

**Opinion of the Independent Financial Advisor  
Concerning the Asset Acquisition and  
Connected Transaction**

of



**CK Power Public Company Limited**

The Independent Financial Advisor



**Capital Advantage Company Limited**

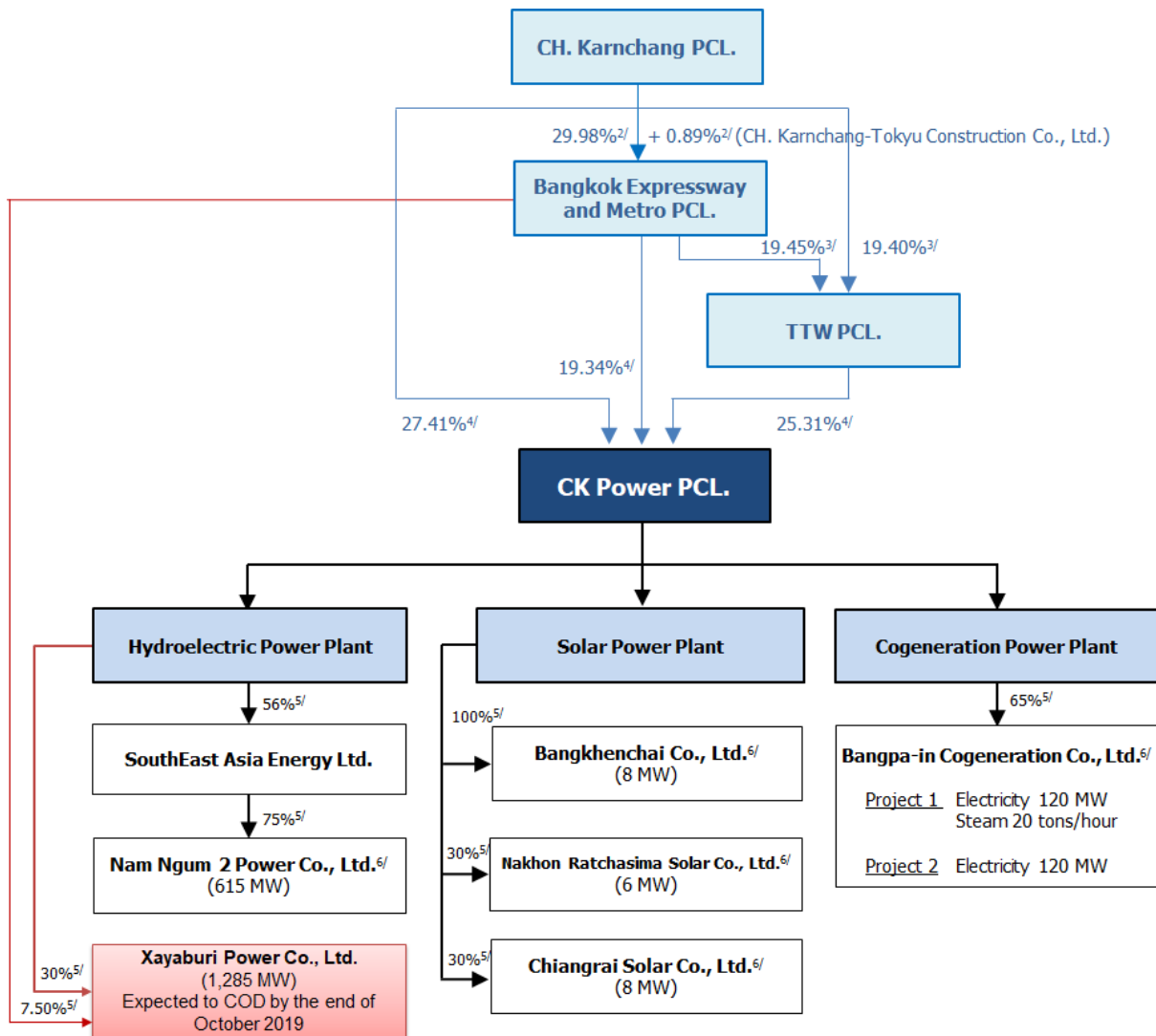
March 15, 2018

## INSERT

of the Opinion of the Independent Financial Advisor Concerning the Asset Acquisition and the Connected Transaction of CK Power PCL. No. 035/2561, dated March 15, 2018  
(Attachment 8 of the Notice to the 2018 Annual General Meeting of Shareholders)

**Page 9:** Amend a chart of "Shareholding Structure of the Company before Entering into the Transaction" to the following:

### Shareholding Structure of the Company before Entering into the Transaction<sup>1/</sup>



Remark:

1/ Shareholding structure of CKP's subsidiaries does not include companies without business operation/project.

2/ Shareholding in BEM as at the book closing date (XO) on February 21, 2018 (Source: Thailand Securities Depository Co., Ltd.).

3/ Shareholding in TTW as at the book closing date (XD) on August 30, 2017 (Source: www.set.or.th).

4/ Shareholding in CKP as at the book closing date (XO) on February 22, 2018 (Source: Thailand Securities Depository Co., Ltd.).

5/ Shareholding in CKP's subsidiaries and associate companies as at February 28, 2018.

6/ As at February 28, 2018, Commercial Operations have already been commenced.

