



No Boundaries FOR *A TRUE PIONEER*

BCPG Public Company Limited
Management Discussion and Analysis
For FY2021 Operating Results



17 February 2022

World's Greenergy Icon

Evolving the world through the greener ways



Executive Summary

Financial Highlight

Unit: THB million	4Q20	4Q21	Δ %	3Q21	Δ %	2020	2021	Δ %
Revenue from sale and rendering of service	1,136.7	1,231.7	8.4%	1,302.3	(5.4%)	4,230.7	4,668.8	10.4%
Share of profit of investment in associates*	147.0	152.2	3.6%	150.3	1.3%	508.2	600.0	18.1%
EBITDA*	1,030.5	1,099.4	6.7%	1,213.5	(9.4%)	3,848.7	4,252.8	10.5%
Net profit	310.7	237.7	(23.5%)	684.7	(65.3%)	1,912.3	2,010.8	5.2%
Recurring profit*	535.9	582.6	8.7%	708.8	(17.8%)	1,959.3	2,284.3	16.6%

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

Q4/2021: BCPG or the Group of Companies recorded recurring net profit of THB 582.6 million, grew by 8.7% YoY but dropped 17.8% QoQ. These were resulted from the following factors.

+8.7% YoY

- (+) Higher revenue contribution from solar power plants in Thailand, due to efficiency improvement program and the greater irradiation
- (+) Revenue recognition from the commercial operation of a new solar power plant, named Chiba 1 (20MW) in Japan on 1 November 2021.
- (+) Higher share of profit from geothermal power plants in Indonesia thanks to higher tariff rate and lower finance cost.

-17.8% QoQ

- (-) Lower revenue contribution from hydropower projects, "Nam San 3A and "Nam San 3B", resulting from the seasonal effect that the third quarter is generally high season of earnings.
- (-) Lower revenue contribution from wind power project in Thailand in accordance with the seasonal factor of the wind power plants as usual.
- (-) Lower share of profit from geothermal power plants in Indonesia as a result of higher operating expenses from an open of new production well.
- (-) Higher administrative expenses.

For 2021, the Group of Companies recorded recurring net profit of THB 2,284.3 million, increased by 16.6% YoY. This was resulted from the following factors.

- (+) Full year of revenue contribution from new projects including hydropower projects in Lao PDR, "Nam San 3B", acquired since February 2020 and the 4 new solar power projects in Thailand (20MW), acquired since August 2020. In addition, solar power projects in Thailand have been improving the efficiency of electricity generation.
- (+) Higher revenue contribution from Hydro power projects in Lao PDR named "Nam San 3A" and "Nam San 3B" owing to higher rainfall
- (+) Revenue recognition from the commercial operation of a new solar power plant in Japan (Chiba 1) in November 2021.
- (+) Higher share of profit from both geothermal power plants in Indonesia thanks to higher tariff rate and lower finance cost.

Key developments during 2021 until now

Assigned credit rating of A- by TRIS Rating with a stable outlook

In April 2021, the Group of the Companies was assigned by TRIS Rating at A- with a "stable" rating outlook. The rating reflects BCPG's revenue reliability from power-generating assets and its well-diversified power portfolio. Besides, revenue from new projects will offset the revenue from the solar projects under adder scheme that will gradually decrease and there are also numbers of on-hand projects under development. This credit will also provide the opportunity to access new sources of funding for supporting the investment readiness in further.

In July 2021, the Group of the Companies was assigned by TRIS Rating at A- to proposed issue of up to THB 10 billion in senior unsecured debentures. The proceeds from the new debentures will be used mainly for refinancing its secured loans.

Invested in "ENRES" for Smart Energy Software Development for organizations

On 10 May 2021, the Group of the Companies announced the investment in a Pre-Series A funding of Energy Response Co., Ltd, or "ENRES", a Thai start-up company. ENRES technology can fully digitize factory and building management by utilizing IoT technologies to monitor and control all the sensors and AI Technologies to automatically analyze, recommend and control the required equipment to always ensure best efficiency. With innovative technologies, organizations can manage energy usage on a digital platform by gaining access to real-time data on energy used for running devices and machines. The technologies can improve safety, energy efficiency, as well as reducing operational costs.

Lom Ligor Wind Farm won "Battery Storage Deal of The Year" at the Triple A Infrastructure Asset Awards 2021.

On 2 June 2021, the Group of the Companies' project named Lom Ligor won "Battery Storage Deal of The Year" at the Triple A Infrastructure Asset Awards 2021 from its project financing. The awards are arranged by The Asset, Asia's leading financial business magazine.

The project had already become the first renewable energy project in Thailand to deploy an energy storage system (ESS) as the solution to the intermittency of wind power. The system installed at Lom Ligor wind farm captures excess energy production and optimizes discharge to the grid to stabilize power supply. The project was selected by the Office of the Energy Regulatory Commission (ERC) of Thailand to be included as an ERC Sandbox Project.

Invested in VRB Energy, the manufacturing of utility-scale energy storage business

On 2 July 2021, the Group of the Companies announced the investment in VRB Energy, which conducts research, development, manufacturing, and distribution of energy storage systems in type of Vanadium Redox Flow in the amount of USD 24 million.

Redox Flow batteries are suitable for use in utility scale applications such as connection to transmission lines, decentralized power generation network support or virtual power plant because it can store electricity that needs high capacity and store for a long time, which are trends for the renewable energy business in the future. Also, this is in line with investment direction of the Group of Companies as a producer and distributor of electricity both domestically

and internationally as well as to create synergy which makes the Group of Companies access to energy storage technology and can be applied with the development projects in the future.

Signed Monsoon project's Power Purchase Agreement (PPA) with Vietnam Electricity

On 12 July 2021, Impact Energy Asia Development Limited ("IEAD") successfully entered into 25-year power purchase agreement (PPA) of Monsoon project with Vietnam Electricity. The project is located in Lao PDR and is planned to be commercialized within 31 December 2025 with the electricity tariff rate at USD 0.0695 per kWh.

Monsoon project is a 600 MW wind power project located in Sekong and Attapeu provinces, Lao PDR, to produce and supply green electricity through a 500-Kilovolt transmission line to Quang Nam province in Vietnam.

Achieved in issuing Green bonds amounting of THB 12,000 million

In September 2021, the Group of the Companies achieved in issuing Green bonds, which is the Group of the Companies' the first bond issuance to bond market with amounting of THB 12,000 million, average 8.8 years maturity and average interest rate of 2.97%. Given to the subscription, there was nearly three times response higher than the targeted offering. In addition, the green bonds are rated by TRIS Rating at "A-" as well as to be used to repay the original loan of the geothermal power plant projects and used for the developments and investments of the Group of the Companies' solar power plants in the future.

Furthermore, the green bonds are reviewed and certified by DNV and Climate Bonds Initiative (CBI) to comply with Green Bond Principles, ASEAN Green Bond Standards, and CBI's Climate Bonds Standard V.3.0.

Signed MOU to collaborate exclusively with Keppel New Energy Pte Ltd. on the development of sustainable smart city

On 7 October 2021, the Group of the Companies signed a Memorandum of Understanding (MOU) to collaborate exclusively with Keppel New Energy Pte Ltd, a wholly owned subsidiary of Keppel Infrastructure Holdings Pte Ltd (Keppel Infrastructure); Smart Infrastructure Development Specialist world class from Singapore.

