

MANAGEMENT DISCUSSION & ANALYSIS (MD&A)

Q4/2018
and FY2018



GLOBAL POWER SYNERGY
PUBLIC COMPANY LIMITED

THE INNOVATIVE
POWER FLAGSHIP
OF PTT GROUP

Executive Summary



Executive Summary

Operating highlight in Q4/2018 and 2018

Operating highlight in Q4/2018 and 2018	Q4/17	Q3/18	Q4/18	Change +/(-)		2017	2018	Change +/(-)
(THB million)				QoQ	YoY			YoY
Operating revenue	4,849	6,661	5,837	(12%)	20%	19,917	24,777	24%
Gross profit	1,315	1,606	1,264	(21%)	(4%)	4,868	6,351	30%
EBITDA	1,137	1,371	974	(29%)	(14%)	4,187	5,457	30%
EBIT	754	898	505	(44%)	(33%)	2,836	3,655	29%
Other non-operating income and expenses	36	199	73	(63%)	n/a	710	411	(42%)
Shares of profit of associates and joint ventures	152	131	157	20%	4%	517	595	15%
Net profit for the company	722	899	486	(46%)	(33%)	3,175	3,359	6%
Gross profit margin* (%)	27%	24%	22%	(2%)	(5%)	24%	26%	2%
Net profit margin (%)	15%	13%	8%	(5%)	(7%)	16%	14%	(2%)

* Exclude costs of depreciation and amortization

Q4/2018 and 2018 Financial and Operating Highlights

For 2018, Global Power Synergy Public Company Limited (GPSC) (“the company”) earned a net profit of Baht 3,359 million, slightly increased by Baht 184 million or 6% from 2017.

The increase was due to a slight increase in gross profit of Rayong Central Utility Plants from higher sale prices and sale volume of electricity and steam from higher demand of industrial users as they expanded production capacities. Furthermore, IRPC Clean Power Company Limited (IRPC-CP) started Commercial

Operation Date (COD) of two phases in November 2017 and Ichinoseki Solar Power 1 GK (ISP1) started in December 2017. The share of profits of associates and joint ventures in 2018 also increased by Baht 78 million or 15% from 2017 because Bangpa-In Cogeneration Company Limited Phase 2 (BIC2) had started COD in June 2017 and higher income from the concession according to TFRIC12 of Nam Lik 1 Power Company Limited (NL1PC). However, the company’s net profit in 2018 did not increase significantly because natural gas prices had increased substantially in the second half of 2018 while the Fuel tariff rate (Ft) almost the same level, slightly increased. Moreover, there were major overhaul maintenance of Sriracha plant and planned maintenance of IRPC-CP, plus the drop in dividend income from Ratchaburi Power Company Limited (RPCL) as Independent Power Producer (IPP) has a declining revenue trend.

The company’s net profit in Q4/2018 was Baht 486 million, decreased by Baht 413 million or 46% from Q3/2018 due to the significant rise of natural gas prices while the Ft rate did not increase correspondingly to reflect the higher cost, which impacted the gross profit of Rayong Central Utility Plants and IRPC-CP. Also, the revenue from Availability Payment (AP) of Sriracha Power Plant declined from lower seasonal Weight factor. In addition, Sriracha Power Plant and IRPC-CP had maintenance shutdown in Q4/2018.

"Electricity and Steam sales volume increased due to the expansion of power generating capacity after start-up of IRPC-CP (Phase 2) and ISP1 in Q4/2017"

Comparing to Q4/2017, the net profit of Q4/2018 decreased by Baht 236 million or 33% as a result of the rise in natural gas prices while the Ft rate remained unchanged. Also, Sriracha Power Plant and IRPC-CP had maintenance shutdown in Q4/2018.

The operating revenue in Q4/2018 was at Baht 5,837 million, decreased by Baht 824 million or 12% from Q3/2018. The decrease was mainly from the maintenance shutdown of Sriracha and IRPC-CP plants in Q4/2018. Comparing to 2017, the operating revenue in Q4/2018 increased by Baht 988 million or 20% from Q4/2017. The operating revenue of 2018 was at Baht 24,777 million, significantly increased by Baht 4,860 million or 24% from 2017 from the increase in sales of IRPC-CP and ISP1 after start-up operation in Q4/2017 and the increase in revenue of the Combine Heat and Power Producing Company Limited (CHPP) from solar panel installation services on gas station, buildings and distribution center of PTT Group companies.

Financial position: As of 31 December 2018, the company and its subsidiaries' total assets increased by Baht 4,471 million or 7% from 31 December 2017, as a result of asset recognition from the construction of Rayong Central Utility Plant 4 (CUP-4) and the additional paid up in the capital of company's related parties. Moreover, for the year 2018, the company and its subsidiaries had net cash received for Baht 1,752 million. The details are as follows:

- **Net cash flow from operating activities** of Baht 6,108 million.
- **Net cash used in investing activities** of Baht 3,608 million incorporated from the construction payment of Baht 3,220 million, the payment for additional capital of the related parties of Baht 1,068 million and loan to related companies of Baht 88 million. However, the company gained dividend income from affiliates of Baht 696 million and net cash flow from other investing activities of Baht 72 million.
- **Net cash used in financing activities** of Baht 716 million resulting from dividend payment.

Performance of the operating power plants in Q4/2018 compared to Q3/2018 (QoQ)

- **Sriracha Power Plant:** Total revenue in Q4/2018 decreased by Baht 984 million or 72% due to the decrease in revenue from Availability Payment (AP) resulting from lower Weight factor during cool season and the major overhaul maintenance shutdown in Q4/2018. Accordingly, the gross profit dropped by Baht 239 million.
- **Rayong Central Utility Plants:** Total revenue in Q4/2018 increased by Baht 137 million or 4% due to the increase in electricity and steam sales volume. However, natural gas prices increased while Ft rate remained unchanged, thereby the gross profit in Q4/2018 declined by Baht 36 million or 4%.
- **IRPC Clean Power (IRPC-CP):** Total revenue in Q4/2018 increased by Baht 37 million or 2% due to higher electricity and steam sales price, which was in line with the increase in natural gas prices. However, the rise in natural gas prices with constant Ft rate, and maintenance shutdown in Q4/2018 resulted the drop in gross profit by Baht 36 million or 7%.
- **Ichinoseki Solar Power 1 GK (ISP1):** The revenue in Q4/2018 decreased by Baht 32 million or 37%, due to less solar intensity in Japan in Q4/2018 than in Q3/2018, resulting in lower electricity sales volume and lower gross profit by Baht 32 million or 42%.

Significant Events in Q4/2018

• **Progress Report on Acquisition of GLOW Energy Public Company Limited (GLOW)**

On December 18th, 2018, the company submitted a new application to the Energy Regulatory Commission (ERC) for Glow Energy Public Company Limited (GLOW) share acquisition transaction. The Company has restructured the proposed transaction to be explicit for problem-solving in terms of reducing competition in the Map Ta Phut area. Subsequently on December 26th, 2018, the ERC had approved the transaction in principle. The approval of ERC is granted subject to a condition precedent that GLOW must sell Glow SPP 1 Co., Ltd. (SPP1) before or at the same time as the merger of the company and GLOW. Accordingly, on this same day, the company and Engie Global Developments B.V. have entered into the agreement for amendment to the Share Purchase Agreement on June 20th, 2018, by including the sale of SPP1 as an additional condition precedent of the Share Purchase Agreement to be in accordance with the resolution of ERC. After the company purchases the shares, and it will make a tender offer for all of the remaining shares upon the completion of the sale of SPP1. Currently, the condition precedent under the Share Purchase Agreement has not yet been satisfied.

The company is collaborating with GLOW on relevant issues to reflect all necessary changes in the contractual documentation including the adjustment of the tender price of GLOW's shares as a result of this additional condition precedent. The price will be adjusted downwardly from Baht 94.892 per share, subject to the expenses that shall be incurred from the selling of SPP1, reduced synergy impact without SPP1. The company anticipates that the relevant issues should be resolved and the purchase of GLOW shares should be completed by the first quarter of 2019.

• **Entering into Share Purchase Agreement to acquire Solar Power Plants**

On December 7th, 2018, the company has entered into the share purchase agreement to acquire 100% shares of the target companies, which consist of N.P.S. Stargroup Co., Ltd., World X Change Asia Co., Ltd., and P.P. Solar Co., Ltd., that operate solar power generation business in Thailand. The plants have a total power generation capacity of 39.5 Megawatts and TerraForm Global Operating (Thailand) Co., Ltd., that provide operation and maintenance service for solar power plants. The group of companies of the seller, which is the group of Brookfield Renewable Partners, is a global operator of renewable energy business. The total value of the transaction is approximately Baht 3,070 million including the acceptance of the assignment of rights under the loan agreements from the original shareholders, whereas the final acquisition price may be adjusted due to some factors. In this respect, this share purchase transaction will take place after approval of the related governmental agency and satisfaction of the conditions precedent under the share purchase agreement. The completion of this transaction is expected to be in the first quarter of 2019 and the revenue recognition to GPSC will be consolidated in the second quarter of 2019. The funds are from the working capital of the company or the loan from financial institution. After the transaction, the target companies will have the status as the subsidiaries of GPSC.

GPSC's acquisition of solar power plants was in accordance to the growth strategy of the company to expanded the renewable power business and to enhance the value from solar power expertise of the company. In addition, solar plants have long-term power purchase agreements, which will continuously generate stable revenues which will support GPSC to have sustainable growth.