Primary sources of revenue of the Company, based on 2017 financial statements, were from (a) Hydroelectricity Project of SouthEast Asia Energy Ltd. ("SEAN") (which holds shares in Nam Ngum 2 Power Co., Ltd. ("NN2")) in proportion of 47.88% of

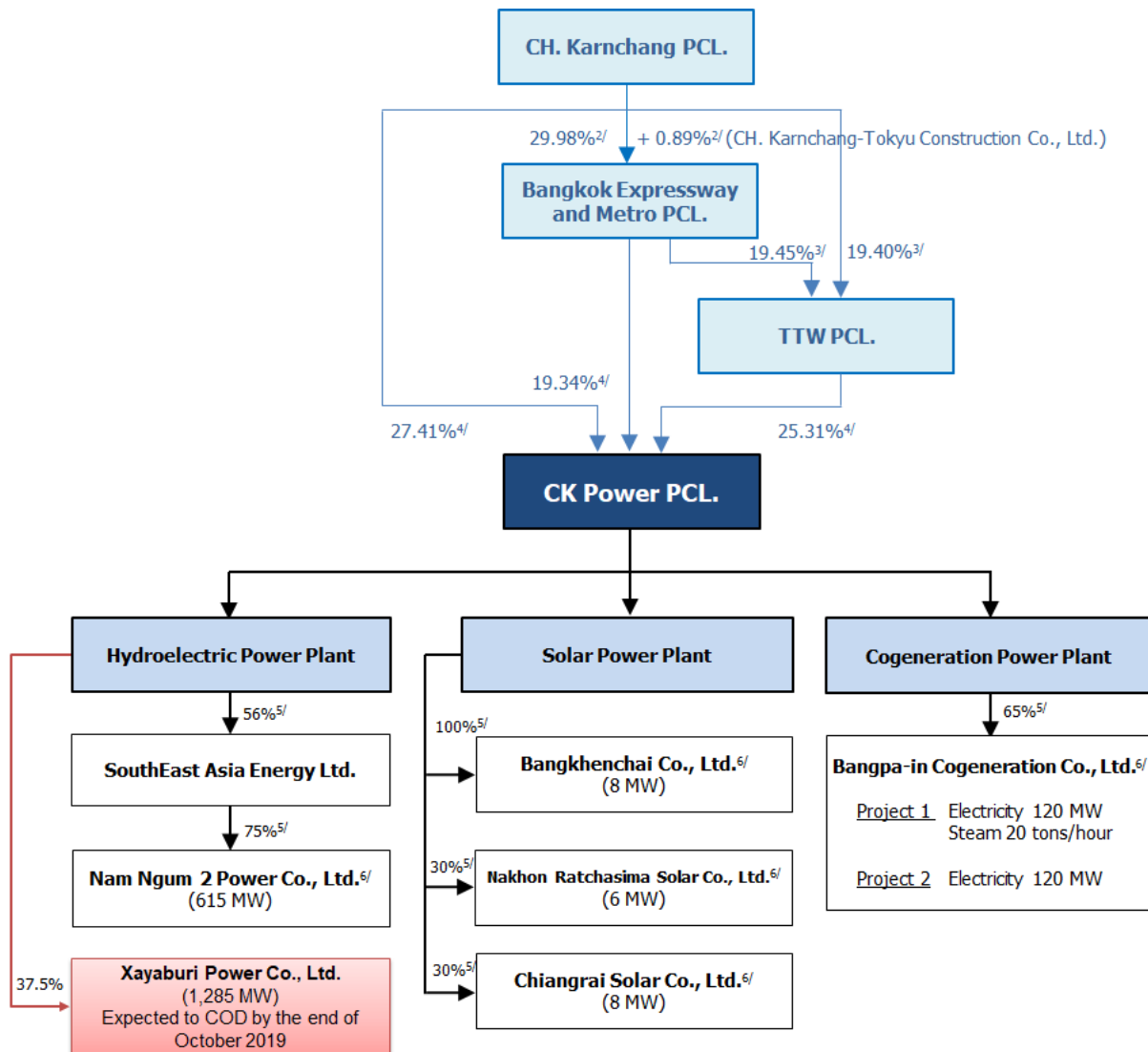
total revenues, and (b) Co-generation Power Project of Bangpa-in Cogeneration Limited ("BIC") in proportion of 47.85% of total revenues.

**Page 9:** Amend Footnote 4 to the following:

"Payment for 30% proportion of shareholding in XPCL until the completion of the Project amounts to no more than Baht 1,596.81 million (from June 2018 onwards), which is in accordance with credit agreement between XPCL and creditors. Amount of not more than Baht 1,596.81 million comprise of (a) XPCL's subsequent capital increase in proportion to its shareholding in XPCL until the completion of the Project for not more than Baht 1,009.11 million and (b) Standby Equity Commitment of not more than Baht 587.70 million which is equity contribution by XPCL's shareholders in proportion to its shareholding in the event that the actual revenue from sale of electricity during Unit Operation Period (UOP) does not meet the forecast."

**Page 10:** Amend a chart of "Shareholding Structure of the Company after Entering into the Transaction" to the following:

**Shareholding Structure of the Company after Entering into the Transaction<sup>1/</sup>**



Remark:

- 1/ Shareholding structure of CKP's subsidiaries does not include companies without business operation/project.
- 2/ Shareholding in BEM as at the book closing date (XO) on February 21, 2018 (Source: Thailand Securities Depository Co., Ltd.).
- 3/ Shareholding in TTW as at the book closing date (XD) on August 30, 2017 (Source: www.set.or.th).
- 4/ Shareholding in CKP as at the book closing date (XO) on February 22, 2018 (Source: Thailand Securities Depository Co., Ltd.).
- 5/ Shareholding in CKP's subsidiaries and associate companies as at February 28, 2018.
- 6/ As at February 28, 2018, Commercial Operations have already been commenced.

Primary sources of revenue of the Company, based on 2017 financial statements, were from (a) Hydroelectricity Project of SouthEast Asia Energy Ltd. ("SEAN") (which holds shares in Nam Ngum 2 Power Co., Ltd. ("NN2")) in proportion of 47.88% of total revenues, and (b) Co-generation Power Project of Bangpa-in Cogeneration Limited ("BIC") in proportion of 47.85% of total revenues.

**Page 17:** Amend Part 1, Clause 1.8 (3) to the following:

"(3) The Company obtains consents from XPCL's creditors under credit agreements and counterparties under other agreements on restriction of share transfer. Presently, the Company is under the process in obtaining consents from XPCL's creditors under credit agreements and counterparties under other agreements on restriction of share transfer."

**Page 34:** Amend Part 3, Clause 5, Sub-clause "Operating Expenses", regarding "Bonus to CHK for early delivery of EPC works" to the following:

"- Bonus to CHK for early delivery of EPC works and allowing XPCL to be able to generate electricity before the PPA's schedule (before the testing and commissioning (scheduled UOP) which is around January 2019. The actual beginning of UOP electricity distribution is expected to be approximately 2 months ahead of the schedule.). Mechanism for calculation is based on the terms and conditions in the EPC contract with CHK. Bonus to CHK is estimated at Baht 606.11 million, which is one-off expense."