This collaboration aims to develop the smart city development business in Thailand to complete a full cycle of energy and environment. This also includes investment in structure and centralized management of cooling systems (Cooling-as-a-Service) and Electric Vehicles, which is a development of solutions to balance carbon emissions into the atmosphere and support the goal of reducing carbon emissions to net zero within the year 2065-2070 according to the national energy plan.

Achieved the COD 2 solar projects in Japan and Thailand as planned

On 1 November 2021, the Group of Companies' 2 solar projects totaling 27.7 MW have been commercialized, namely Chiba 1 and CMU project. The Chiba 1 project is located in Chiba province, Japan, with a holding stake of 100% and an installed capacity of 20 MW. The project successfully achieved the commercial operation of generating and dispatching power generation to Tokyo Electricity Power Company under Feed-in-Tariff at 36 yen per kWh. The CMU project is a solar rooftop project at Chiang Mai University under CMU Smart City of Chiang Mai province. The CMU project, which is being operated by Thai Digital Energy ("TDED"), a subsidiary of the Group of Companies with a 75 % stake, has already commercialized the first phase with 7.7 MW in the Suan Sak, Suan Dok, and Mae Hia areas. Additionally, on 1

January 2022, the Group of Companies has commercialized an additional of 0.9 MW of the CMU project, increasing the operating contracted capacity to 8.6 MW.

Invested in Taiwan Solar farms

On 17 November 2021, the Group of Companies announced the establishment of a new subsidiary, BCPG Formosa Co., Ltd. (BCPG Formosa) to fully expand the solar power business in Taiwan. The Group of Companies will acquire 100% equity in BCPG Formosa with an authorized capital of TWD 82 million. Since Taiwan is a potential area to develop clean energy projects and the country's government aims to be less reliant on nuclear power by focusing more on clean energy investments, this investment offers an opportunity for new developments to the Group of Companies in the future.

Besides, 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 from 2022 to 2024, and the commercial operation date is schedule from 2022 to 2025. This development of solar power projects is an excellent opportunity for the Group of Companies to have long-term-Feed-in-Tariffs power purchase agreement with Taiwan Power Company, the state-owned enterprise managing electricity production and distribution in Taiwan.

Invested in cross-border transmission line system project in Laos

On 31 December 2021, a subsidiary of the Group of Companies, BCPG Indochina Co., Ltd. (BCPG Indochina), signed a share purchase agreement to acquire 25% common shares of Nam Tai Power Sole Co., Ltd. (Nam Tai) in the amount of not exceeding USD 32 million (equivalent to THB 1,070 million). The acquisition in Nam Tai allows the Group of Companies to obtain 50% of economic rights to develop and operate the 220 kV transmission line system and substation, which will transfer green electricity from Nam Tai hydropower project in Laos to Vietnam Electricity (EVN) at the border of Laos and Vietnam.

In addition, the transmission line system is also an essential infrastructure for the Group of Companies' hydropower projects in Laos, Nam San 3A & Nam San 3B, including nearby renewable energy projects in the future, to sell electricity from Laos to EVN. The cross-border transmission line system project will serve not only high demand of electricity in Vietnam as the country is growing fast, but also strengthen economic robustness of the Group of Companies' renewable energy projects in the long run.

Dividend payment from the operating results for the second half of the year 2021

On 15 February 2022, the Board of Directors, in meeting No. 2/2022, has approved the dividend payment from the operating results for the second half of the year 2021 (1 July 2021 - 31 December 2021) to be proposed to the Annual General Meeting of Shareholders for year 2021 for approval at THB 0.17 per share. The total dividend payment for year 2021 is THB 0.33 per share, approximately THB 926 million. This included the dividend payment from the operating results for the first half of year 2021 (1 January 2021 – 30 June 2021) at THB 0.16 per share.

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

On 17 February 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 14,566.9 million based on exchange rate of THB 33.1/USD). The completion of the share disposal is expected to be completed in Q1/2022 and the sales proceed will be invested in new renewable projects, increasing the Group of Companies' investment capacity in the future.







Invested in Lao PDR's electricity business

On 17 February 2022, the Group of Companies announced the MOU signing with Capital Asia Investments Pte Ltd. (CAI) as a co-investor, CAI is not a related person of the Group of Companies, and the Ministry of Finance on behalf of the Government of Laos (GOL). The Group of Companies' investment amount is not exceeding USD 100 million. The objectives of this investment are to 1) obtain the right to invest in Lao PDR's electricity business where the GOL has a policy to invest through Lao State Holding Enterprise (LHSE) and 2) provide advisory services for LHSE regarding the management of renewable energy. The terms and conditions of the main agreement is now under the negotiation with the GOL to be further propose to the related government agencies for approval. This investment will enhance the Group of Companies' capability and opportunity to invest in renewable projects in the future.

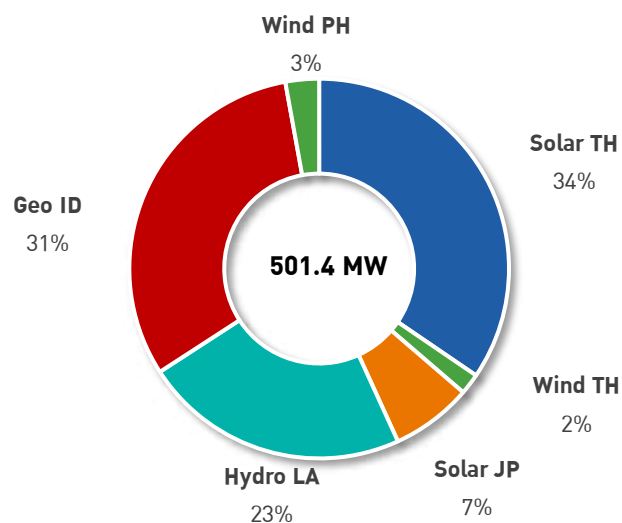
The Group of Companies' Contracted Capacity

Contracted capacity breakdown by countries and types of energy at the end of Q4/2021.

Unit: Equity MW

Country	4Q20	4Q21	Δ %	3Q21	Δ %
Thai					
	164.2	171.8	4.6	166.9	3.0
	9.0	9.0	0.0	9.0	0.0
Japan					
	14.7	34.7	136.1	14.7	136.1
Laos					
	114.0	114.0	0.0	114.0	0.0
Indonesia					
	157.5	157.5	0.0	157.5	0.0
The Philippines					
	14.4	14.4	0.0	14.4	0.0
Total	473.7	501.4	5.8	476.4	5.2

Contracted Capacity Breakdown by Power Types



At the end of Q4/2021, total contracted capacity was 501.4 MW, increased by 5.8% YoY and 5.2% QoQ, mainly from the following factors:

- (1) The commercial operation of new solar power plant (Chiba 1) in Japan with the contracted capacity of 20.0 MW in November 2021
- (2) The commercial operation of new solar rooftop under the CMU Smart City project in November 2021
- (3) The commercial operation of new solar rooftop