Significant Events in Q4/2018

- **GPSC's investment in the "Energy Recovery Unit" with Thai Oil Public Company Limited following "Growth along with PTT Group" strategy**

The company conducted studies with Thai Oil Public Company Limited (Thai Oil) to seek for business expansion. On January 21st, 2019, the company's Board of Directors has approved the investment in the Energy Recovery Unit (ERU) that has an installed capacity of electricity and steam of approximately 250 Megawatts and 175 Tons per hour, respectively. The ERU project has a total value of not exceeding USD 757 million (The value was appraised by technical advisor, where construction cost and other expenses totaling to USD 688 million or called "Initial Purchase Price" plus Contingency amount to 10% of the Initial Purchase Price which totaling to USD 69 million). The purpose of the ERU project is to supply power and steam for use in the Clean Fuel Project (CFP) of Thai Oil, by using petroleum pitch as a fuel. During the construction period, GPSC will make an initial payment equals to 20% of the Initial Purchase Price, payable in 4 installments within four years, whereby the remaining amount will be payable to Thai Oil after the construction of the ERU is completed and the Provisional Acceptance Certificate (PAC) is issued under the CFP, which is anticipated to be in the third quarter of 2023. Moreover, the company will enter into other relevant agreements, i.e. the Asset Sale and Purchase Agreement, the Fuel and Utilities Supply Agreement, the Power Purchase Agreement, the Operation and Maintenance Services Agreement, and the Land Sub-Lease Agreement (collectively, the "Relevant Agreements") as well as a Novation Agreement and any other agreements, which are necessary and related to the asset sale for the acceptance of ownership transfer in the ERU Project. However, the company will be able to enter into the Asset Sale and Purchase Agreement with Thai Oil and the payment of the purchase price after both companies obtained the approval of their shareholders' meeting, in the 2019 Annual General Meeting of Shareholders, which to be held within April 2019. For source of fund, the company will use its internal cash flow and funding from other sources as necessary, such as financial institutions.

The investment in the ERU is consistent with the company's strategic plan that emphasizes on the Growth along with PTT Group strategy to become the true Power Flagship of the group, by leveraging GPSC's expertise in power business to extend power and utility production that use different type of fuels. The company will recognize the income in the future after the construction is completed, which will stabilize and strengthen the cash flow and the financial statements in a long-term. The investment in the ERU project will promote energy security, with the use of by-product (petroleum pitch) from the refinery process as fuel, coupled with the adoption of appropriate technology in management of by-products which is socially and environmentally friendly, efficient use of resources. The company will have capability that is different from other power producers; increasing its knowledge and personnel in operating power plants that use petroleum pitch as fuel; in the design, construction, management and the maintenance of such power plants.

Significant Events in Q4/2018

- **GPSC received two Excellence Awards from CFO Innovation Awards 2018**

On December 7th, 2018, the company was awarded with the CFO Innovation 2018 in two categories: the CFO of The Year Excellence in Technology to Mrs. Wanida Boonpiraks, and the Excellence in Treasury Management Transformation from CFO Innovation Magazine, Singapore. The awards reflect the company's endeavor in adopting new technology to improve efficiency that has been recognized internationally.

- **GPSC TOP 50 ASEAN PLCs In the 2nd ASEAN Corporate Governance Awards and Excellence Sustainability Report Award 2018**

On November 21th, 2018, the company was awarded to be the TOP 50 ASEAN PLCs in the 2nd ASEAN Corporate Governance Awards from Mr. Yang Berhormat Tuan Lim Guan Eng, the Malaysian Finance Minister, arranged by ASEAN Capital Markets Forum. The awards are given to organizations that are operated with good governance and transparency.

In addition, On December 7th, 2018, the company was awarded Sustainability Report Award 2018 in Excellence category, arranged by Thai Listed Companies Association, the Securities and Exchange Commission of Thailand (SEC) and Thaipat Institute. As the company has development in clear and thorough disclosure of sustainability information in terms of economic, social and environment, that meet global standard. Also, the company has set direction and goals relating to the Sustainable Development Goals (SDGs) of United Nation which emphasizes on granting benefits to stakeholders.

Q1/2019 Outlook and Business Directions

The outlook of the country in 2019, the forecasted GDP is at 4.0%, which is lower than forecasted GDP in 2018 at 4.2% due to the world economic slow down which is impacted by the slow down of developed countries, together with tensions from trade war between the United States and China. As a result, Thailand's export is foreseen to decline this year. However, household consumption will gradually recover, which is driven by low unemployment rate, a gradual recovery of income and government economic stimulus measures. Meanwhile, Thailand electricity usage in 11M/2018 was at 172,709 Gigawatt-Hours, increased by 1% from 11M/2017, due to the increase in the agricultural and business demand.

For the draft of the Power Development Plan (PDP) 2018, it includes the generating capacity of Independent Power Supply (IPS) which is the private power producers that produce electricity for their own usage or sell directly to customers, for example, the cogeneration power plant and solar rooftop. This inclusion will reflect the forecast to be more accurate than the past, that only included three main electricity generators; Electricity Generating Authority of Thailand (EGAT), Provincial Electricity Authority (PEA) and Metropolitan Electricity Authority (MEA). Moreover, in PDP 2015, the reserve margin was set according to dependable capacity which is at 15% of total electricity demand of the country. However, in PDP 2018, the reliable capacity is set to cover electricity demand of the whole country in case that the major power plants in each region have emergency shutdown. Meaning that the reliability in each region will be focused rather than concentrating on the Southern as in the past. Moreover, the proportion of gas-fired power plant (imported LNG) is increased, which is higher than in PDP 2015 that emphasized more on fuel diversification. It is anticipated that the bidding of gas-fired Independent Power Producer (IPP) will take place to replace upcoming retired capacities in the Western region.

On January 24th, 2019, National Energy Policy Council (NEPC) has approved the PDP 2018 after public hearing has already been done. It is summarized that total country capacity at the end of 2017 was at 46,090 Megawatts while 25,310 Megawatts of power plants will be retired during 2018-2037 and the adding capacity during 2018-2037 will be 56,431 Megawatts, thereby the total capacity at the end of 2037 will be 77,211 Megawatts. There are additional capacities on Cogeneration power plant of 2,112 Megawatts and floating solar and hydro power plant of 2,725 Megawatts. Furthermore, the NEPC also approved the guideline for the expiration of Small Power Producer (SPP) Cogeneration plants, by revising the expiration period to be during 2016-2018, in line with NEPC's resolution on May 30th, 2016. The 25 Firm-SPP Cogeneration plants, to be expired during 2016-2025, will be extendable or replaceable by using the same fuel as in the expired contract, and the purchase rate depends on fuel type. The ERC will consider the scheme of power plants that will expire during 2019-2021 based on NEPC's guidelines.

Q1/2019 Outlook and Business Directions

In Q1/2019, Rayong Central Utility Plants and IRPC Clean Power Company Limited (IRPC-CP) will have planned maintenance shutdown. In addition, natural gas prices in Q1/2019 are foreseen to rise from Q4/2018, which is in line with upward movement of the oil prices. The Ft rate during January-April increases by 4.30 Sa-tang per unit to be at -11.60 Sa-tang per unit, from -15.9 Sa-tang per unit during September-December. The increase of Ft is due to the effect of rising of fuel prices in electricity generation. However, a small increase was observed as the government tries to manage the costs to keep the electricity price low.

Three construction projects that will start commercial operation in 2019, including Rayong Central Utility Plant 4 (CUP-4), Xayaburi Power Company Limited (XPCL) and Nam Lik 1 Power Company Limited (NL1PC), the total equity capacity of 392 Megawatts will generate the revenue to GPSC in 2019. The update of projects under construction is shown on Page 31-32. Moreover, the company will recognize the revenue after completing two acquisitions including GLOW with 2,771 Megawatts and 39.5 Megawatts of solar power plants. In addition, the expansion of CUP-3 will add 15 Megawatts to the company in 2019 as well. Consequently, the equity operating capacity of GPSC will be added up by 3,218 Megawatts within 2019, resulting the total equity operating capacity of 4,748 Megawatts, rises from 1,530 Megawatts in 2018. Full year revenue recognition will be foreseen in 2020.

Furthermore, the construction plan of Lithium-ion battery pilot plant is under revision to align with PTT Group Electric Value Chain, which is aimed to increase efficiency of energy storage system business as a whole. For business plan of 24M Technologies, it is under the testing of quality and market capability. However, the rapid change of battery technology nowadays plus the numbers of new competitor in the market, highly priced-competitive environment, may slow down the company from entering the market.

Financial Performance



Operating Results

Overall operating results of the company and its subsidiaries (THB million)	Q4/17	Q3/18	Q4/18	Change +/(-)		2017	2018	Change +/(-) YoY
				QoQ	YoY			
Operating revenue	4,849	6,661	5,837	(12%)	20%	19,917	24,777	24%
Cost of sales (exclude depreciation and amortization)	(3,534)	(5,055)	(4,573)	(10%)	29%	(15,049)	(18,426)	22%
Gross profit	1,315	1,606	1,264	(21%)	(4%)	4,868	6,351	30%
Selling and administrative expenses	(181)	(238)	(296)	25%	64%	(693)	(909)	31%
Other operating income	3	3	6	n/a	n/a	12	15	25%
EBITDA	1,137	1,371	974	(29%)	(14%)	4,187	5,457	30%
Depreciation and amortization	(383)	(473)	(469)	(1%)	23%	(1,351)	(1,802)	33%
EBIT	754	898	505	(44%)	(33%)	2,836	3,655	29%
Finance costs	(90)	(124)	(136)	9%	50%	(361)	(514)	42%
Other non-operating income and expenses	36	199	73	(63%)	n/a	710	411	(42%)
Shares of profit of associates and joint ventures	152	131	157	20%	4%	517	595	15%
Income tax expenses	(66)	(49)	8	n/a	n/a	(257)	(243)	(5%)
Profit before FX & extraordinary items	786	1,055	607	(42%)	(23%)	3,445	3,904	13%
Net foreign exchange gains (losses)	1	(18)	(3)	(84%)	n/a	(3)	(15)	n/a
Legal reserved	-	-	-	n/a	n/a	(101)	-	(100%)
Net profit	787	1,037	604	(42%)	(23%)	3,341	3,889	16%
Non-controlling interests	(65)	(138)	(118)	(14%)	82%	(166)	(530)	n/a
Net profit-Owners of the company	722	899	486	(46%)	(33%)	3,175	3,359	6%
Earning per share (Baht/share)	0.48	0.60	0.32	(46%)	(33%)	2.12	2.24	6%
Weighted average number of common share (Million)	1,498	1,498	1,498	0%	0%	1,498	1,498	0%

Overall Operating Results of the Company and its Subsidiaries

The company reported net profit that attributed to the company of Baht 486 million in Q4/2018, decreased by Baht 413 million or 46% from Q3/2018, as a result of the drop in gross profit by Baht 342 million or 21% as summarized below:

Gross Profit

- Due to the increase in natural gas prices while Ft rate remained unchanged, the gross profit of Rayong Central Utility Plants and IRPC-CP declined in the same amount of Baht 36 million.
- The gross profit of Sriracha Power Plant decreased by Baht 239 million from lower Availability Payment (AP) by Baht 242 million, lower Weight factor, and the major overhaul maintenance shutdown in Q4/2018.
- The gross profit of ISP1 declined by Baht 32 million from lower solar intensity in Q4/2018.