**- TRANSLATION -**

*The English Translation of the Independent Financial Advisor's Opinion has been prepared solely for the convenience of foreign shareholders of CK Power Public Company Limited and should not be relied upon as the definitive and official document. The Thai language version of the Independent Financial Advisor's Opinion is the definitive and official document and shall prevail in all aspects in the event of any inconsistency with this English Translation.*

No. 035/2018

March 15, 2018

Subject: Opinion of the Independent Financial Advisor Concerning Asset Acquisition and Connected Transaction of CK Power PCL.

To: Shareholders  
CK Power PCL.

Attachments: 1) Business overview and operating performance of Xayaburi Power Co., Ltd.  
2) Business overview and operating performance of Bangkok Expressway and Metro PCL.

Business overview and operating performance of CK Power PCL. is presented in Part 2 Clause 4 of the Information Memorandum of CK Power PCL., regarding Asset Acquisition and Connected Transaction (Attachment 7) and the 2017 Annual Report of the Company (Attachment 2), enclosed with the notice of the shareholders' meeting.

References: 1) Resolutions of the Board of Directors' Meeting of CK Power PCL. No. 1/2018 held on February 27, 2018  
2) Information Memorandum of CK Power PCL. Re: Asset Acquisition and Connected Transaction dated February 27, 2018, and the amendment on March 8, 2018  
3) Annual registration statement (Form 56-1) of CK Power PCL. for the period ended December 31, 2016-2017  
4) Audited financial statements of CK Power PCL. for the years ended December 31, 2015-2017  
5) Audited financial statements of Xayaburi Power Co., Ltd. for the years ended December 31, 2015-2017  
6) Affidavit, Memorandum of Association, and other information and documents, including interviews with the management and relevant staff of CK Power PCL. and Xayaburi Power Co., Ltd.

Disclaimers: 1) The study results of Capital Advantage Co., Ltd. ("CapAd" or "Independent Financial Advisor" or "IFA") in this report were based on information and assumptions provided by the management of CK Power PCL. and Xayaburi Power Co., Ltd. and the information of the Company disclosed to the public on the websites of the Securities and Exchange Commission ([www.sec.or.th](http://www.sec.or.th)) and the Stock Exchange of Thailand ([www.set.or.th](http://www.set.or.th)).  
2) CapAd shall not be responsible for profits or losses and any impacts resulting from this transaction.  
3) CapAd conducted the study with knowledge, skills and carefulness and on the basis of professional ethics.  
4) CapAd has considered and provided opinion based on the situation and information at the present time. If such situation and information have changed significantly, the study results in this report may be affected.

CK Power PCL. (the "Company" or "CKP")'s Board of Directors' meeting No. 1/2018 held on February 27, 2018 has resolved to propose to the Annual General Meeting of Shareholders 2018 to consider and approve the acquisition of 201,457,499 shares (or 7.50% of registered capital) of

Xayaburi Power Co., Ltd. ("XPCL") in the amount of Baht 2,065.00 million from Bangkok Expressway and Metro PCL. ("BEM") and the payment of no more than Baht 399.20 million for subsequent capital increase in proportion to the shareholding in XPCL until completion of the Xayaburi Hydropower Project (the "Project").

The acquisition of XPCL's shares and the payment for subsequent capital increase in XPCL in proportion to the shareholding until completion of the construction of the Project are deemed as an acquisition of assets pursuant to the Notification of the Capital Market Supervisory Board No. Tor.Jor. 20/2551 Re: Rules on Entering into Material Transactions Deemed as Acquisition or Disposal of Assets, and the Notification of the Board of Governors of the Stock Exchange of Thailand Re: Disclosure of Information and Other Acts of Listed Companies Concerning the Acquisition or Disposition of Assets B.E. 2547 and its amendments ("Acquisition or Disposition Notification"). The maximum size of the transaction is equal to 12.05%, on the net tangible assets ("NTA") basis, according to the Company's consolidated financial statements ended December 31, 2017. As the total transaction size is lower than 15% of the NTA, the Company therefore is not required to disclose the information concerning the transaction to the Stock Exchange of Thailand ("SET"). *(In the previous 6 months period, the Company has not entered into any acquisition or disposal transaction.)*

However, the acquisition of XPCL's shares is considered a connected transaction pursuant to the Notification of the Capital Market Supervisory Board No. Tor.Jor. 21/2551 Re: Rules on Connected Transactions and the Notification of the Board of Governors of the Stock Exchange of Thailand Re: Disclosure of Information and Other Acts of Listed Companies on Connected Transactions B.E. 2546 and its amendments ("Connected Transaction Notification") because BEM is the Company's major shareholder, holding a total of 1,425,450,843 shares in the Company, or 19.34% of the total paid-up capital, as of February 22, 2018. Furthermore, the Company and BEM have some common directors. The size of such connected transaction is equal to 15.93% of NTA of the Company and its subsidiaries as of December 31, 2017, which exceeds 3% of NTA of the Company and its subsidiaries. Therefore, the Company is required to disclose the information regarding such transaction to the SET, appoint an independent financial advisor to provide an opinion to shareholders, and propose the transaction to the shareholders' meeting for approval with a required affirmative vote of not less than three-fourths of the total number of votes of shareholders attending the meeting and having the rights to vote, excluding the vote of shareholders having conflict of interest. *(In the previous 6 months period, the Company has not entered into any connected transaction with BEM.)*

The Company has appointed Capital Advantage Co., Ltd. as an independent financial advisor ("CapAd" or "Independent Financial Advisor" or "IFA") to provide an opinion to the shareholders concerning reasonableness and fairness of price and conditions for the said asset acquisition transaction and connected transaction.

CapAd has studied details of the Information Memorandum on Asset Acquisition and Connected Transaction of the Company, information obtained from interviews with executives and the management of the Company and XPCL, and documents received from the Company and XPCL, such as financial statements, financial projection, documents relating to the transaction, information disclosed to the public, information disclosed on websites of the Stock Exchange of Thailand ("SET") and the Office of the Securities and Exchange Commission ("SEC"), and financial information available from various websites as a basis for expressing our opinion on such transaction. CapAd does not certify or warrant the accuracy or completeness of all information provided for us by the Company, XPCL, and/or executives, and/or the management of the Company and XPCL.