Financial Performance

Financial Performance for Q4/2021

Unit: THB million	4Q20	4Q21	Δ (%)	3Q21	Δ (%)	2020	2021	Δ (%)
Revenue from sale and rendering of service	1,136.7	1,231.7	8.4%	1,302.3	(5.4%)	4,230.7	4,668.8	10.4%
Cost of sale and rendering of services	(395.7)	(424.2)	7.2%	(394.0)	7.7%	(1,436.2)	(1,607.9)	12.0%
Gross profit	741.0	807.5	9.0%	908.3	(11.1%)	2,794.5	3,060.9	9.5%
Administrative expenses*	(155.8)	(170.4)	9.4%	(131.6)	29.5%	(532.1)	(588.4)	10.6%
Operating profit	585.2	637.1	8.9%	776.7	(18.0%)	2,262.4	2,472.6	9.3%
Share of profit of investment in associates (excluding one-time item)	147.0	152.2	3.6%	150.3	1.3%	508.2	600.0	18.1%
EBITDA*	1,030.5	1,099.4	6.7%	1,213.5	(9.4%)	3,848.7	4,252.8	10.5%
Other income/(expense)	10.2	16.6	63.2%	14.7	12.6%	28.7	71.4	148.6%
FX gain/(loss)	(69.2)	(245.9)	NA	177.2	NA	215.6	34.3	NA
Other one-time item	(156.0)	(125.3)	NA	(201.3)	NA	(262.7)	(333.8)	NA
EBIT	517.2	434.7	(15.9%)	917.6	(52.6%)	2,752.2	2,844.5	3.4%
Finance costs**	(202.0)	(210.8)	4.4%	(198.4)	6.3%	(819.7)	(787.4)	(3.9%)
EBT	315.2	223.9	(29.0%)	719.2	(68.9%)	1,932.5	2,057.0	6.4%
Income tax (expense) benefit*	(5.2)	13.9	NA	(34.7)	NA	(20.9)	(46.5)	NA
Minority interest	0.7	(0.1)	NA	0.1	NA	0.6	0.3	NA
Net profit	310.7	237.7	(23.5%)	684.7	(65.3%)	1,912.3	2,010.8	5.2%
Recurring profit*	535.9	582.6	8.7%	708.8	(17.8%)	1,959.3	2,284.3	16.6%
Basic Earnings per Share (THB)	0.13	0.08	(38.5%)	0.25	(68.0%)	0.92	0.74	(19.6%)

Remark:

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

**Excluding expenses related to refinance cost

	4Q20	4Q21	3Q21	2020	2021
Total one-time items:	(225.2)	(344.9)	(24.1)	(47.1)	(273.5)
FX gain/(loss)	(69.2)	(245.9)	177.2	215.6	34.3
Tax related to Gain/(loss) on foreign exchange	6.1	17.8	(44.5)	(11.7)	(17.5)
Expenses related to refinancing under share of profit from investment in associates	(171.5)	0.0	0.0	(171.5)	0.0
Tax saving from net investment hedge	0.0	8.9	(9.0)	0.0	(0.1)
Expenses related to refinancing	(171.5)	0.0	(107.8)	(171.5)	(107.8)
Loss from disposal and impairment of assets	0.0	(43.6)	(48.3)	0.0	(94.1)
Consult fee for transmission line investment	0.0	(66.7)	0.0	0.0	(66.7)
Other one-time item	9.4	(15.5)	(0.8)	(79.5)	(21.6)

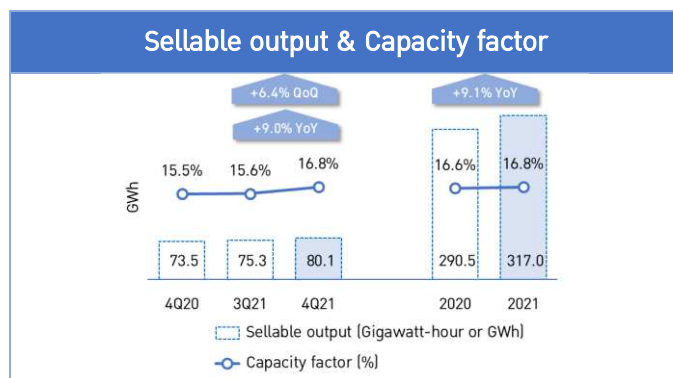
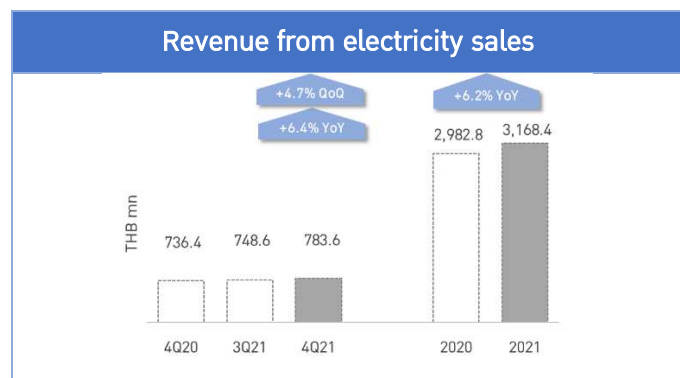
Revenue from sale and rendering of services

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

Unit: THB mn	4Q20	4Q21	Δ %	3Q21	Δ %	2020	2021	Δ %
Thai	757.5	804.1	6.1%	773.6	3.9%	3,056.1	3,251.9	6.4%
Laos	322.2	314.6	-2.3%	460.3	-31.6%	948.4	1,125.4	18.7%
Japan	47.3	96.7	104.4%	56.6	70.8%	191.1	245.5	28.5%
Other operating income	9.7	16.3	68.0%	11.8	38.5%	35.1	46.0	31.1%
Total	1,136.7	1,231.7	8.4%	1,302.3	-5.4%	4,230.7	4,668.8	10.4%

The company and subsidiaries: Thailand

Solar



In Q4/2021, the Group of Companies recorded operating revenue from solar power plants in Thailand of THB 783.6 million, increased by 6.4% YoY and 4.7% QoQ. These were resulted from the following factors.

YoY

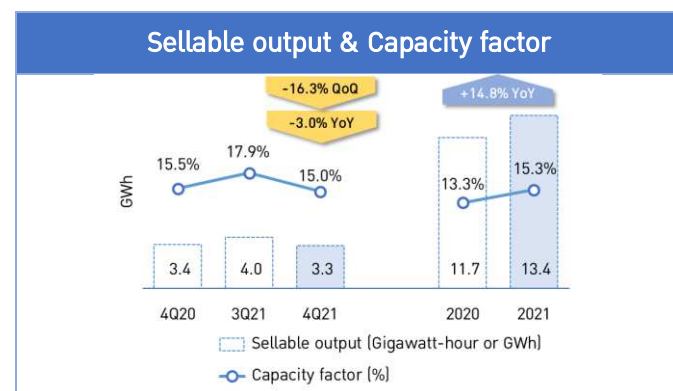
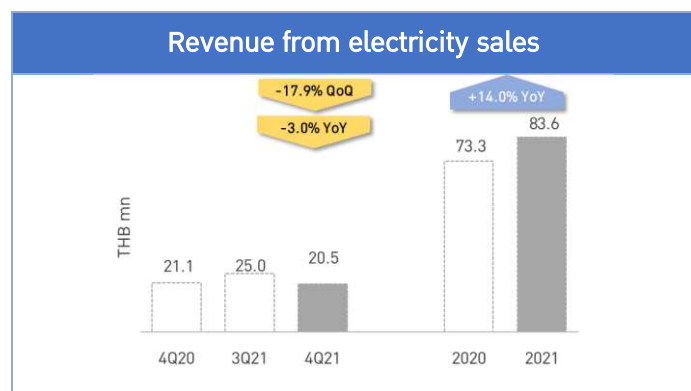
(+) Efficiency improvement program of solar power plants in Thailand and the greater irradiation made electricity generation rose by 9.0% YoY to 80.1 GWh.