Compared to Q4/2017, the net profit in Q4/2018 declined by Baht 236 million or 33% due to the decrease in gross profit by Baht 51 million or 4% mainly caused by maintenance shutdown of Sriracha Power Plant and IRPC-CP.

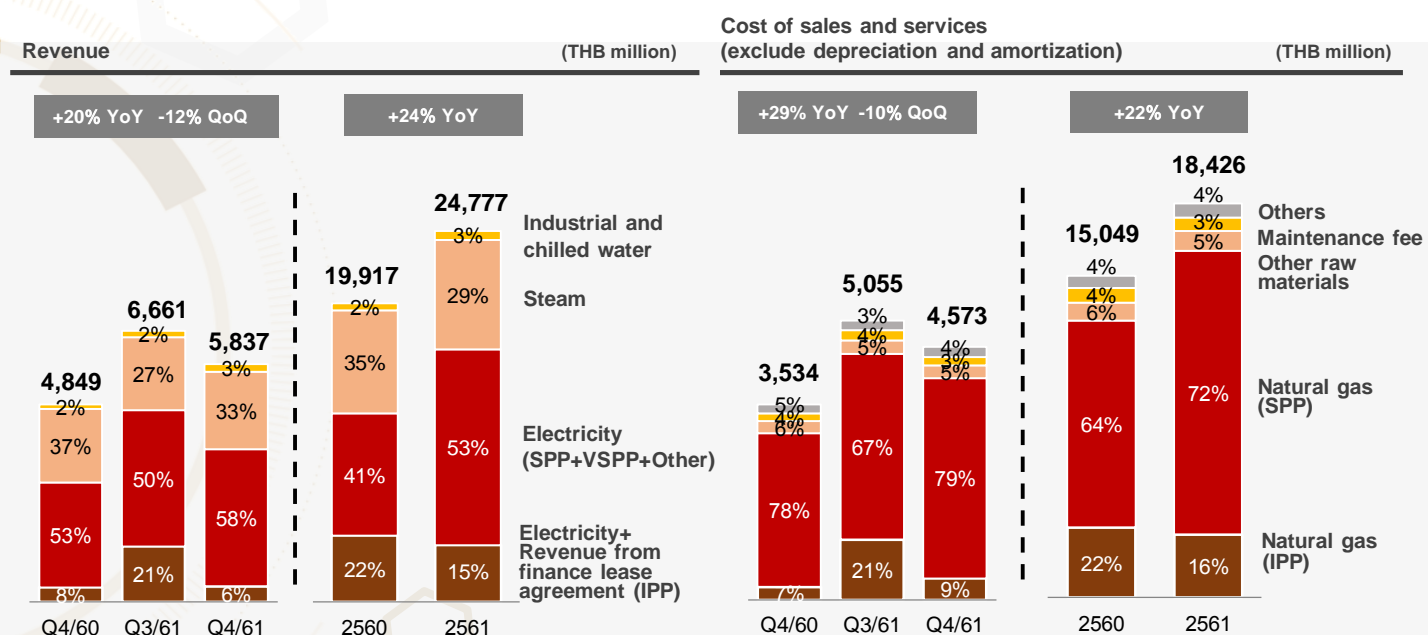
Compared to 2017, the net profit in 2018 was at Baht 3,359 million, increased by Baht 184 million or 6% from 2017 due to the start-up full-phases operation of IRPC-CP and ISP1 in Q4/2017.

Operating Revenue

The company reported revenue in Q4/2018 was at Baht 5,837 million which decreased by Baht 824 million or 12% from Q3/2018. This was mainly due to maintenance shutdown of Sriracha Power Plant and IRPC-CP in Q4/2018. However, comparing to Q4/2017, the revenue in Q4/2018 increased by Baht 988 million or 20%, and the revenue in 2018 was at Baht 24,777 million increased by Baht 4,860 million or 24% from 2017. The reasons were the increase in revenue from IRPC-CP and ISP1 that started commercial operation full phases in Q4/2017 and the increase in revenue of CHPP from solar rooftops installation services in gas stations, buildings and distribution center of PTT Group companies.

Cost of Sales and Services (exclude Depreciation and Amortization)

- **Natural gas costs**, the main operating cost of the company, was at Baht 4,015 million in Q4/2018, dropped by Baht 441 million or 10% from last quarter. The main factors were the decrease in natural gas consumption from maintenance shutdown and the lower dispatched electricity of Sriracha Power Plant as instructed by EGAT. Comparing to Q4/2017, the cost in Q4/2018 increased by Baht 1,006 million or 33%. Also, the cost of 2018 increased by Baht 3,245 million or 25% from 2017. This is due to the increase in natural gas prices and higher gas consumption from full phases operation of IRPC-CP in Q4/2017.
- **Maintenance costs** was at Baht 149 million in Q4/2018, which was lower than in Q3/2018 by Baht 35 million or 19% due to lower maintenance cost of Sriracha Power Plant that varies by operating hours according to EGAT's dispatch instruction. Comparing to Q4/2017, the maintenance cost in Q4/2018 was up by Baht 8 million or 6% due to the cost regarding maintenance shutdown and the additional maintenance plan of IRPC-CP. For the year of 2018, maintenance cost dropped by Baht 29 million or 4% from lower operating hours of Sriracha Power Plant compared to 2017.



Selling and Administrative Expenses

In Q4/2018, the selling and administrative expenses were at Baht 296 million, increased by Baht 58 million or 25% from Q3/2018, and increased by Baht 115 million or 64% from Q4/2017 respectively, due to the increase in business development costs to support business growth. This also resulted in the increase in the selling and administrative expenses in 2018 by Baht 216 million or 31% from 2017.

Finance Costs

In Q4/2018, the finance costs were at Baht 136 million, increased by Baht 12 million or 9% from Q3/2018, and increased by Baht 46 million or 50% from Q4/2017 respectively, due to the recognition of the borrowing costs as the expenses of IRPC-CP and ISP1 after their start-up in Q4/2017. Moreover, the company borrowed the long term loan in June 2018 to support business growth in the amount of Baht 2,000 million, thereby increased the finance costs in 2018 by Baht 153 million or 42% when compare to 2017.

Other Non-operating Income and Expenses

Other non-operating income and expenses in Q4/2018 were at Baht 73 million, decreased from Q3/2018 by Baht 126 million or 63%, mainly from the dividend income of Baht 135 million from RPCL. However, other non-operating income and expenses increased by Baht 37 million from Q4/2017 due to the recognition of asset impairment of Baht 31 million. Comparing to 2017, other non-operating income and expenses in 2018 decreased by Baht 299 million or 42% from the drop in dividend income from RPCL, with no machines compensation of Rayong Central Utility Plant 1 (CUP-1) and the compensation from the contractor of IRPC-CP Phase 1 as in 2017.

Gain or Loss from the Exchange Rate

In Q4/2018, the company reported the losses of exchange rate in total of Baht 3 million, decreased by Baht 15 million from Q3/2018. This is due to currency fluctuation and the reduced amount of loan to affiliates of the company. Compared to 2017, the losses of exchange rate increased by Baht 12 million due to the appreciation of Thai Baht.

Income Tax Expenses

The income tax revenues in Q4/2018 were at Baht 8 million, lowered the income tax expenses by Baht 57 million from Q3/2018, in line with the company's performance and the revision of tax estimation in Q4/2018. Moreover, the income tax expenses decreased from Q4/2017 by Baht 74 million from the utilization of BOI privileges of IRPC-CP for tax exemption since the full operation in November 2017, resulting in lower effective tax rate in Q4/2018. Comparing to 2017, the income tax expenses in 2018 decreased by Baht 14 million or 5% because of the compensation from the contractor of IRPC-CP that did not receive tax exemption.

Shares of Profit of Associates and Joint Ventures

Shares of profit of associates and joint ventures (THB million)	% of shareholding	Q4/17	Q3/18	Q4/18	Change +/-		2017	2018	Change +/-
					QoQ	YoY			YoY
Indepent Power Producer (IPP)									
- Xayaburi Power Company Limited (XPCL)	25%	(6)	(6)	(6)	(0%)	4%	(22)	(25)	(15%)
Small Power Producer (SPP)									
- Bangpa-in Cogeneration Company Limited (BIC)	25%	38	37	34	(9%)	(12%)	88	145	64%
- Nava Nakorn Electricity Generating Company Limited (NNEG)	30%	36	19	28	47%	(22%)	122	112	(9%)
- Nam Lik 1 Power Company Limited (NL1PC)	40%	15	14	19	35%	25%	30	54	80%
Total Small Power Producer		89	70	81	15%	(9%)	240	311	30%
Very Small Power Plant (VSPP)									
- Thai Solar Renewable Company Limited (TSR)	40%	69	67	82	22%	19%	299	309	3%
Total shares of profit of associates and joint ventures		152	131	157	20%	4%	517	595	15%

Shares of profit of associates and joint ventures in Q4/2018 increased by Baht 26 million or 20% from Q3/2018, and increased by Baht 5 million or 4% from Q4/2017 due to the following reasons:

- Shares of loss from Xayaburi Power Company Limited (XPCL) was the same as Q3/2018 but slightly decreased by Baht 0.3 million from Q4/2017 because of the changes in administrative expenses during the period.
- Shares of profit from Bangpa-In Cogeneration Company Limited (BIC) dropped by Baht 3 million from Q3/2018, and dropped by Baht 4 million from Q4/2017 due to the rise in selling and administrative expenses during the period.
- Shares of profit from Nava Nakorn Electricity Generating Company Limited (NNEG) gained by Baht 9 million from Q3/2018, but decreased by Baht 8 million from Q4/2017 because of the amortization of finance costs from early loan repayment.
- Shares of profit from Nam Lik 1 Power Company Limited (NL1PC) increased by Baht 5 million from Q3/2018 and increased by Baht 4 million from Q4/2017 from the finance income recognition of the concession grant according to TFRIC12 .
- Shares of profit from Thai Solar Renewable Company Limited (TSR) rose by Baht 15 million from Q3/2018 and rose by Baht 13 million from Q4/2017 due to better weather conditions that yielded higher electricity production and efficiency in operation and maintenance costs.