The opinion of CapAd in this report is based on the assumption that all the information and documents received are accurate and complete, and reflects current operating environment and most up-to-date information at the time of issuance of this report. However, there may be an incident having a material impact on XPCL's business operation and financial projection, valuation and analysis of the independent financial advisor, as well as decision of the shareholders on the asset acquisition and connected transaction.

In providing opinion for the shareholders, we take into account the reasonableness, price and conditions for the transaction together with all relevant factors. We have considered such information thoroughly and reasonably, according to the professional standards.

The attachments to this report are deemed as part of this opinion report and are the information that the shareholders should consider jointly with this report.

After considering and studying all information on the asset acquisition and connected transaction, CapAd would like to summarize the study results as follows.

<b>Abbreviation</b>	
The "Company" or "CKP"	CK Power Public Company Limited
"BEM"	Bangkok Expressway and Metro Public Company Limited
"XPCL"	Xayaburi Power Company Limited
"CK"	CH. Karnchang Public Company Limited
"CHK"	CH. Karnchang (Lao) Company Limited
"TTW"	TTW Public Company Limited
"SEAN"	SouthEast Asia Energy Limited
"NN2"	Nam Ngum 2 Power Company Limited
"BIC"	Bangpa-in Cogeneration Limited
"CRS"	Chiangrai Solar Company Limited
"NRS"	Nakhon Ratchasima Solar Company Limited
"BKC"	Bangkhenchai Company Limited
"AGM"	Annual General Meeting of Shareholders 2018 of the Company, to be held on April 10, 2018
The "Project"	Xayaburi Hydroelectric Power Project
"EGAT"	Electricity Generating Authority of Thailand
"Lao PDR"	Laos People's Democratic Republic
"GOL"	Government of Laos People's Democratic Republic
"EdL"	Electricite du Laos
"EdL-Gen"	EDL-Generation Public Company
"Pöyry"	Pöyry Energy Limited
"CNR"	Compagnie Nationale du Rhône
"kWh", "MWh", "GWh"	KiloWatt-hour, MegaWatt-hour, and GigaWatt-hour (Million Units), respectively
"PE"	Primary Energy
"SE"	Secondary Energy
"EE"	Excess Energy
The "Concession"	The Project under Build-Owned-Operate-Transfer (BOOT) concession between the government of Lao PDR and XPCL. As the concessionaire, XPCL will invest and construct the Project, own the Project's assets, and manage the Project after the completion of the construction. After the expiry of the concession period, XPCL will transfer the ownership of all related assets to the government of Lao PDR.
"UOP"	Unit Operation Period – installation, test, and commencement period of power generating unit, starting from the date on which EGAT issues a certificate for the readiness in electricity generation to the date on which the Project starts generating revenue commercially.
"COD"	Commercial Operating Date
"EGCO"	Electricity Generating Public Company Limited
"GPSC"	Global Power Synergy Public Company Limited
"NSC"	Natee Synergy Company Limited, which is a subsidiary of GPSC
"PTT"	PTT Public Company Limited
"PTTGC"	PTT Global Chemical Public Company Limited
"PT"	PT (Sole) Company Limited
"CapAd" or "Independent Financial Advisor" or "IFA"	Capital Advantage Company Limited
"SEC"	The Securities and Exchange Commission, Thailand
"SET"	The Stock Exchange of Thailand
"Acquisition or Disposition Notification"	The Notification of the Capital Market Supervisory Board No. Tor.Jor. 20/2551 Re: Rules on Entering into Material Transactions Deemed as Acquisition or Disposal of Assets, and the Notification of the Board of Governors of the Stock Exchange of Thailand Re: Disclosure of Information and Other Acts of Listed Companies Concerning the Acquisition or Disposition of Assets B.E. 2547 and its amendments
"Connected Transaction Notification"	The Notification of the Capital Market Supervisory Board No. Tor.Jor. 21/2551 Re: Rules on Connected Transactions and the Notification of the SET's Board of Governors Re: Disclosure of Information and Other Acts of Listed Companies on Connected Transactions B.E. 2546 and its amendments
"NTA"	Net Tangible Assets
"WACC"	Weighted Average Cost of Capital

## Executive Summary

CK Power PCL. (the "Company" or "CKP")'s Board of Directors' meeting No. 1/2018 held on February 27, 2018 has resolved to propose to the Annual General Meeting of Shareholders 2018 to consider and approve the acquisition of 201,457,499 shares (or 7.50% of registered capital) of XPCL in the amount of Baht 2,065.00 million from BEM and the payment of no more than Baht 399.20 million for subsequent capital increase in proportion to the shareholding in XPCL until completion the Project.

The maximum size of the transaction is equal to 12.05%, based on the net tangible assets basis, according to the Company's consolidated financial statements for the year ended December 31, 2017. The Company, therefore, is not required to disclose the information concerning the transaction to the Stock Exchange of Thailand ("SET"). However, the acquisition of XPCL's shares is considered as a connected transaction pursuant to the Notification of the Capital Market Supervisory Board No. Tor.Jor. 21/2551 Re: Rules on Connected Transactions and the Notification of the Board of Governors of the Stock Exchange of Thailand Re: Disclosure of Information and Other Acts of Listed Companies on Connected Transactions B.E. 2546 ("Connected Transaction Notification") because BEM is the Company's major shareholder, holding a total of 1,425,450,843 shares in the Company, representing 19.34% of the Company's paid-up capital, as of February 22, 2018. Furthermore, the Company and BEM have some common directors. In this regard, as of December 31, 2017, the size of such connected transaction is equal to 15.93% of net tangible assets ("NTA") of the Company and its subsidiaries, which exceeds 3% of NTA of the Company and its subsidiaries. Therefore, the Company is required to disclose the information regarding such transaction to the SET, appoint an independent financial advisor to provide an opinion to shareholders, and propose the transaction to the shareholders' meeting for approval with a required affirmative vote of not less than three-fourths of the total number of votes of shareholders attending the meeting and having the rights to vote, excluding the vote of the shareholders having conflict of interest.