QoQ

(+) Electricity generation grew by 6.4% QoQ, due to seasonal factor as quarter 3 is low season for solar power plants in Thailand.

For 2021, the Group of Companies recorded operating revenue from solar power plants in Thailand of THB 3,168.4 million, rose by 6.2% YoY in line with higher electricity generation growth thanks to recognition of the full year contribution of the 4 new solar power plants in Thailand (20MW), which the Group of the Companies has acquired since August 2020, and the efficiency improvement program of solar power plants in Thailand.

Wind



In Q4/2021, the Group of Companies recorded operating revenue from a wind power plant in Thailand of THB 20.5 million, dropped by 3.0% YoY and 17.9% QoQ. These were resulted from the following factors.

YoY

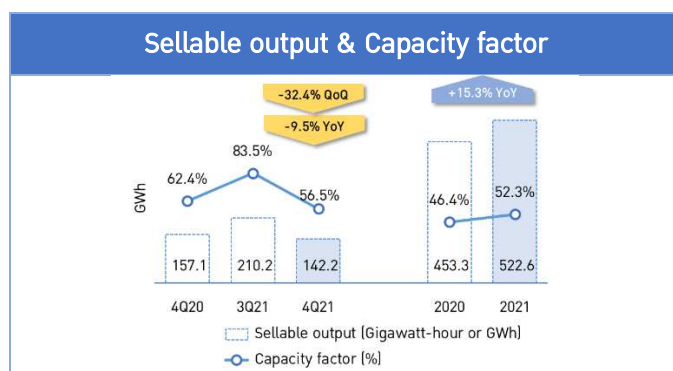
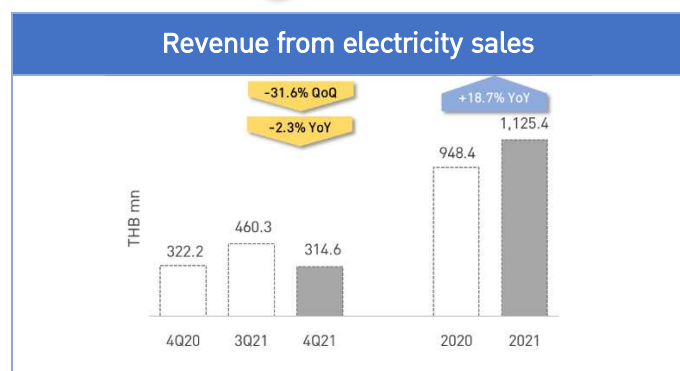
(-) Electricity generation fell by 3.0% YoY to 3.3 GWh. Capacity factor decreased to 15.0% from 15.5% in 4Q/2020, mainly came from the lower wind speed at the project.

QoQ

(-) Electricity generation dropped 16.3% QoQ. Capacity factor declined from 17.9% in 3Q/2021, which was the result of seasonal effect.

For 2021, the Group of Companies recorded operating revenue from a wind power plant in Thailand of THB 83.6 million, increased by 14.0% YoY. This mainly came from higher wind speed at the project, which led to higher capacity factor to 15.3% from 13.3% in 2020.

Subsidiaries: Laos 



In 2021, the Group of Companies recorded operating revenue from hydropower plants in Laos of THB 314.6 million, subsided by 2.3% YoY and 31.6% QoQ. These were resulted from the following factors.

YoY

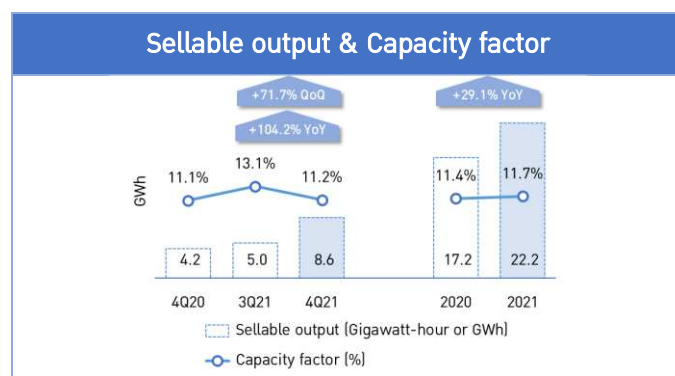
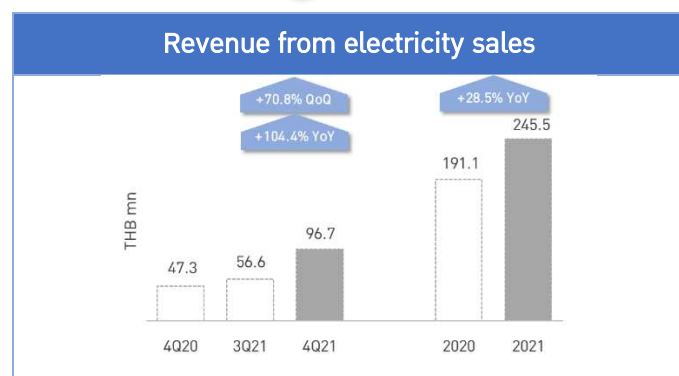
(-) Electricity generation reduced by 9.5% YoY to 142.2 GWh, resulting from decreasing of the capacity factor of “Nam San 3A” and “Nam San 3B” to 56.5% from 62.4% in Q4/2020 due to less rainfall.

QoQ

(-) Electricity generation fell by 32.4%, owing to seasonal factor of hydropower plants, which is normally high season in quarter 3.

For 2021, the Group of Companies recorded operating revenue from hydropower plants in Laos of THB 1,125.4 million, increased by 18.7% YoY. This mainly resulted by the full year contribution of “Nam San 3B”, which the Group of the Companies has acquired since February 2020 and higher capacity factor of “Nam San 3A” and “Nam San 3B” from higher rainfall.

Subsidiaries: Japan 



In Q4/2021, the operating revenue from solar power plants in Japan reported at THB 96.7 million, increased by 104.4% YoY and 70.8% QoQ. These were resulted from the following factors.

YoY

(+) Electricity generation rose by 104.2% YoY, owing to the commercial operation of a new solar power plant (Chia 1) in Japan with the contracted capacity of 20.0 MW in November 2021.

QoQ

(+) Electricity generation improved by 71.7% QoQ, thanks to the commercial operation of a new solar power plant (Chia 1) in Japan with the contracted capacity of 20.0 MW in November 2021.

For 2021, the operating revenue from solar power plants in Japan reported at THB 245.5 million, up by 28.5% YoY from the commercial operation of a new solar power plant (Chia 1) in Japan with the contracted capacity of 20.0 MW in November 2021.

Total Revenue from sale and rendering of services

In Q4/2021, total revenue was at THB 1,231.7 million, grew by 8.4% YoY but dropped 5.4% QoQ. These were resulted from the following factors.

YoY

(+) Higher revenue came from an increasing electricity generation of solar power plants in Thailand and solar power plants in Japan as mentioned.