Operating Results by Plant
Sriracha Power Plant: IPP

Operating performance	Q4/17	Q3/18	Q4/18	Change +/-(-)		2017	2018	Change
				QoQ	YoY			+/(-) YoY
(THB million)								
Revenue								
Revenue from selling electricity								
- Availability Payment: AP	(9)	123	(119)	n/a	n/a	470	271	(42%)
- Energy Payment: EP	228	1,101	368	(67%)	61%	3,343	2,958	(12%)
- Received money to submit to Power Developments Funds	-	5	1	(84%)	n/a	15	12	(23%)
Total revenue from selling electricity	219	1,229	250	(80%)	14%	3,828	3,241	(15%)
Revenue from finance lease agreement	144	134	130	(3%)	(10%)	592	543	(8%)
Other income	-	1	-	(100%)	n/a	-	6	n/a
Total revenue from selling electricity	363	1,364	380	(72%)	5%	4,420	3,790	(14%)
Cost of sales of goods and rendering of services								
Cost of raw materials								
- Natural gas	234	1,091	387	(65%)	65%	3,273	2,947	(10%)
- Water	1	5	2	(68%)	58%	22	16	(32%)
- Power Development Funds	-	5	1	(84%)	n/a	15	12	(23%)
- Others	18	6	23	n/a	29%	46	50	8%
Total cost of raw materials	253	1,107	412	(63%)	63%	3,356	3,024	(10%)
Maintenance fee	36	78	19	(76%)	(47%)	284	197	(31%)
Others (exclude depreciation and amortization)	47	44	52	20%	11%	196	185	(6%)
Total cost of sales of goods and rendering of services	336	1,229	484	(61%)	44%	3,836	3,406	(11%)
Gross profit	27	135	(104)	n/a	n/a	584	384	(34%)
Gross profit margin	7%	10%	(27%)	(37%)	(34%)	13%	10%	(3%)

Gross Profit

Sriracha Power Plant is an Independent Power Producer (IPP) where the gross profit depends on Availability Payment (AP) of the power plant.

In Q4/2018, gross profit of Sriracha Power Plant was Baht -104 million, decreased by Baht 239 million from Q3/2018. This resulted from the drop in revenue from Availability Payment (AP) by Baht 242 million from lower Weight factor which is seasonal factor and major overhaul maintenance in Q4/2018.

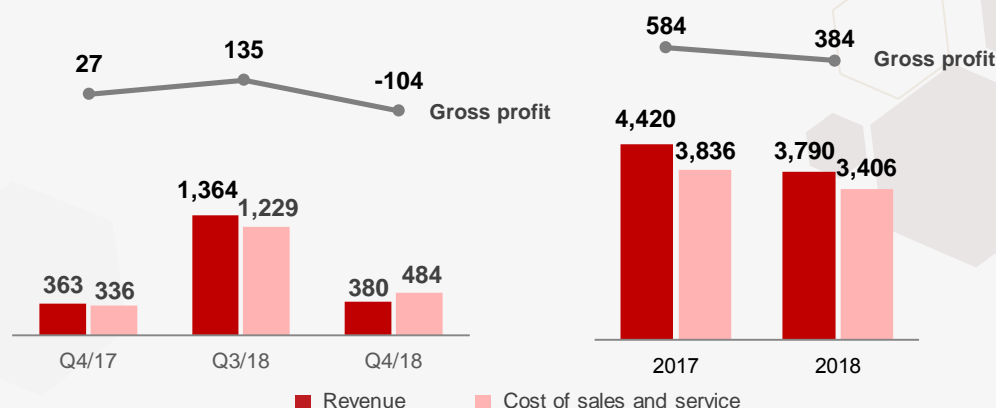
The gross profit in Q4/2018 compared to Q4/2017 dropped by Baht 131 million due to the following reasons:

- Revenue from Availability Payment (AP) dropped by Baht 110 million due to the accounting adjustment of Availability Payment (AP) according to TFRIC4.
- Higher natural gas cost from the increase in natural gas prices.

While the gross profit for 2018 compared to 2017 declined by Baht 200 million or 34% due to the drop in revenue from Availability Payment (AP) by Baht 199 million caused by the accounting adjustment of Availability Payment (AP) according to TFRIC4, major overhaul in Q4/2018 and higher natural gas prices.

Sriracha Power Plant Performance

(Unit: THB million)



Revenue

Q4/2018 VS Q3/2018 (QoQ)

Total revenue in Q4/2018 decreased by 984 million or 72% from previous quarter due to the following reasons:

- The revenue from Energy Payment (EP) declined by Baht 733 million or 67% from the drop in electricity dispatched volume to EGAT, together with major overhaul maintenance shutdown in Q4/2018.
- The revenue from Availability Payment (AP) decreased by Baht 242 million from the drop in Weight factor and major overhaul maintenance shutdown in Q4/2018.
- However, the average selling price of electricity increased from lower dispatched volume to EGAT during maintenance shutdown, while the power plant still received 10% of the full AP, resulted in higher average selling price.

Q4/2018 VS Q4/2017 (YoY)

Total revenue in Q4/2018 increased by Baht 17 million or 5% from Q4/2017 due to the following reasons:

- The revenue from Energy Payment (EP) increased by Baht 140 million or 61% from higher electricity dispatched volume to EGAT.
- The revenue from Availability Payment (AP) decreased by Baht 110 million from the accounting adjustment of AP according to TFRIC4 and major overhaul maintenance shutdown in Q4/2018.

2018 VS 2017

Total revenue in 2018 decreased by Baht 630 million or 14% from 2017 due to the following reasons:

- The revenue from Energy Payment (EP) dropped by Baht 385 million or 12% from lower electricity dispatched volume to EGAT due to major overhaul maintenance in Q4/2018.
- The revenue from Availability Payment (AP) declined by Baht 199 million or 42% from the accounting adjustment of Availability Payment according to TFRIC4 and major overhaul maintenance shutdown in Q4/2018.
- However, the average selling price of electricity increased due to lower dispatched volume to EGAT during maintenance shutdown, while the power plant still received 10% of the full AP, resulted in higher average selling price.

Sriracha Power Plant: IPP	Q4/17	Q3/18	Q4/18	Change +/-		2017	2018	Change +/-
				QoQ	YoY			
Key revenue drivers								
Availability rate	64%	100%	40%	(60%)	(24%)	91%	85%	(6%)
Dispatch (GWh)	-	469	74	(84%)	n/a	1,521	1,150	(24%)
Average selling price (Baht/kWh)	n/a	2.62	3.35	28%	n/a	2.52	2.81	12%
Key cost drivers								
Natural gas consumption ('000 MMBTU)	34	3,667	611	(83%)	n/a	11,577	9,034	(22%)
Average price of natural gas (Baht/MMBTU)	n/a	297	632	n/a	n/a	283	326	15%

Cost of Goods Sold and Services (excluding Depreciation and Amortization)

Q4/2018 VS Q3/2018 (QoQ)

The cost dropped by Baht 745 million or 61% due to the following reasons:

- The natural gas cost dropped by Baht 704 million or 65% from lower natural gas consumption following EGAT's dispatch instruction and major overhaul maintenance shutdown.
- The average price of natural gas rose by 335 Baht per MMBTU from higher dispatch, while still had demand charge thus average price per unit rose.
- The maintenance cost dropped by Baht 59 million or 76% with respect to lower dispatched volume to EGAT. Also, the agreement of maintenance service that varies by operating hour was expired so, the company planned on its own maintenance.

Q4/2018 VS Q4/2017 (YoY)

The cost increased by Baht 148 million or 44% due to the following reasons:

- The natural gas cost moved up by Baht 153 million or 65% from higher natural gas consumption corresponding to EGAT's dispatched instruction.
- The maintenance cost dropped by Baht 17 million or 47% from the change of maintenance agreement.

2018 VS 2017

The cost in 2018 decreased by Baht 430 million or 11% from 2017 due to the following reasons:

- The natural gas cost dropped by of Baht 326 million or 10% from lower natural gas consumption corresponding to EGAT's dispatched instruction and maintenance shutdown. Even though average price of natural gas rose from 283 Baht per MMBTU to 326 Baht per MMBTU.
- The average price of natural gas rose by 43 Baht per MMBTU or 15% from higher dispatch, while still had demand charge thus average price per unit rose.
- The maintenance cost dropped by Baht 87 million or 31% as a result of lower dispatched volume to EGAT. Also, the agreement of maintenance service that varies by operating hour was expired so, the company planned on its own maintenance.

Rayong Central Utility Plants 1-3 (CUP 1-3): Cogeneration

Operating performance (THB million)	Q4/17	Q3/18	Q4/18	Change +/-		2017	2018	Change +/-
				QoQ	YoY			YoY
Revenue								
Revenue from selling electricity	1,878	1,873	1,929	3%	3%	7,004	7,493	7%
Revenue from selling steam	1,536	1,558	1,629	5%	6%	5,911	6,259	6%
Revenue from selling industrial water	76	74	84	14%	11%	268	309	15%
Total revenue	3,490	3,505	3,642	4%	4%	13,183	14,060	7%
Cost of sales of goods and rendering of services								
Cost of raw materials								
- Natural gas	2,183	2,335	2,540	9%	16%	8,322	9,235	11%
- Steam	95	63	52	(18%)	(45%)	329	278	(15%)
- Water	43	43	44	2%	3%	164	172	5%
- Others	32	57	30	(48%)	(6%)	155	163	5%
Total cost of raw materials	2,353	2,498	2,666	7%	13%	8,970	9,848	10%
Maintenance fee	82	74	78	7%	(4%)	321	280	(13%)
Others (exclude depreciation and amortization)	94	86	87	2%	(7%)	337	330	(2%)
Total cost of sales of goods and rendering of services	2,529	2,658	2,831	7%	12%	9,628	10,458	9%
Gross profit	961	847	811	(4%)	(16%)	3,555	3,602	1%
Gross profit margin	28%	24%	22%	(2%)	(6%)	27%	26%	(1%)

Gross Profit

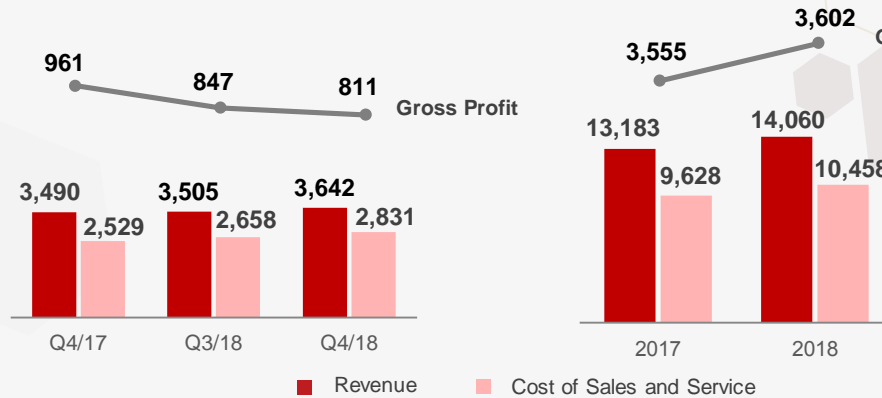
In Q4/2018, the gross profit of Rayong Central Utility Plants (CUP1-3) was Baht 811 million, decreased by Baht 36 million or 4% from Q3/2018 due to the increase in natural gas prices while Ft rate remained the same at -15.90 Satang per Kilowatt-Hour, thereby impacted the gross profit margin.