In this respect, Capital Advantage Co., Ltd. ("CapAd" or "Independent Financial Advisor" or "IFA"), as an independent financial advisor appointed by the Company, has considered the objectives and necessity of the transaction, including the advantages, disadvantages, benefits, and risks, as follows:

Since June 2015, the Company has invested in 30% of registered capital of XPCL, whose construction of Xayaburi Hydroelectric Power Project (the "Project") Phase 1 just completed. The Company has made the investment in XPCL for almost 3 years, and the Project has made constant progress. At the end of January 2018, the Project is 89.29%<sup>1</sup> completed. The Company, therefore, was interested in increasing its investment in XPCL in order to recognize the performance of XPCL proportionately, and contacted BEM with an offer to purchase 7.50% of XPCL's registered shares. This is an appropriate time for the Company to make an additional investment in XPCL because the

<sup>1</sup> Evaluated by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).

Pöyry Energy Limited (Switzerland) is a company under Pöyry Energy Limited ("Pöyry"). Pöyry incorporated in 1958 as an international engineering, and project planning and developing consultant, with expertise in hydropower, renewable energy, thermal power, nuclear, transmission and distribution system, power management, paper and pulp, chemical and bio refinery, mine and metal, forestry, transportation, water, and property. Pöyry is listed company on Helsinki Stock Exchange, Finland. In 2017, total revenues are Euro 522 million. It employs 5,500 experts in 130 offices, located in 40 countries.

Pöyry has more than 120 years of experience in hydropower plant, with global installed capacity of more than 100GW such as

- 300 MW Run-of-River Hydropower Plant, Freudenu, Australia
- 100 MW Run-of-River Hydropower Plant, Rheinfelden, Switzerland
- 1,500 MW Run-of-River Hydropower Plant, Nathpa Jhakri, India
- 280 MW Hydropower Plant, Run-of-River Dhauliganga, India
- 480 MW Hydropower Plant, Limberg II, Australia
- 670 MW Hydropower Plant, Deriner, Turkey
- 2,400 MW Hydropower Plant, Atatürk, Turkey
- 372 MW Hydropower Plant, Xe Pian and Xe Namnoy, Lao PDR
- 615 MW Hydropower Plant, Nam Ngum 2, Lao PDR
- 550 MW Hydropower Plant, Mauvoisin, Switzerland
- 690 MW Hydropower Plant, Kárahnjúkar, Iceland

And many other hydropower plants in Europe, Bhutan, Chile, Peru, Egypt, and Iran.

(Please see additional information at <http://www.poyry.com/> and <https://en.wikipedia.org/wiki/P%C3%B6yry>)



Project has made a lot of progress and nearly commences commercial operation, which will generate recurring income and good return on investment for its shareholders.

The advantages and benefits from such asset acquisition and connected transaction are:

- (1) Conformity to the Company's business operation policy to become a holding company investing in electricity generation and distribution business, and creating value-added for the Company: The additional investment in a big power production project with capacity of 1,285MW and power purchase agreement with a trustworthy counterparty provides the Company with additional revenue in proportion to the additional investment and appropriate returns. Furthermore, it increases the Company's long-term business prospect and attractiveness to investors, which will benefit fund raising activities for future projects.
- (2) An additional investment in a project with long-term power purchase agreement covering nearly the entire 31 years of concession period, starting from Commercial Operation Date ("COD"): The Project signed the power purchase agreement with EGAT for a period of 29 years, starting from COD, accounting for 95% of annual power generation capacity. Furthermore, EdL will purchase electricity from the Project for the whole concession period of 31 years starting from COD.
- (3) An additional investment in XPCL at an appropriate time as the Project nearly commences commercial operation: Construction of the Project is 89.29%<sup>2</sup> completed, as of January 31, 2018. With only over a year remaining until the completion of the construction, risk from delay of construction is greatly reduced.
- (4) Increase in long-term revenues and business prospect of the Company: COD is scheduled in late October 2019 and the Project expects to generate net profit consistently throughout the entire concession period. Consequently, the Company's revenue will increase and the Company has an opportunity to get dividends from XPCL. And it increases long-term business prospect of the Company.
- (5) Growth in the Company's assets base from additional investment in XPCL and recognition of future profit under equity method.
- (6) XPCL's strong shareholder base, such as Electricity Generating Public Company Limited ("EGCO"), Natee Synergy Co., Ltd. (a company under PTT PLC. Group), and Electricite du Laos ("EdL"), helps to enhance confidence among XPCL's stakeholders.
- (7) An opportunity of personnel development for large-scale project operation that will benefit the management of the Company's future power projects.
- (8) The Project's utilization of clean energy and environmental-friendly aspect: The Project utilizes hydropower to generate electricity and does not emit any carbon dioxide to the atmosphere. In addition, the Project has been designed to keep environmental and social impact at a minimum and in accordance with Lao PDR's laws and Mekong River Commission (MRC)'s regulations.

Nonetheless, the transaction still involves some disadvantages and risks as follows.

- (1) An obligation to pay for XPCL's subsequent capital increase in proportion to its shareholding in the amount of no more than Baht 399.20 million until the completion of the Project: The Company plans to issue and sell Thai Baht debenture in the amount of no more than Baht 2,500 million.
- (2) An increase in the Company's liabilities, interest expenses, and D/E ratio from the issuance and sale of debenture domestically: If the Company receives the full amount of Baht 2,500 million, its interest-bearing debt to equity ratio will max out at 0.82 times in 2018, which is still below 3 times level of financial covenant specified in the terms and conditions of the debenture.
- (3) Risk from adequacy of funding in the event that the sale of debenture generates inadequate amount of fund required, and risk from maturity mismatch of financing.
- (4) Risk associated with not being a major shareholder in XPCL: The Company does not have complete control in XPCL after increasing its shareholding to 37.50% of XPC's registered capital.
- (5) Risk from the power purchase agreement with EGAT not covering the entire concession period: The power purchase agreement with EGAT covers 29 years out of 31 years of concession period. XPCL will discuss with EGAT on extending the agreement for another 2 years.
- (6) Risk and impact on the Company from the failure of Xayaburi Hydroelectric Power Project to commence its commercial operation as scheduled: There are still some risks associated with

<sup>2</sup> Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).

installation and test-run of electricity generating units, which is scheduled to commence the first electricity generating unit in October 2018.