QoQ

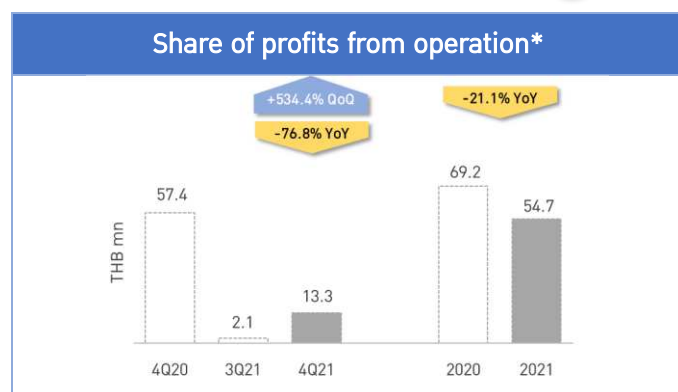
(-) Lower revenue came from a decreasing electricity generation of hydropower projects in Lao PDR and wind power project in Thailand as mentioned.

For 2021, total revenue was at THB 4,668.8 million, grew by 10.4% YoY thanks to higher electricity generation from all projects of the Group of the Companies as mentioned.

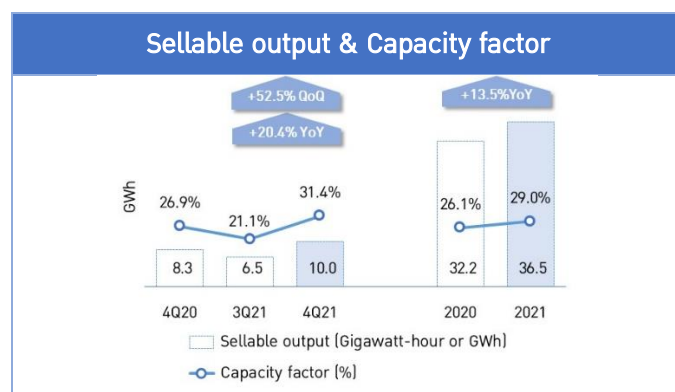
Share of profit of investment in associates

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	4Q20	4Q21	Δ YoY (%)	3Q21	Δ QoQ (%)	2020	2021	Δ YoY (%)
Share profits from operation	57.4	13.3	(76.8%)	2.1	534.4%	69.2	54.7	(21.1%)
(-) Amortization	(7.9)	(8.0)	(1.8%)	(7.5)	(7.6%)	(32.3)	(31.3)	3.1%
Share profits from operation (after amortization)	49.5	5.3	(89.4%)	(5.4)	197.9%	36.9	23.4	(36.7%)

In Q4/2021, the Group of Companies recorded share of profit from operation (after amortization) of THB 5.3 million, decreased by 89.4% YoY, but grew by 197.9% QoQ. These were resulted from the following factors.

YoY

(-) In Q4/2020 the wind project in the Philippines received 5-years retroactive payment (2016 – 2020); however, there was no such transaction booked in Q4/2021.

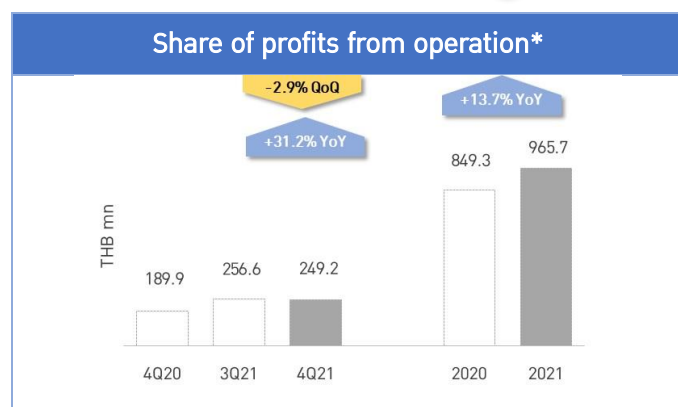
(+) Capacity factor improved to 31.4% from 26.9% in Q4/2020, leading the electricity generation grew by 20.4% YoY to 10.0 GWh. This was resulted from better wind speed at the project compared to the same period last year.

QoQ

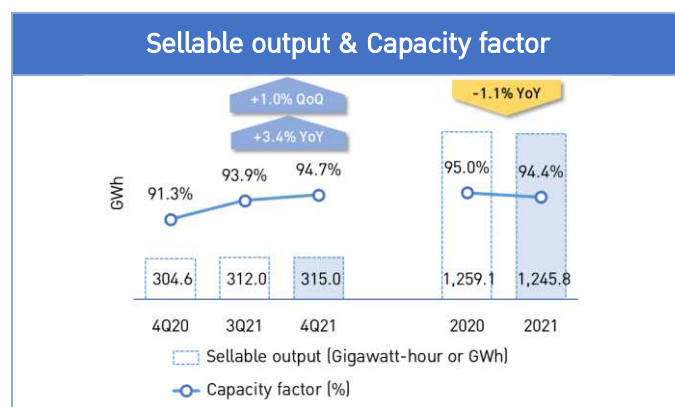
(+) Electricity generation grew by 52.5% QoQ as the capacity factor rose from 21.1% in Q3/2021, which was caused by the high season of wind power plant in the Philippines.

For 2021, the Group of Companies reported share of profits from operation (after amortization) of THB 23.4 million, decreased by 36.7% YoY. This mainly came from the 5-years retroactive payment recorded in 2020, even though the electricity generation improved by 13.5% from the better wind speed at the project.

Investment in associates: Indonesia 



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



*Sellable output calculation according to holding stake

Unit: THB million	4Q20	4Q21	Δ YoY (%)	3Q21	Δ QoQ (%)	2020	2021	Δ YoY (%)
Share profits from operation	189.9	249.2	31.2%	256.6	(2.9%)	849.3	965.7	13.7%
(-) Amortization	(92.5)	(102.3)	10.6%	(100.9)	1.3%	(378.0)	(389.1)	2.9%
Share profits from operation (after amortization)	97.4	146.9	50.8%	155.7	(5.6%)	471.3	576.6	22.3%

In Q4/2021, the Group of Companies recorded a share of profits from operation (after amortization) of THB 146.9 million, which increased by 50.8% YoY but decreased by 5.6% QoQ. These were resulted from the following factors.

YoY

(+) Tariff rate rose by 6.7% YoY and the electricity generation grew by 3.4% YoY to 315.0 GWh as capacity factor improved from 91.3% in Q4/2020 to 94.7% in Q4/2021 due to less shutdown days.

QoQ

(-) Higher operational expenses from the open of new production well in Q4/2021.

(+) Tariff rate increased by 2.1% QoQ and the electricity generation rose by 1.0% QoQ as capacity factor improved from 93.9% in Q3/2021 to 94.4% in Q4/2021, owing to less shutdown days.

For 2021, the Group of Companies recorded a share of profits from operation (after amortization) of THB 576.6 million, up 22.3% YoY thanks to higher tariff rate by 3.8% YoY and lower finance cost.

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

<i>Unit: THB million</i>	4Q20	4Q21	Δ YoY (%)	3Q21	Δ QoQ (%)	2020	2021	Δ YoY (%)
Share profits from operation	247.3	262.5	6.1%	258.7	1.5%	918.5	1,020.4	11.1%
(-) Amortization	(100.4)	(110.3)	9.9%	(108.4)	1.8%	(410.3)	(420.4)	2.5%
Share profits from operation (after amortization)	147.0	152.2	3.6%	150.3	1.3%	508.2	600.0	18.1%

In Q4/2021, the Group of Companies recorded a share of profits from investment in associates (after amortization and before one-time items) of THB 152.2 million, improved both YoY and QoQ by 3.6% and 1.3% respectively. These were resulted from the following factors.