Comparing to Q4/2017, the gross profit in Q4/2018 dropped by Baht 150 million or 16% due to lower electricity and steam sales volume. Also, the increase in natural gas prices while Ft rate remained the same at -15.90 Satang per Kilowatt-Hour, consequently the plant observed the impact to gross profit margin.

Nevertheless, the gross profit in 2018 slightly increased by Baht 47 million or 1% from 2017. The factors were the increase in electricity and steam sales volume even though the increase in natural gas prices was more than Ft rate.

Rayong Central Utility Plants Performance

(THB Million)



Revenue

Q4/2018 VS Q3/2018 (QoQ)

In Q4/2018, total revenue of Rayong Central Utility Plants increased by Baht 137 million or 4% from previous quarter due to the following reasons:

- The revenue from selling electricity increased by Baht 56 million from the increase in sales volume by 18 Gigawatt-hours from higher demand in industrial users after the maintenance shutdown of gas turbine in Q3/2018. The average selling prices were maintained.
- The revenue from selling steam increased by Baht 71 million from the increase in sales volume by 30 thousand tons due to maintenance shutdown of major customers in Q3/2018, together with the increase of average selling price by 24 Baht per ton which is in line with higher natural gas prices.

Q4/2018 VS Q4/2017 (YoY)

Total revenue increased by Baht 152 million or 4% from Q4/2017 due to the following reasons:

- The revenue from selling electricity increased by Baht 51 million from the increase in average selling price by 12 Satang per Kilowatt-hours, though sales volume decreased by 10 Gigawatt-hours.
- The revenue from selling steam increased by Baht 93 million from the increase in average selling price by 110 Baht per Ton in line with higher natural gas prices, though sales volume decreased by 64 thousand tons.

2018 VS 2017

Total revenue for 2018 increased by Baht 877 million or 7% from 2017 due to the following reasons:

- The revenue from selling electricity increased by Baht 489 million from higher sales volume by 60 Gigawatt-hours. The reasons were the higher demand from industrial users in expanding production capacities and maintenance shutdown of gas turbine in 2017. Also, the average selling price increased by 13 Satang per Kilowatt-hours with higher Ft rate.
- The revenue from selling steam rose by Baht 348 million with higher sales volume of 128 thousand tons after the maintenance shutdown of some customers in 2017. In addition, the average selling price increased by 37 Baht per Ton, in line with rising natural gas prices.

Rayong Central Utility Plants: Cogeneration			Q4/17	Q3/18	Q4/18	Change +/(–)		2017	2018	Change +/(–)
					QoQ YoY				YoY	
<u>Key revenue drivers</u>										
• Power										
Sales volume (GWh)	652	624	642	3%	(2%)	2,448	2,508	2%		
Average selling price (Baht/kWh)	2.88	3.00	3.00	0%	4%	2.86	2.99	5%		
• Steam										
Sales volume ('000 Tonnes)	1,485	1,391	1,421	2%	(4%)	5,596	5,724	2%		
Average selling price (Baht/Ton)	1,035	1,121	1,145	2%	11%	1,056	1,093	4%		
<u>Key cost drivers</u>										
Natural gas consumption (‘000 MMBTU)	8,745	8,394	8,636	3%	(1%)	33,191	33,979	2%		
Average price of natural gas (Baht/MMBTU)	250	278	294	6%	18%	251	272	8%		

Cost of Goods Sold and Rendering Services (excluding Depreciation and Amortization)

Q4/2018 VS Q3/2018 (QoQ)

In Q4/2018, the cost increased by Baht 173 million or 7% from Q3/2018 due to the following reasons:

- The natural gas cost increased by Baht 205 million or 9%, consistent with the increase in natural gas consumption and the average price that rose from 278 Baht per MMBTU to 294 Baht per MMBTU.
- The other costs decreased by Baht 32 million because in Q3/2018, some electricity was purchased from PEA to be used as the reserve during maintenance shutdown of gas turbine.

Q4/2018 VS Q4/2017 (YoY)

In Q4/2018, the cost increased by Baht 302 million or 12% from Q4/2017 due to the following reasons:

- The natural gas cost increased by Baht 357 million or 16% mainly from the increase in average price from 250 Baht per MMBTU to 294 Baht per MMBTU.
- The other costs slightly declined.

2018 VS 2017 (YoY)

- The cost in 2018 increased by Baht 830 million or 9% from 2017, resulting from the rise in natural gas consumption by Baht 913 million or 11%, which in line with higher sales. Also, average price of natural gas rose from 251 Baht per MMBTU to 272 Baht per MMBTU.

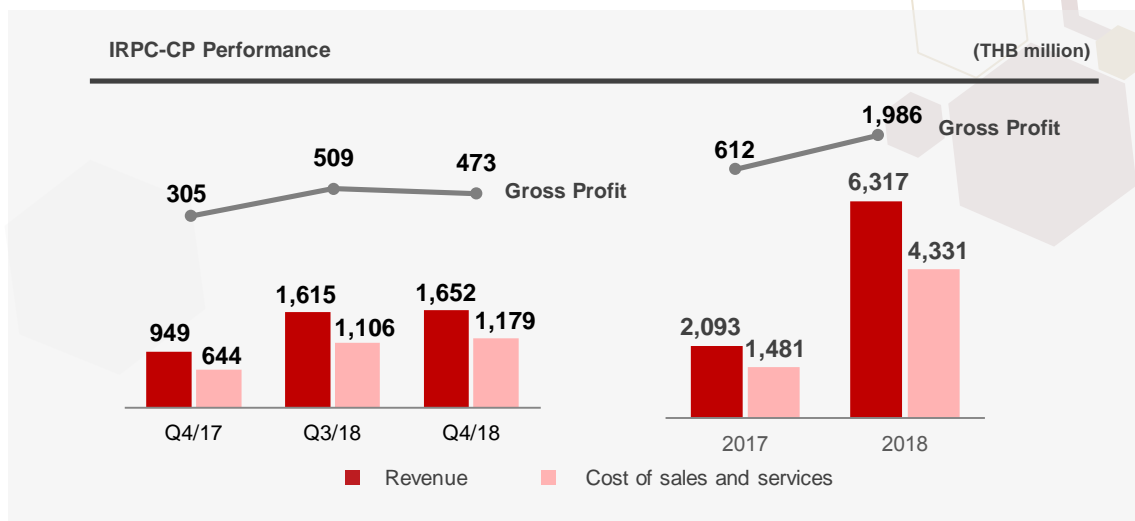
IRPC Clean Power (IRPC-CP): SPP

Operating performance (THB million)	Q4/17	Q3/18	Q4/18	Change +/-		2017	2018	Change +/(YoY
				QoQ	YoY			
Revenue								
Revenue from selling electricity	684	1,373	1,371	(0%)	100%	1,131	5,278	n/a
Revenue from selling steam	265	242	281	16%	6%	962	1,039	8%
Total revenue	949	1,615	1,652	2%	74%	2,093	6,317	n/a
Cost of sales of goods and rendering of services								
Cost of raw materials								
- Natural gas	592	1,030	1,088	6%	84%	1,346	4,009	n/a
- Water	9	10	10	1%	16%	23	42	83%
- Others	7	12	10	(15%)	43%	22	47	n/a
Total cost of raw materials	608	1,052	1,108	5%	82%	1,391	4,098	n/a
Maintenance fee	21	26	44	69%	n/a	59	133	n/a
Others (exclude depreciation and amortization)	15	28	27	(6%)	77%	31	100	n/a
Total cost of sales of goods and rendering of services	644	1,106	1,179	7%	83%	1,481	4,331	n/a
Gross profit	305	509	473	(7%)	55%	612	1,986	n/a
Gross profit margin	32%	31%	29%	(3%)	(3%)	29%	31%	2%

Gross Profit

Gross profit of IRPC Clean Power (IRPC-CP) in Q4/2018 was at Baht 473 million, decreased by Baht 36 million or 7% from Q3/2018. This was due to the increase in natural gas prices while Ft rate remained constant at -15.90 Satang per Kilowatt-hour.

The gross profit in Q4/2018 increased by Baht 168 million or 55% from Q4/2017, and the gross profit in 2018 increased by Baht 1,374 million from 2017 due to the full phase operation since November 2017, thus higher electricity sales was observed.



Revenue

Q4/2018 VS Q3/2018 (QoQ)

- Total revenue in Q4/2018 increased from Q3/2018 by Baht 37 million or 2% despite the maintenance shutdown in Q4/2018, the higher steam sales came from auxiliary boiler. In addition, the average selling price of electricity rose by 11 Satang per Kilowatt-hour and the average selling price of steam rose by 62 Baht per ton in line with the rise in natural gas prices.

Q4/2018 VS Q4/2017 and 2018 VS 2017 (YoY)

- Total revenue in Q4/2018 increased by Baht 703 million or 74% from Q4/2017. Comparing to 2017, total revenue in 2018 increased by Baht 4,224 million. The main reason to these increases was the start-up of full phases operation in November 2017, thereby resulting to higher electricity sales.