- (7) Risk and impact on the Company from cost overrun: Because the Project is 89.29%<sup>3</sup> completed and XPCL's creditors have closely monitored cost of project, risk from cost overrun is greatly reduced and limited.
- (8) Risk and impact on XPCL from the fluctuation of Mekong water flow rate which could affect electricity generation to be supplied to EGAT and EdL according to the power purchase agreement: The water source is from the river upstream, including rainfalls, may have a constraint of water quantity which depends on climate and season in each time period. However, before embarking on this project investment, XPCL has studied historical records on the adequacy of water flow rate prior to project designing. In addition, XPCL's technical advisor, CNR Engineering of Compagnie Nationale du Rhône ("CNR"), has constantly monitored water level throughout the construction period and found that water level is adequate for power production in accordance with the power purchase agreement with EGAT and EdL.
- (9) Risk from natural disasters which will affect structure and power production equipment of the Project: The Project has been designed to withstand quakes up to 7.5 on the Richter scale. Moreover, the project has installed spillway gates with a maximum discharge capacity of 47,500 cubic meters per second. It is therefore believed that the Project's structure is strong enough to withstand earthquakes and there are an adequate number of spillway gates to protect against dam overflows.
- (10) Risk associated with cost control in project management in the future: Currently, XPCL plans to manage the Project during commercial operation phase. If there is a change of plan, it may result in higher operating costs.
- (11) Risk from floating interest rates: The long-term Credit Facilities Agreement executed by XPCL is partly denominated in US dollars. To hedge against such interest rate risk, XPCL has executed an interest rate swap agreement from the floating rate to a fixed rate, initially covering the period up to the end of 2020.
- (12) Risk from foreign exchange rate fluctuation: XPCL could be exposed to risk from foreign exchange rate fluctuation arising from part of the long-term loan and interest which are payable in US dollars. Despite that, XPCL will generate some revenues in US dollar currency from the production and distribution of primary energy to EGAT under the power purchase agreement, which is deemed as a natural hedge against the exchange rate risk. XPCL also plans to manage any remaining risk by closely following up on the foreign exchange rate trend and executing a hedging contract from time to time as deemed appropriate.
- (13) Opportunity loss to invest in other projects, if opportunity to invest in interesting project with good returns arises in the future.

In view of the objective and necessity of the transaction together with the advantages, disadvantages, benefits and risk factors, we are of the opinion that the transaction will provide greater revenue potential and future business prospect for the Company. The Company is aware of those risks and has already prepared and devised plans to cope with such risks. Therefore, **the asset acquisition and connected transaction is considered reasonable.**

In considering the appropriateness of price and conditions of the connected transaction, CapAd is of the view that the most appropriate approach in valuing XPCL business is the discounted cash flow method, which reflects future performance of XPCL. The appropriate value of XPCL business is in the range of Baht 27,509.84 – 32,103.89 million (100% of XPCL's registered capital), or Baht 2,063.24 – 2,407.79 million (7.50% of XPCL's registered capital), which is (0.09%) – 16.60% higher (lower) than the transaction price. **Therefore, the transaction price to acquire 7.50% of XPCL business at Baht 2,065.00 million is appropriate because it is in the range of fair value of XPCL's shares.**

After considering reasonableness and appropriateness of the transaction price, CapAd opines that **the Company's shareholders should approve this asset acquisition and connected transaction.**

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<sup>3</sup> Please see Footnote 2.

Shareholders should carefully study all documents and information attached to the notice to this shareholders' meeting, for the sake of their own decision making. Decision whether to approve the asset acquisition and connected transaction or not rests primarily and is the sole discretion of the shareholders.

CapAd, as the Independent Financial Advisor, hereby certifies that it has provided the above opinion cautiously in accordance with professional standard for the benefit of the shareholders.

Details of the Independent Financial Advisor's opinion are presented as follows.

## Part 1: General Information on the Transaction

### 1. Nature and Details of the Transaction

#### 1.1 Objective and Background of the Transaction

The Board of Directors' Meeting of CK Power Public Company Limited (the "Company" or "CKP") No. 1/2018, held on February 27, 2018, resolved to propose to the 2018 Annual General Meeting of Shareholders to consider and approve the acquisition of 201,457,499 shares of Xayaburi Power Company Limited ("XPCL"), representing 7.50% of XPCL's registered capital, in the amount of approximately Baht 2,065.00 million, from Bangkok Expressway and Metro Public Company Limited ("BEM"), and to pay for XPCL's subsequent capital increase in proportion to its shareholding in XPCL until the completion of XPCL's Xayaburi Hydropower Project (the "Project"), totaling approximately no more than Baht 399.20 million.

#### 1.2 Date of the Transaction

The Company will enter into the transaction after it obtains approval from the 2018 Annual General Meeting of Shareholders, to be held on April 10, 2018, and BEM obtains approval from the 2018 Annual General Meeting of Shareholders, to be held on April 20, 2018. The Company expects to complete the transaction to purchase XPCL's shares and sign a share purchase agreement with BEM within June 2018.

