.2	15.8%

Net share profits from investment in associates

<i>Unit: THB million</i>	4Q21	4Q22	Δ YoY (%)	3Q22	Δ QoQ (%)	2021	2022	Δ YoY (%)
Share profits from operation	262.5	27.4	[89.6%]	[5.2]	[622.3%]	1,020.4	237.2	[76.8%]
Others	-	[5.9]	NA	[4.1]	NA	-	[11.8]	NA
(-) Amortization	[110.3]	[7.7]	[93.0%]	[7.8]	[1.6%]	[420.4]	[95.7]	[77.2%]
Share profits from operation (after amortization)	152.2	13.8	[90.9%]	[17.1]	[180.5%]	600.0	129.7	[78.4%]
<i>(+/-) One-time item</i>								
<i>Amortization of deferred issuance cost from refinar.</i>	-	-	NA	-	NA	-	-	NA
<i>Tax provision</i>	-	-	NA	-	NA	-	-	NA
<i>Allowance for account receivable</i>	-	-	NA	-	NA	-	-	NA
Net share profits	152.2	13.8	[90.9%]	[17.1]	[180.5%]	600.0	129.7	[78.4%]

Disclaimer

The information contained in this document is intended to provide and explain the Group of Companies' operation for shareholders and investors to follow and understand operations, financial position and operating factors that will affect the group of companies' s operations better. The information and analysis contained herein have been done by the information as at the date of Financial Statement submission to the Stock Exchange of Thailand as well as relevant sources of information have been believed to be trustworthy. However, the analysis of such information may change in the future if certain factors which are subject to business economic, and competitiveness are changed. The information contained herein does not take into consideration the investment objectives. The group of companies would ask shareholders and investors to use the information with best judgement with regards to the use of information from this presentation.