IRPC-CP : SPP	Q4/17	Q3/18	Q4/18	Changes +/-(-)		2017	2018	Changes +/-(-)
				QoQ	YoY			YoY
Key revenue drivers								
• Power								
Sales volume (GWh)	235	443	427	(4%)	82%	391	1,723	n/a
Average selling price (Baht/kWh)	2.92	3.10	3.21	4%	10%	2.89	3.06	6%
• Steam								
Sales volume ('000 Tonnes)	232	194	215	11%	(7%)	833	848	2%
Average selling price (Baht/Ton)	1,145	1,247	1,309	5%	14%	1,156	1,225	6%
Key cost drivers								
Natural gas consumption ('000 MMBTU)	2,502	3,874	3,831	(1%)	53%	5,457	15,366	n/a
Average price of natural gas (Baht/MMBTU)	237	266	284	7%	20%	247	261	6%

Cost of Goods Sold and Rendering Services (excluding Depreciation and Amortization)

Q4/2018 VS Q3/2018 (QoQ)

- The cost increased by Baht 73 million or 7% from Q2/2018 from the increase in natural gas cost by Baht 58 million or 6% corresponding to the increase in average price of natural gas by 18 Baht per MMBTU.

Q4/2018 VS Q4/2017 and 2018 VS 2017 (YoY)

- The cost in Q4/2018 increased by Baht 535 million or 83% from Q4/2017. Comparing to 2017, the cost in 2018 increased by Baht 2,850 million. The reason was mainly due to the start-up of full phases operation in November 2017.

Combine Heat and Power Producing Company Limited (CHPP) : VSPP

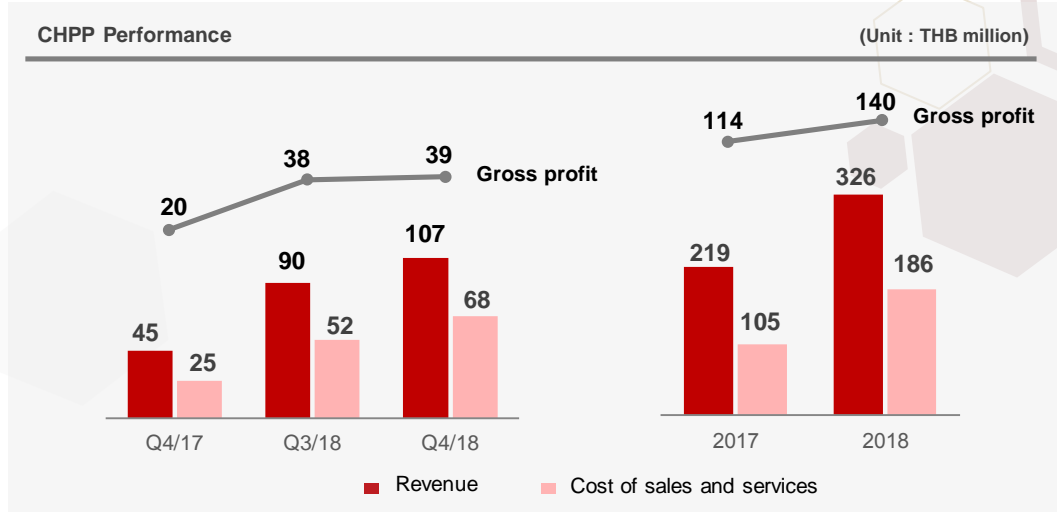
Operating Performance (THB million)	Q4/17	Q3/18	Q4/18	Changes +/-		2017	2018	Changes +/-
				QoQ	YoY			YoY
Revenue								
Revenue from selling chilled water	36	53	49	(8%)	36%	175	187	7%
Revenue from selling electricity	5	11	10	(4%)	n/a	40	42	5%
Revenue from services	4	26	48	84%	n/a	4	97	n/a
Total revenue	45	90	107	19%	n/a	219	326	49%
Cost of sales of goods and rendering of services								
Cost of raw materials								
- Electricity power	11	23	20	(13%)	84%	67	75	12%
- Others	4	21	38	82%	n/a	7	79	n/a
Total cost of raw materials	15	44	58	32%	n/a	74	154	n/a
Maintenance fee	2	1	2	n/a	(3%)	5	5	(7%)
Others (exclude depreciation and amortization)	8	7	8	14%	0%	26	27	3%
Total cost of sales of goods and rendering of services	25	52	68	31%	n/a	105	186	77%
Gross profit	20	38	39	4%	n/a	114	140	23%
Gross profit margin	44%	42%	37%	(5%)	(7%)	52%	43%	(9%)

Gross Profit

Gross profit of CHPP in Q4/2018 was at Baht 39 million increased from Q3/2018 by Baht 1 million, and increased from Q4/2017 by Baht 19 million. The reason came from higher sales of chilled water at the Chaeng Watthana Government Complex and higher income from solar panel installation services on buildings and distribution center of PTT Group companies.

In addition, gross profit of 2018 was at Baht 140 million, increased by Baht 26 million or 23% from 2017. This was mainly due to income from solar panel installation services on gas station rooftops, buildings and distribution center of PTT Group companies.

CHPP: VSPP	Q4/17	Q3/18	Q4/18	Changes +/-		2017	2018	Changes +/-
				QoQ	YoY			YoY
Sales volume of chilled water ('000 RT)	5,363	7,848	6,941	(12%)	29%	25,740	27,266	6%
Average selling price of chilled water (Baht/RT)	6.81	6.75	7.04	4%	3%	6.80	6.88	1%
Sales volume of power (GWh)	1.8	2.0	2.0	0%	11%	7.0	7.6	9%
Average selling price (Baht/kWh)	5.66	5.66	5.66	0%	0%	5.66	5.66	0%



Revenue/Cost of Goods and Rendering Services

Q4/2018 VS Q3/2018 (QoQ)

- The revenue in Q4/2018 increased by Baht 17 million or 19% from Q3/2018. This was attributable to the increase in chilled water sales and income generated from solar panel installation services on buildings and distribution center of PTT Group companies.
- The cost increased by Baht 16 million or 29%, corresponding to the increase in chilled water sales and cost of rendering more solar panel installation services.

Q4/2018 VS Q4/2017 (YoY)

- The revenue in Q4/2018 increased by Baht 62 million from Q4/2017. This was because of the income generated from solar panel installation services on buildings and distribution center of PTT Group companies.
- The cost increased by Baht 43 million in line with the cost of rendering solar panel installation services.

2018 VS 2017

- The revenue in 2018 increased by Baht 107 million or 49% from 2017. This was mainly attributable to income from solar panel installation services on gas station rooftops, buildings and distribution center of PTT Group companies.
- The cost in 2018 increased by Baht 81 million or 77% from 2017 mainly due to the increase in cost of rendering solar panel installation services.

Ichinoseki Solar Power 1 GK (ISP1) : Others

Operating Performance (THB million)	Q4/17	Q3/18	Q4/18	Change +/-		2017	2018	Change +/-
				QoQ	YoY			YoY
Revenue								
Revenue from selling electricity	2	86	54	(37%)	n/a	2	279	n/a
Total revenue	2	86	54	(37%)	n/a	2	279	n/a
Cost of sales of goods and rendering of services								
Maintenance fee	-	9	9	4%	n/a	-	39	n/a
Others (exclude depreciation and amortization)								
Total cost of sales of goods and rendering of services	-	9	9	4%	n/a	-	39	n/a
Gross profit	2	77	45	(42%)	n/a	2	240	n/a
Gross profit margin	100%	90%	83%	(7%)	(17%)	100%	86%	(14%)

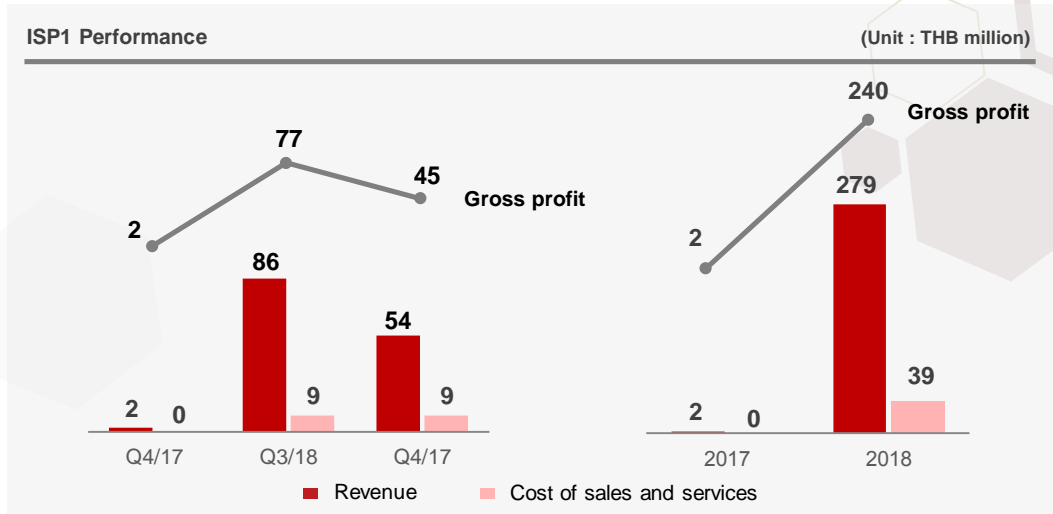
Gross Profit

Ichinoseki Solar Power 1 GK (ISP1) in Japan started commercial operation on December 15th, 2017, therefore, the power plant recognized revenue from Q4/2017 onwards.

The gross profit in Q4/2018 of ISP1 was at Baht 45 million, decreased by Baht 32 million or 42% from Q3/2018. This is primarily attributable to the weather condition in Japan that yielded lower solar intensity in Q4/2018 than in Q3/2018. On the other hand, the cost in Q4/2018 was unchanged.

The gross profit of ISP1 in 2018 was Baht 240 million since the start-up operation in December 2017. The revenue in 2018 was at Baht 279 million and the cost was Baht 39 million.

ISP1: Others	Q4/17	Q3/18	Q4/18	Changes +/-		2017	2018	Changes +/-
				QoQ	YoY			YoY
Sales volume of power (GWh)	0.16	7	5	(36%)	n/a	0.16	24	n/a
Average selling price (Baht/kWh)	11.81	11.85	11.60	(2%)	(2%)	11.81	11.78	(0%)



Revenue / Cost of Goods Sold and Rendering Services

Q4/2018 VS Q3/2018 (QoQ)

- The revenue in Q4/2018 decreased by Baht 32 million or 37% from previous quarter due to the weather conditions and resulted in low solar intensity.
- The cost in Q4/2018 was maintained unchanged compared to the previous quarter.