YoY	QoQ
(+) Higher in share of profit of geothermal power plants in Indonesia from higher tariff rate and lower finance cost.	(+) Higher in share of profits of wind power plant in the Philippines, thanks to the seasonal effect.

For 2021, the Group of Companies recorded share of profits from investment in associates (after amortization and before one-time items) of THB 600.0 million, up 18.1% YoY. This mainly came from higher in share of profits of geothermal power plants in Indonesia as mentioned.

EBITDA from operation

In Q4/2021, EBITDA from the operation was THB 1,099.4 million, increased by 6.7% YoY but dropped 9.4% QoQ. These were resulted from the following factors.

YoY	QoQ
(+) Higher total revenue from solar power plants in Thailand and solar power plants in Japan as mentioned.	(-) Lower total revenue from hydropower plants in Lao PDR and wind power project in Thailand as mentioned.
(+) Higher share of profits from geothermal power plants in Indonesia as mentioned.	(-) Higher in administrative expenses

For 2021, EBITDA from the operation was THB 4,252.8 million, rose by 10.5% YoY due to better performance of projects in Thailand, in Lao PDR, in Japan and in Indonesia as mentioned.

Administrative expense

In Q4/2021, administrative expense excluding one-time item related to consult fee for transmission line investment was at THB 170.4 million, up by 9.4% YoY and 29.5% QoQ. These were resulted from the following factors.

YoY

(-) Higher personnel costs following the business expansion.

QoQ

(+) expenses related to employee benefits in the fourth quarter are generally higher than in the third quarter.

For 2021, administrative expense excluding one-time item related to consult fee for transmission line investment was THB 588.4 million, rose by 10.6% YoY from higher personnel expenses, which increased following the business growth, and higher expenses from ESOP program.

SG&A to sale ratio in Q4/2021 was higher than Q4/2020 but remained at similar level to Q3/2021. Meanwhile, SG&A to sale ratio in 2021 was close to 2020 level.

Unit: %	4Q20	3Q21	4Q21	2020	2021
SG&A / Sales	13.7	10.1	13.8	12.6	12.6

One-time items

In Q4/2021, the Group of Companies has one-time items as follows.

	4Q20	4Q21	3Q21	2020	2021
Total one-time items:	(225.2)	(344.9)	(24.1)	(47.1)	(273.5)
FX gain/(loss)	(69.2)	(245.9)	177.2	215.6	34.3
Tax related to Gain/(loss) on foreign exchange	6.1	17.8	(44.5)	(11.7)	(17.5)
Expenses related to refinancing under share of profit from investment in associates	(171.5)	0.0	0.0	(171.5)	0.0
Tax saving from net investment hedge	0.0	8.9	(9.0)	0.0	(0.1)
Expenses related to refinancing	(171.5)	0.0	(107.8)	(171.5)	(107.8)
Loss from disposal and impairment of assets	0.0	(43.6)	(48.3)	0.0	(94.1)
Consult fee for transmission line investment	0.0	(66.7)	0.0	0.0	(66.7)
Other one-time item	9.4	(15.5)	(0.8)	(79.5)	(21.6)

Gain/(loss) from foreign exchange

In Q4/2021, the Group of Companies booked FX loss of THB 245.9 million. This came from the Group of the Companies' assets, which dominated in foreign currency, have decreased value following the depreciation of foreign currency against THB in Q4/2021. As a result, the loss from translation was recorded.

YoY

(-) FX loss of THB 69.2 million in Q4/2020 occurred from the depreciation of foreign currency against THB in the quarter.

QoQ

(-) FX loss of THB 177.2 million in Q3/2021 occurred from the appreciation of foreign currency against THB.

For 2021, the Group of Companies booked net FX gain of THB 34.3 million. This was resulted from the appreciation of foreign currency against THB, which raised the value of the Group of the Companies assets that use foreign currency as a functioning currency. However, the Group of Companies reported net FX gain of THB 284.7 million.

One-time expenses related to refinancing

In 3Q/2021, the Group of Companies recorded expenses related to refinancing of THB 107.8 million, with some of the expenses being non-cash. After the refinancing, the Group of Companies reported a higher proportion of fixed rate of interest-bearing debt, which reduces interest rate risk that might occur in the future. Furthermore, the longer loan life to maturity of interest-bearing debt improves cash management efficiency as well as enhances future investment capabilities. However, there was no such transaction in Q4/2021. Meanwhile, the Group of Companies realized expenses related to refinance of geothermal power plants in Indonesia of THB 171.5 million in Q4/2020.

One-time expenses from asset disposal

In 4Q/2021, the Group of Companies recorded loss from asset disposal of THB 45.2 million. The loss from asset disposal occurred from the sales of some obsolete equipment of solar power projects in Thailand after changing to a tracking system following an efficiency improvement plan. For 2021, the Group of Companies recorded loss from asset disposal of THB 97.8 million.

One-time expenses related to consult fee for transmission line investment

In Q4/2021, the Group of Companies reported expenses related to consult fee for transmission line investment in Lao PDR of THB 66.7 million. From this investment, BCPG Indochina (The Group of Companies' subsidiary) will obtain the rights to develop 220 kV transmission line and operate substation from Nam Tai hydropower plant, connecting the transmission line in Lao PRD to Vietnam at Lao-Vietnam border.

Finance cost

In Q4/2021, the Group of Companies recorded finance cost of THB 210.8 million, increased by 4.4% YoY and 6.3% QoQ. These were resulted from the following factors.

YoY	QoQ
(-) Higher amount of interest-bearing debt.	(-) Higher amount of interest-bearing debt.

For 2021, the Group of Companies recorded finance cost excluding expenses related refinancing of THB 787.4 million, declined by 3.9% YoY. This came from declining of market interest rate resulted in floating rate loan portion had lower finance cost.

The average finance cost in Q4/2021 was relatively similar to Q4/2020 and Q3/2021. Meanwhile the average finance cost in 2021 was lower from 2020.

Unit: %	4Q20	3Q21	4Q21	2020	2021
Average finance costs*	2.90	2.88	2.89	3.14	2.90

** Remarks: The average finance costs calculated by an average of the interest-bearing debt of that period excluding expenses related refinancing.*

Recurring net profit

In Q4/2021, the Group of Companies recorded recurring net profit (excluding one-time items) of THB 582.6 million, grew by 8.7% YoY but dropped 17.8% QoQ. These were resulted from the following factors.

YoY	QoQ
(+) Higher revenue contribution from solar power plants in Thailand and Japan as mentioned.	(-) Lower revenue contribution from hydropower projects in Lao PDR and wind power project in Thailand as mentioned.
(+) Higher share of profit from geothermal power plants in Indonesia as mentioned.	(-) Lower share of profit from geothermal power plants in Indonesia as mentioned.
	(-) Higher administrative expenses

For 2021, the Group of Companies recorded recurring net profit (excluding one-time items) of THB 2,284.3 million, grew by 16.6% YoY. This came from the recognition of full-year contribution from the new projects, better contribution from existing power plants and receiving tariff escalation as mentioned.

Net profit

In Q4/2021, the Group of Companies recorded net profit of THB 237.7 million, declined by 23.5% YoY and 65.3% QoQ. The difference of recurring net profit and net profit was resulted by one-time items as follow.