#### 1.3 Parties Involved and Their Relationship

##### 1.3.1 Parties involved and their relationship

Buyer of XPCL's shares	: CK Power PCL. (the "Company" or "CKP")
Seller of XPCL's shares	: Bangkok Expressway and Metro Public Company Limited ("BEM")
Relationship between the Buyer and the Seller	<ol style="list-style-type: none"> <li>1. BEM is a major shareholder of the Company. As of February 22, 2018, the share registration closing date (XO), BEM held a total of 1,425,450,843 shares in the Company, or 19.34% of the Company's total issued and paid-up capital.</li> <li>2. CH. Karnchang Public Company Limited ("CK") is a major shareholder of the Company. As of February 22, 2018, the share registration closing date (XO), CK held a total of 2,020,275,478 shares in the Company, or 27.41% of the Company's total issued and paid-up capital. In addition, CK is a major shareholder of BEM. As of February 21, 2018, the share registration closing date (XO), CK held a total of 4,582,121,829 shares in BEM, or 29.98% of BEM's total issued and paid-up capital.</li> <li>3. Mr. Plew Trivisvavet is a director and chairman of the executive committee of the Company, vice chairman of the board of directors and chairman of the executive board of BEM, and the father of Dr. Supamas Trivisvavet and Mr. Thanawat Trivisvavet.</li> <li>4. Dr. Supamas Trivisvavet is a director of the Company, a daughter of Mr. Plew Trivisvavet, and the spouse of Mr. Alvin G, who is a management of BEM.</li> <li>5. Mr. Thanawat Trivisvavet is a director and managing director of the Company, and a son of Mr. Plew Trivisvavet.</li> <li>6. Mr. Prasert Marittanaporn is a director of the Company, a director of CK, and the spouse of Mrs. Payao Marittanaporn, who is a director and managing director of BEM.</li> </ol>

##### Remark:

- Position and relationship with the Company as of February 28, 2018.
- Position and relationship with BEM as of February 28, 2018.
- Shareholding in the Company as of February 22, 2018 (information from the Company's share registration closing date (XO) provided by The Thailand Securities Depository Co., Ltd. ("TSD")). Shareholders who are eligible to attend the AGM 2018 on April 10, 2018 will be from the Company's share registration closing date (XM) on March 13, 2018.
- Shareholding in BEM as of February 21, 2018 (information from BEM's share registration closing date (XO) provided by TSD).

##### 1.3.2 Detail of connected persons and/or persons with conflict of interests and are ineligible to vote

List of connected persons and/or persons with conflict of interests and are ineligible to vote in the agenda 8 Re: To consider approving the acquisition of shares in Xayaburi Power Company Limited from Bangkok Expressway and Metro Public Company Limited at the 2018 Annual General Meeting of Shareholders on April 10, 2018 is shown Clause 2, Sub-Clause 5, in the Information Memorandum of

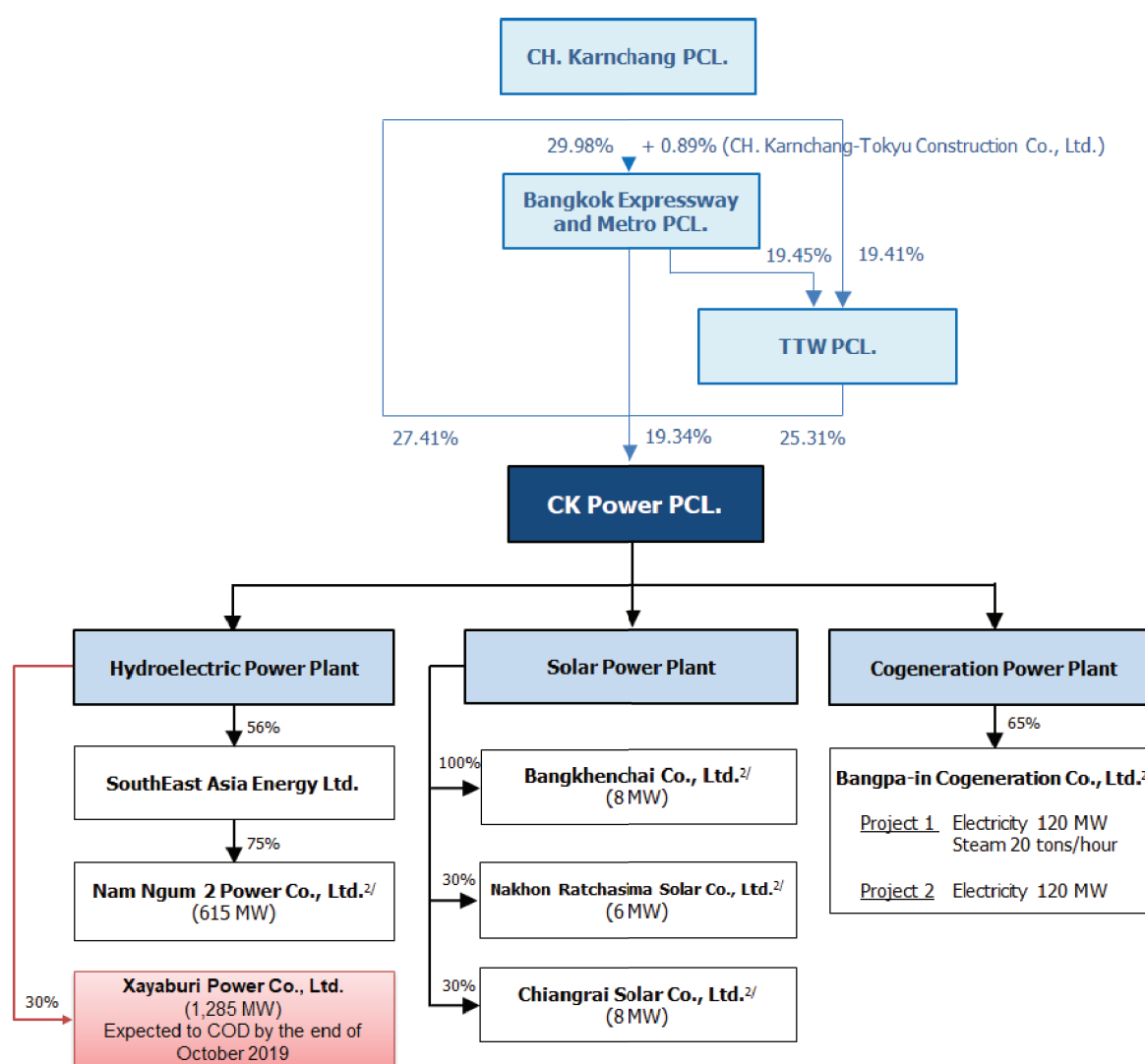
the Company on the asset acquisition and connected transaction (Attachment 7), enclosed with the Invitation to the 2018 Annual General Meeting of Shareholders.