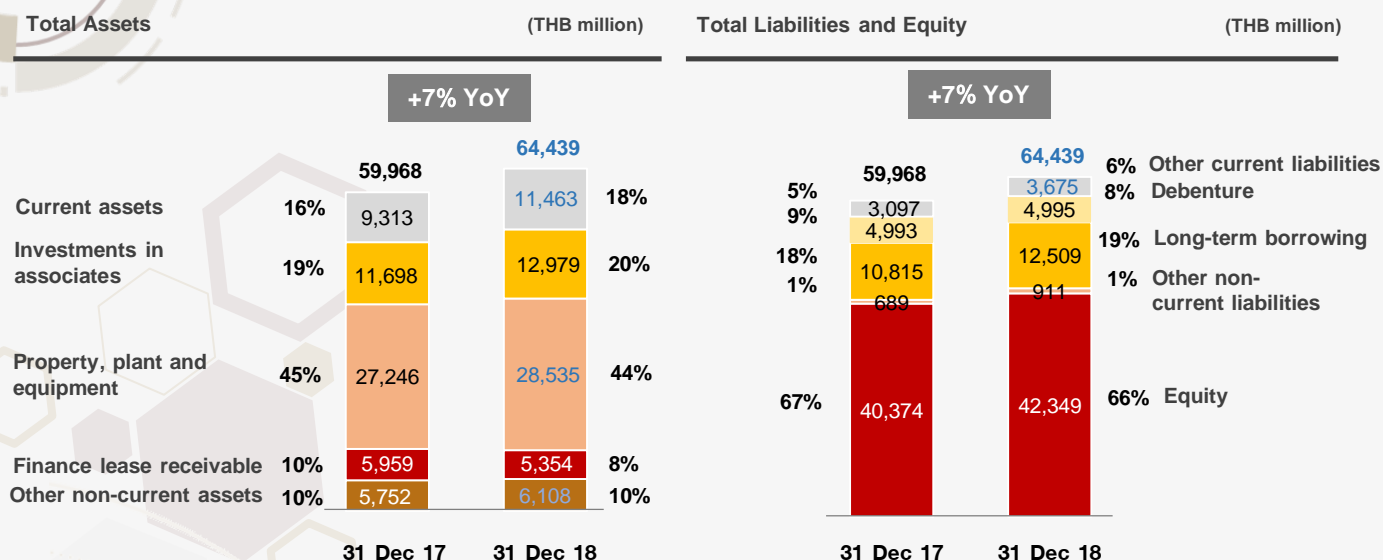
Q4/2018 VS Q4/2017 (QoQ)

- The revenue in Q4/2018 increased by Baht 52 million from Q4/2017 after the start-up operation on December 15th, 2017.

2018 VS 2017 (QoQ)

- The revenue in 2018 gained by Baht 277 million from 2017 from the start-up in December 15th, 2017.
- The cost of sales in 2018 was at Baht 39 million.

Summary of Financial Position of the Company and its Subsidiaries



Assets

As of December 31th, 2018, the total assets of the company and its subsidiaries were at Baht 64,439 million, increased by Baht 4,471 million or 7% from December 31th, 2017. The gain was attributable to the increase in current assets, investments in associates, and the increase in property, plant & equipment during construction. The details of significant changes was summarized below:

Current Assets increased by Baht 2,150 million or 23% mainly from following factors;

- Account receivable increased by Baht 429 million or 12% from with the increase in sales.
- Cash and cash equivalents and short-term investments increased by Baht 1,752 million or 41% primarily because of the increase in net loan issuance (after deducted loan repayments) of Baht 1,696 million.

Property, Plant and Equipment increased by Baht 1,289 million or 5% due to the cost of land and construction of Rayong Central Utility Plant 4 (CUP-4).

Finance Lease Receivable, net decreased by Baht 605 million or 10%, mainly due to the decrease in EGAT's financial lease receivable with respect to revenue recognition basis under TFRIC4.

Investments in Associates and Joint Ventures increased by Baht 1,281 million or 11% from December 31th, 2017, which are investment in associates and joint ventures and other long-term investment in the amount of Baht 992 million and Baht 291 million respectively. The details are as follows:

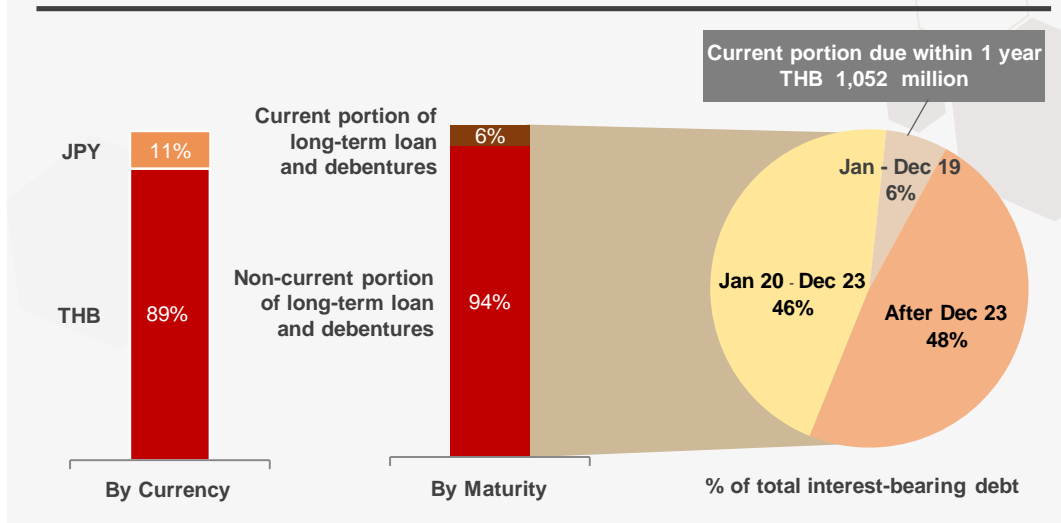
Investments	Invested as of 2018	Share of profit (loss)	Decrease from dividend received	Translation adjustment of currency	Increase (Decrease)
(THB million)					
Investments in associates					
- Bangpa-in Cogeneration Company Limited (BIC)	-	145	(81)	-	64
- Xayaburi Power company Limited (XPCL)	878	(25)	-	-	853
Total investments in associates	878	120	(81)	-	917
Investments in joint ventures					
- Thai Solar Renewable Company Limited (TSR)	-	309	(382)	-	(73)
- Nava Nakorn Electricity Generating Company Limited (NNEG)	7	112	(108)	-	11
- Nam Lik 1 Power Company Limited (NL1PC)	83	54	-	-	137
Total investments in joint ventures	90	475	(490)	-	75
Total	968	595	(571)	-	992

Liabilities

As of December 31th, 2018, total liabilities of the company and its subsidiaries were Baht 22,090 million, increased by Baht 2,495 million or 13% from December 31th, 2017. This was mainly attributable to the following factors:

- **Long-term loan from financial institutions** increased by Baht 1,696 million or 11% due to the issuance of long-term loan for IRPC-CP and ISP1 amounting to Baht 866 million. In addition, the company signed addition of Baht 2,000 million long-term loan for future expansion. Nevertheless, ISP1, IRPC-CP and CHPP repaid the loan in the amount of Baht 1,199 million.
- **Other payables** increased by Baht 578 million or 18% as a result of an increase in account payable from the construction of CUP-4.

Total Interest-Bearing Debt : THB 17,504 million



• Debt profile

- Debt balance of the company and its subsidiaries as of December 31th, 2018 was in Thai Baht and Japanese Yen currencies.
- Total interest-bearing debt includes long-term loans and debentures, which the current portion amounting to Baht 1,052 million or 6% and the non-current portion amounting to Baht 16,452 million or of 94%.

Equity

As of 31 December 2018, the total shareholders' equity of the company and its subsidiaries was at Baht 42,349 million, which increased by Baht 1,975 million or 5% from 31 December 2017, mainly from the increase in the unappropriated retained earnings and the increase in non-controlling shareholders equity of Baht 1,309 million and Baht 530 million, respectively. However, there was dividend payout of Baht 1,873 million during 2018.

Cash flow Analysis

For 2018, the company and its subsidiaries had a net increase in cash and cash equivalents increased by Baht 1,784 million or 42% from the fiscal year of 2017, primarily resulting from the increase in cash flow from operating activities:

Cash Flow from Operating Activities

For 2018, the company and its subsidiaries had net cash inflow from operating activities of Baht 6,108 million, which increased from cash received from operating activities for Baht 6,743 million net with the corporate income tax payments of Baht 365 million.

Cash Flow from Investing Activities

For 2018, the company and its subsidiaries had net cash used in investing activities of Baht 3,608 million due to land and construction payment in the amount of Baht 3,220 million. The company also made additional investments in the additional capital paid-up in the associates and long-term investment of Baht 1,068 million. Also, the company provided the loan to a related company in the amount of Baht 88 million. On the other hand, the company received the dividend from RPCL and other subsidiaries in total amount of Baht 696 million. At the same time, the company received cash flow from other investing activities in the amount of Baht 72 million.

Cash Flow from Financing Activities

For 2018, the company and its subsidiaries had total net cash to be used in financing activities of Baht 716 million, cash received mainly from additional drawdowns of long-term loans for IRPC-CP and ISP1 in the amount of Baht 2,866 million. However, there were repayments of long-term loan to financial institutions of its subsidiaries (ISP1, IRPC-CP and CHPP) in the amount of to Baht 1,199 million, repayments of interest and loans to financial institutions of Baht 510 million and the dividend distribution of Baht 1,873 million.