YoY	QoQ
(-) Higher total one-time expenses of THB 344.9 million in Q4/2021, compared to Q4/2020 that recorded the total one-time expenses of THB 225.2 million. As a result, the net profit growth was lower the recurring net profit growth.	(-) Higher total one-time expenses of THB 344.9 million in Q4/2021, compared to Q3/2021 that recorded the total one-time expenses of 24.1 million. As a result, the net profit growth was lower the recurring net profit growth.

For 2021, the Group of Companies reported net profit of THB 2,010.8 million, up by 5.2% YoY. With the total one-time expenses recorded in 2021 and 2020 of THB 273.5 million and 47.1 million, the net profit growth was lower than the recurring net profit growth.

Financial Position

Financial position analysis as of 30 December 2021

Unit: THB million	2020	% of total assets	2021	% of total assets	Δ (%)
Cash and cash equivalents	11,138.3	21.7%	11,227.7	19.1%	0.8%
Current investments	4.6	0.0%	0.0	0.0%	(100.0%)
Trade accounts receivables	1,219.2	2.4%	2,316.7	3.9%	90.0%
Other current assets	130.9	0.3%	388.6	0.7%	196.9%
Total current assets	12,492.9	24.4%	13,932.9	23.7%	11.5%
Investments in associate & subsidiaries	11,722.8	22.9%	13,485.8	23.0%	15.0%
Property, plant and equipment	14,667.8	28.6%	17,371.8	29.6%	18.4%
Goodwill and Intangible assets	11,313.7	22.1%	11,809.6	20.1%	4.4%
Other non-current assets	1,022.4	2.0%	2,121.1	3.6%	107.5%
Total non-current assets	38,726.6	75.6%	44,788.3	76.3%	15.7%
Total Assets	51,219.6	100.0%	58,721.2	100.0%	14.6%
Short-term borrowings	1,770.6	3.5%	0.0	0.0%	(100.0%)
Current portions of long-term borrowings	1,701.0	3.3%	3,575.4	6.1%	110.2%
Long-term borrowings	23,589.7	46.1%	13,995.5	23.8%	(40.7%)
Debentures	0.0	0.0%	11,984.6	20.4%	n.a.
Other liabilities	1,609.3	3.1%	1,937.6	3.3%	20.4%
Total liabilities	28,670.6	56.0%	31,493.1	53.6%	9.8%
Equity attributable to owners of the Company	22,480.1	43.9%	27,159.7	46.3%	20.8%
Non-controlling interests	68.8	0.1%	68.5	0.1%	(0.5%)
Total liabilities and Equity	51,219.6	100.0%	58,721.2	100.0%	14.6%

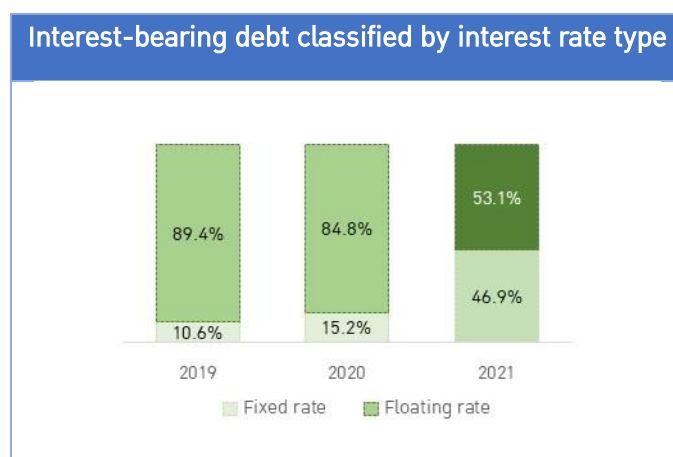
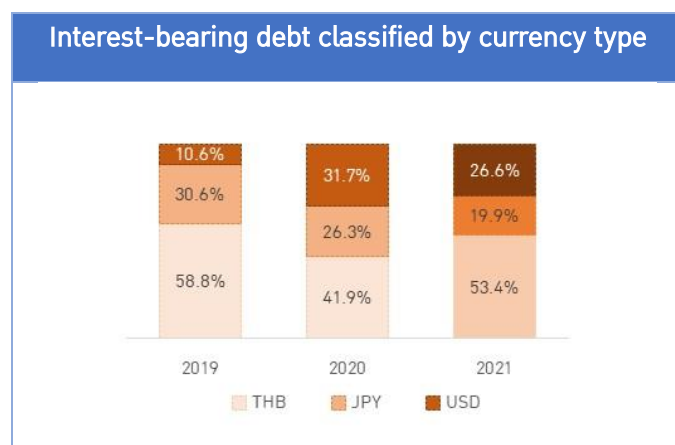
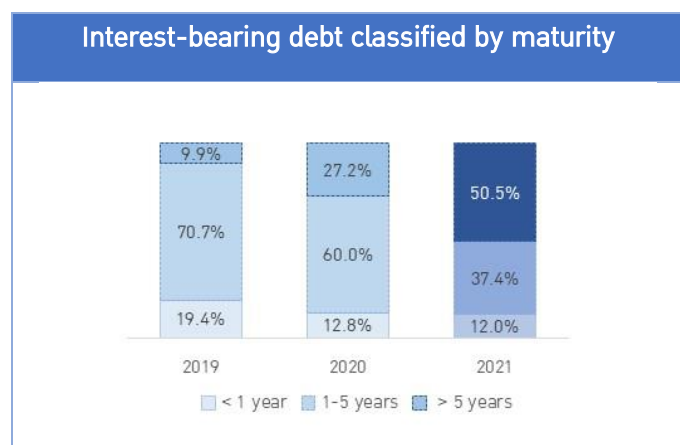
Asset

Total assets were 58,721.2 million, grew by 14.6% YoY from an increase of investment in associates and subsidiaries, and the higher of property, plant and equipment, which was mainly improved from the development of new projects in Japan.

Liability

Total liabilities were THB 31,493.1 million, rising by 9.8% from the end of 2020. This was primarily due to the Green Bonds issuance in September 2021 for refinance the original loans and support investments in the future.

Interest-bearing debt classified by maturity, currency type, and interest rate type are as follows:



In 2021, the Group of Companies issued Green Bond with a total value of THB 12,000 million. Most of the proceeds were used to refinance some existing bank loans. As a result, the portion of interest-bearing debts with a maturity over 5 years grew to 50.5% from 27.2% as of ending 2020. Also, when considering interest-bearing debts classified by interest rate type, the proportion of fixed-rate amounts improved to 46.9% from 15.2% as of ending 2020. At the meantime, the proportion of interest-bearing debts in THB increased to 53.4% from 41.9% as of ending 2020.

Equity

Equity attributable to owners of the group of companies worth THB 27,159.7 million, increased by 20.8% YoY, following the growth of operating performance.