Cash flow
2018
(THB million)

Net cash flow from operating activities	6,108
Net cash flow from investing activities	(3,608)
Net cash used in financing activities	(716)
Net cash and cash equivalent (before exchange rate effect)	1,784
Effect of exchange rate to cash and cash equivalent	(32)
Net decrease in cash and cash equivalents (after taken into account exchange rate)	1,752
Cash and cash equivalents at the beginning of the period*	4,257
Cash and cash equivalents at the end of the period*	6,009

*Included restricted cash and temporary investment

Analysis for Sources and Usages of Funds

Sources of funds:

2018

(THB million)

Net cash flow from operating activities	6,108
Interest received	72
Loans repayment and interest payment to financial institutions, net from principal drawdown	1,157
Dividend received (paid) - net	(1,177)

Usages of funds:

2018

(THB million)

CAPEX and Fixed assets	3,220
Cash paid for investments in an associate	1,068
Loan to related party	88

Key Financial Ratios

Key financial ratios

Unit

Q4/17

Q3/18

Q4/18

Profitability ratios

Gross profit margin*	%	27.11	24.11	21.65
Net profit margin	%	15.92	15.06	10.17

Leverage ratios

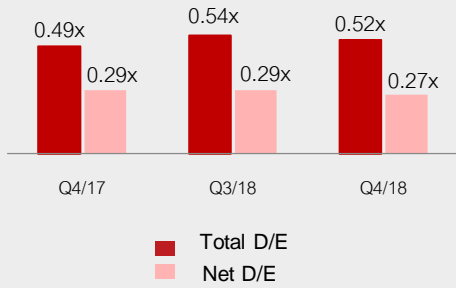
Interest coverage	Times	8.37	7.23	3.72
Net Debt to Equity (Net D/E)	Times	0.29	0.29	0.27
Total Debt to Equity (Total D/E)	Times	0.49	0.54	0.52

Liquidity ratios

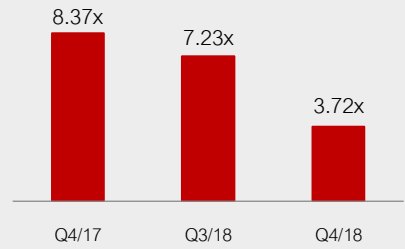
Current ratio	Times	2.43	2.73	2.58
Quick ratio	Times	1.94	2.27	2.14

* Exclude costs of depreciation and amortization

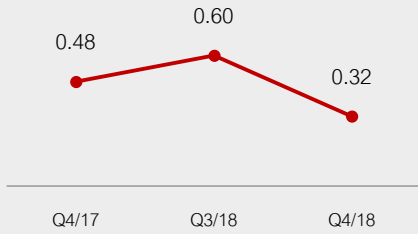
Total D/E and Net D/E Ratios (Times)



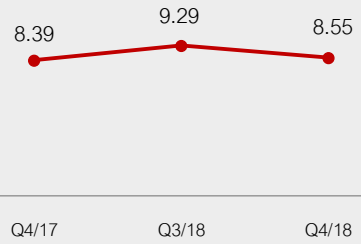
Interest coverage ratio (Times)



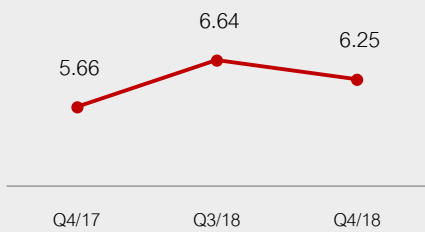
Earning per share (EPS) (Baht/share)



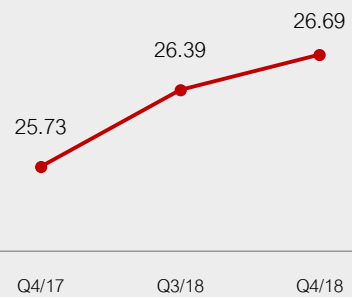
ROE (%)



ROA (%)



Book value per share (BVPS) (Baht/share)



Project
Update



Update of Projects
under Construction

Xayaburi Power Company Limited (XPCL)

Project Summary:

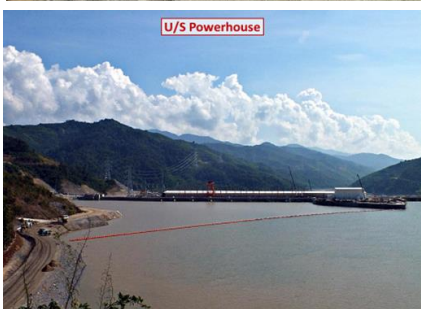
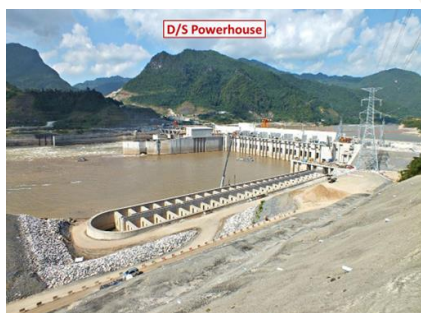
- Xayaburi Power Company Limited (XPCL) is a Run-of-River Hydropower Plant located on Khong River, 100 kilometers from South of Luang Prabang in Lao People's Democratic Republic (Lao PDR), with electricity generating capacity of 1,285 Megawatts. The project secures 1,220 Megawatts of Power Purchase Agreement (PPA) with EGAT and 60 Megawatts of PPA with Electricite Du Laos (EDL). The concession agreement was extended for 2 more years, totaling of 31 years.
- GPSC holding: 25% of total shares
- SCOD : October 2019

Project updates:

At the end of December 2018, the construction progress of XPCL was at 97.5% as appraised by the government of Lao PDR's technical advisor. The main construction tasks, such as power house, intermediate block, fish ladder and 500 kV transmission line were mostly completed. The commissioning of Generator Unit 1 has started since December 2018 as scheduled.

97.5%

4Q18
97.5%
3Q18
96%



Nam Lik 1 Power Company Limited (NL1PC)

Project Summary:

- Nam Lik 1 Power Company Limited (NL 1 PC) is a Run-of-River Hydropower Plant located in the Northern of Vientiane, Capital City of Lao PDR, with electricity generating capacity of 64.7 Megawatts. The project secures 63.8 Megawatts Power Purchase Agreement (PPA) with EDL, for a period of 30 years.
- GPSC holding: 40% of total shares
- SCOD : Beginning of 2019

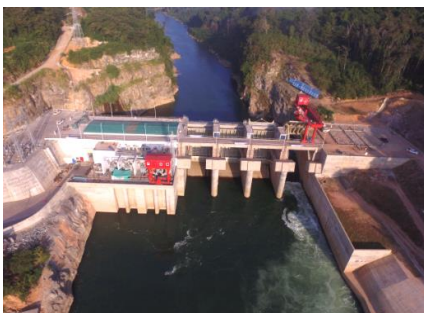
Project updates:

At the end of December 2018, the construction progress of NL1PC as appraised by technical advisor was at 96.5%. The main activities such as start pre-commissioning phase of Turbine Unit 2, The tie-in of 115 kV transmission line to Hin Heup substation has been executed.

% Progress

96.5%

4Q18
96.5%
3Q18
95%



Rayong Central Utility Plant 4 (CUP-4)

% Progress

60.3%

4Q18
60.3%

3Q18
39.7%



Project Summary:

- **Central Utility Plant 4 (CUP-4)** is a gas-fired cogeneration power plant located in Asia Industrial Estate, Rayong Province, Thailand. CUP-4 has electricity capacity of 45 Megawatts and 70 Tons per hour of steam, CUP-4 secures Power Purchase Agreement (PPA) with industrial users in Asia Industrial Estate and neighboring industrial estate.
- GPSC holding: 100% of total shares
- Expected COD: Q3/2019

Project updates:

CUP-4 provides electricity and steam to support rising demand from industrial users in Asia Industrial Estate and neighboring industrial estate. To increase reliability and stability of the utility platform, The company has been connecting utility network of CUP-4 with CUP-3, which is planned to finish in March 2019.

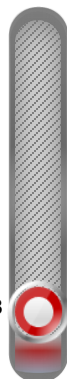
At the end of December 2018, the progress of site construction was over 33%. The construction of control building and high voltage substation have been started. All of main power plant equipment have been procured, which the arrival schedule of the first module is anticipated to be in the beginning of 2019.

Nava Nakorn Electricity Generating (NNEG) Expansion Phase

% Progress

12%

4Q18
12%



Project Summary:

- Nava Nakorn Electricity Generating Company Limited (NNEG) is a gas-fired cogeneration located in Nava Nakorn Industrial Promotion Zone, Pathumthani Province, Thailand. The existing project that started COD since June 2016, has capacity of 125 Megawatts of electricity and 30 Tons per hour of steam and another 30 Tons per hour of steam from auxiliary boiler. NNEG secures Power Purchase Agreement (PPA) with EGAT (SPP Firm) for 90 Megawatts for 25 years, while selling the rest of electricity and all of produced steam to industrial users in Nava Nakorn Industrial Promotion Zone. Due to increasing demand from industrial users, NNEG will expand its capacity further for 60 Megawatts and 10 Ton per hour of steam.
- GPSC holds 30% of total shares.
- SCOD : Q3 2020

Project updates:

At the end of December 2018, the project progress has reached 12%. Main tasks such as site preparation and procurement for main machines and equipment were executed as planned.

Financial Formula

Ratios	Formula
Gross profit margin	$\frac{\text{Gross profit}}{\text{Revenue from sales of goods and rendering of services} + \text{Revenue from finance lease}}$
Net profit margin	$\frac{\text{Net profit}}{\text{Total Revenue}}$
Interest coverage ratio	$\frac{\text{Earnings before interest and tax expenses}}{\text{Interest expense}}$
Net Debt to Equity ratio	$\frac{\text{Interest bearing debts} - (\text{Cash and cash equivalents} + \text{Restricted cash} + \text{Current investments})}{\text{Total shareholder's equity}}$
Debt to Equity ratio	$\frac{\text{Total liabilities}}{\text{Total shareholder's equity}}$
Current Ratio	$\frac{\text{Total current assets}}{\text{Total current liabilities}}$
Quick Ratio	$\frac{\text{Cash and cash equivalents} + \text{Restricted cash} + \text{Current investments} + \text{Trade account receivable}}{\text{Total current liabilities}}$
Debt Service Coverage Ratio (DSCR)	$\frac{\text{EBITDA for DSCR for the last 12 months}}{\text{Principal and interest to be paid in the next 12 months}}$
Earning per share (EPS)	$\frac{\text{Net profit for the company}}{\text{Weighted average number of shares of the company}}$
ROE	$\frac{\text{Net profit for the company}}{\text{Average shareholder's equity}}$
ROA	$\frac{\text{Net profit for the last 12 months}}{\text{Average assets}}$
Book value per share (BVPS)	$\frac{\text{Shareholder's equity of the company}}{\text{Weighted average number of common shares of the company}}$

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