Cash Flow Statement

Cash flow statement analysis as of 30 December 2021

Unit: THB million	2020	2021	Δ YoY
Net cash from (used in) operating activities	3,079.0	2,467.3	(611.7)
Net cash from (used in) investing activities	(5,309.3)	(4,458.6)	850.7
Net cash from (repay to) financing activities	12,068.1	1,425.0	(10,643.1)
Net increase in cash and cash equivalents	9,837.8	(566.3)	(10,404.1)
Cash and cash equivalents at 1 January	1,445.2	11,138.3	9,693.1
Effect of exchange rate changes on balances held in foreign currencies	(144.7)	235.2	379.9
Cash and cash equivalents at end period	11,138.3	10,807.2	(331.1)
CAPEX	(6,052.3)	(3,694.7)	2,357.7

For 2021, net cash flow from operating activities was THB 2,467.3 million. Meanwhile, net cash flow used in investing activities was THB 4,458.6 million, mainly from the development of solar power projects in Japan, an investment in VRB Energy and the investment in the projects in Taiwan. Net cash flow received from financing activities was THB 1,425.0 million, primarily from the refinancing of loans from financial institutions with the proceeds from Green Bonds issuance. As a result, cash and cash equivalents as of 31 December 2021 were at THB 10,807.2 million.

Key Financial Ratio

Key financial ratio analysis as of 30 December 2021

	2020	2021	Δ%
Profitability ratio			
Gross profit margin (%)	66.1	65.6	(0.5)
EBITDA margin (%) *	81.2	80.7	(0.5)
Net profit margin (%)	45.2	43.1	(2.1)
ROE (%) (Annualized)	10.0	8.1	(1.9)
ROA (%) (Annualized)	4.3	3.7	(0.6)
Liquidity ratio			
Current ratio (x)	3.1	3.0	(0.1)
Account receivable turnover (x)	4.8	2.7	(2.1)
Average collection period (days)	75.8	135.2	(59.4)
Leverage ratio			
Interest-bearing debt/equity (x)	1.2	1.1	(0.1)
Net interest-bearing debt/equity (x)	0.7	0.7	0.0
Total liability/equity (x)	1.3	1.1	(0.2)

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

Profitability ratio

The gross profit margin for 2021 was 65.6%, decreasing YoY from the adder expiration of BCPG 1 project. The EBITDA margin was 80.7 %, dropped YoY from the higher SG&A expenses, but this was in line with the gross profit margin. Net profit margin was 43.1%, declined YoY from the one-time items as mentioned.

Liquidity ratio

The Group of Companies specifies credit terms of no more than 60 days for trade receivables. As of 31 December 2021, 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.

The average collection period for 2021 increased from 2020, as electricity payments for 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 differed from the Group of Companies practices in the past. However, the Group of Companies closely monitored EDL debt collection and still received payment from EDL continuously. In addition, the hydro power plants have a Power Purchase Agreement (PPA) with EVN, which will begin selling electricity within 2022. This would lessen the average collection period and receive normal payment.

Leverage ratio

Interest-bearing debt to equity ratio for 2021 was 1.1 times, remained at the similar level to 1.2 times in 2020.

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 53% of the group of companies is 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. Recently, the Group of the Companies issued debenture in THB with values of THB 1.2 billion and repaid existing loans which mostly was floating-rate loan, and some are in foreign currency. Therefore, this could reduce the risk of interest rate and the exchange rate for interest bearing debt.

(+/-) 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	4Q20	4Q21	Δ (%)	3Q21	Δ (%)	2020	2021	Δ (%)
Total production	238,250	234,220	(1.7%)	294,521	(20.5%)	772,639	875,210	13.3%
Production - Thailand (Solar)	73,495	80,095	9.0%	75,304	6.4%	290,457	317,030	9.1%
Production - Adder	62,817	68,246	8.6%	63,826	6.9%	250,744	269,663	7.5%
Tariff (Incl. adder) (THB-kWh)	11.02	10.77	(2.3%)	10.89	(1.1%)	11.16	10.94	(2.0%)
Production - FIT 5.66	6,324	6,530	3.3%	6,349	2.9%	21,872	26,152	19.6%
Feed in Tariff (THB-kWh)	5.66	5.66	0.0%	5.50	3.0%	5.66	5.66	0.0%
Production - FIT 4.12	3,068	3,248	5.9%	3,177	2.2%	13,471	13,438	(0.2%)
Feed in Tariff (THB-kWh)	4.12	4.12	0.0%	4.12	0.0%	4.12	4.12	0.0%
Public solar	1,286	2,071	61.0%	1,952	6.1%	4,371	7,777	77.9%
Feed in Tariff (THB-kWh)	2.97	2.86	(3.5%)	2.90	(1.2%)	2.98	2.91	(2.6%)
Production - Thailand (Wind)	3,408	3,307	(3.0%)	3,953	(16.3%)	11,663	13,392	14.8%
Tariff (Incl. adder) (THB-kWh)	6.20	6.20	(0.0%)	6.31	(1.9%)	6.28	6.24	(0.7%)
Production - Japan (Solar)	4,224	8,626	104.2%	5,024	71.7%	17,203	22,215	29.1%
Feed in Tariff (JPY-kWh)	38.21	37.53	(1.8%)	37.87	(0.9%)	37.80	37.63	(0.4%)
Production - Laos (Hydro)	157,124	142,191	(9.5%)	210,240	(32.4%)	453,316	522,573	15.3%
Feed in Tariff (US cents-kWh)	6.70	6.63	(1.0%)	6.65	(0.3%)	6.71	6.65	(0.9%)

Revenue structure of each power plants

Unit: THB million	4Q20	4Q21	Δ (%)	3Q21	Δ (%)	2020	2021	Δ (%)
1. Revenue - Thailand (Solar)	736.4	783.6	6.4%	748.6	4.7%	2,982.8	3,168.4	6.2%
2. Revenue - Thailand (Wind)	21.1	20.5	(3.0%)	25.0	(17.9%)	73.3	83.6	5646.0%
3. Revenue - Japan (Solar)	47.3	96.7	104.4%	56.6	70.8%	191.1	245.5	28.5%
4. Revenue - Laos PDR (Hydro)	322.2	314.6	(2.3%)	460.3	(31.6%)	948.4	1,125.4	18.7%
5. Other operating income	9.7	16.3	68.0%	11.8	38.5%	35.1	46.0	31.1%
Total revenue	1,136.7	1,231.7	8.4%	1,302.3	(5.4%)	4,230.6	4,668.8	10.4%

Net share profits from investment in associates

<i>Unit: THB million</i>	4Q20	4Q21	Δ YoY (%)	3Q21	Δ QoQ (%)	2020	2021	Δ YoY (%)
Share profits from operation	247.3	262.5	6.1%	258.7	1.5%	918.5	1,020.4	11.1%
(-) Amortization	(100.4)	(110.3)	9.9%	(108.4)	1.8%	(410.3)	(420.4)	2.5%
Share profits from operation (after amortization)	147.0	152.2	3.6%	150.3	1.3%	508.2	600.0	18.1%
(+/-) One-time item								
<i>Amortization of deferred issuance cost from refinancing</i>	<i>(171.5)</i>	<i>-</i>	<i>NA</i>	<i>-</i>	<i>NA</i>	<i>(171.5)</i>	<i>-</i>	<i>NA</i>
<i>Tax provision</i>	<i>-</i>	<i>-</i>	<i>NA</i>	<i>-</i>	<i>NA</i>	<i>(23.9)</i>	<i>-</i>	<i>NA</i>
<i>Allowance for account receivable</i>	<i>-</i>	<i>-</i>	<i>NA</i>	<i>-</i>	<i>NA</i>	<i>(42.8)</i>	<i>-</i>	<i>NA</i>
Net share profits	(24.5)	152.2	(720.3%)	150.3	1.3%	270.1	600.0	122.2%

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' 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.