#### 1.4 General Characteristics of the Transaction

The Company will purchase 201,457,499 ordinary shares of XPCL, which operates hydropower generation and distribution business, or 7.50% of XPCL's registered capital, from BEM, who is a major shareholder of the Company, in the amount of approximately Baht 2,065.00 million, and pay for the subsequent capital increase in proportion to its shareholding in XPCL until the completion of the Project (only the proportion in this transaction of 7.50% of XPCL's registered capital) in the amount of no more than Baht 399.20 million. The Company expects to complete such transaction within June 2018.

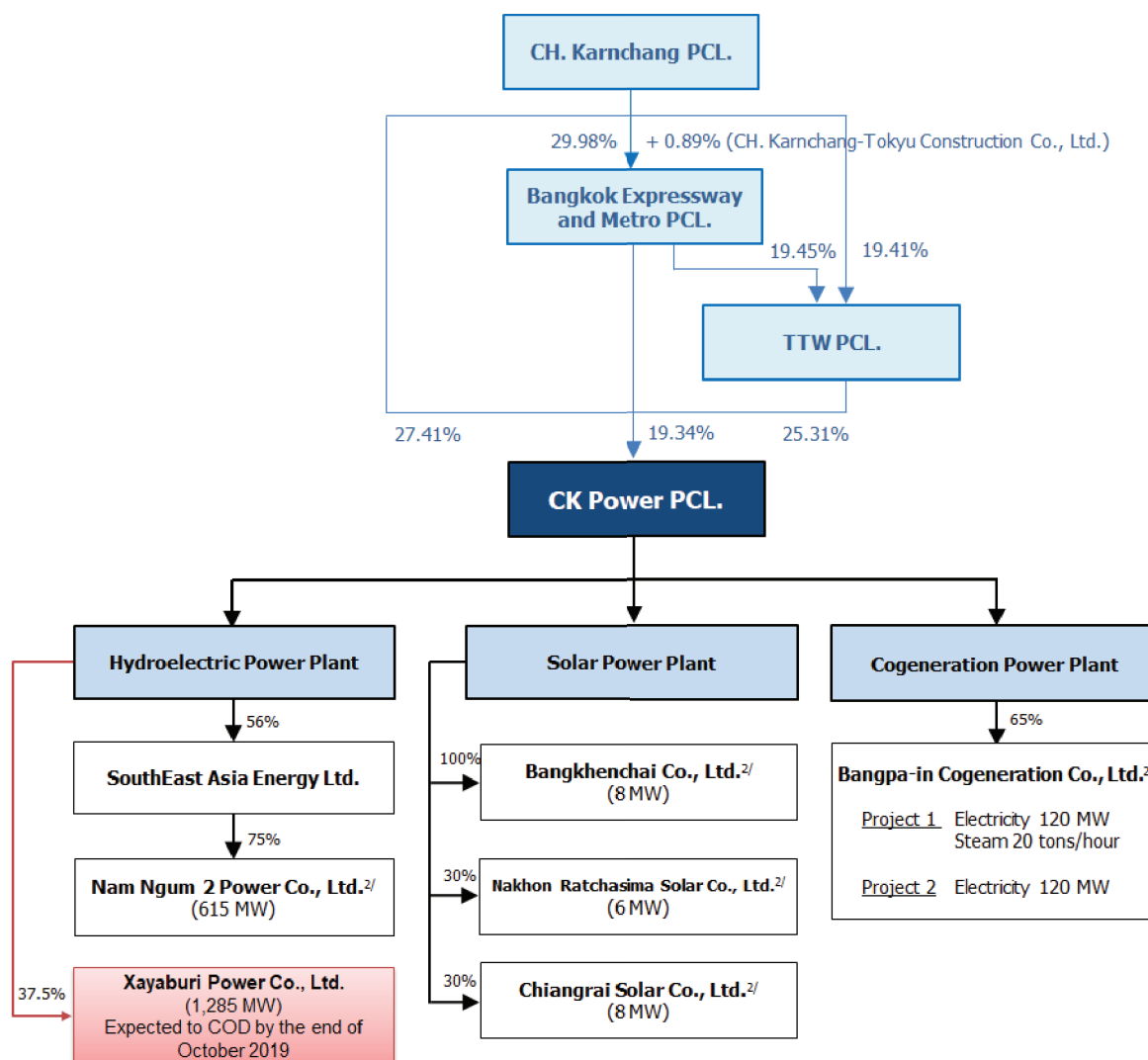
Upon the completion of the transaction, the proportion of the Company's shareholding in XPCL will increase from 30.00%<sup>4</sup> to 37.50% of XPCL's registered capital.

#### Shareholding Structure of the Company before Entering into the Transaction<sup>1/</sup>



<sup>4</sup> Payment for 30% proportion of shareholding in XPCL until the completion of the Project amounts to no more than Baht 1,596.81 million (from June 2018 onwards), which is in accordance with credit agreement between XPCL and creditors.

## Shareholding Structure of the Company after Entering into the Transaction<sup>1/</sup>



Remark:

1/ Shareholding structure does not include companies without business operation/project.

2/ Commercial operations have already been commenced.

Primary sources of revenue of the Company, based on 2017 financial statements, were from (a) Hydroelectricity Project of SouthEast Asia Energy Ltd. ("SEAN") (which holds shares in Nam Ngum 2 Power Co., Ltd. ("NN2")) in proportion of 47.88% of total revenues, and (b) Co-generation Power Project of Bangpa-in Cogeneration Limited ("BIC") in proportion of 47.85% of total revenues.

## 1.5 Details of Assets Being Acquired

### 1.5.1 Details of assets being acquired

The Company will acquire 201,457,499 XPCL's shares, representing 7.50% of XPCL's registered capital, in the amount of approximately Baht 2,065.00 million, and pay for subsequent capital increase in proportion to its shareholding in XPCL until the completion of the Project, totaling no more than Baht 399.20 million.

XPCL was incorporated on June 22, 2010 as a limited company under the laws of Lao PDR, with the objective to operate Xayaburi Hydropower Project, which is located in Mekong River near Xayaburi. It is located on the joint area between Xayaburi and Luang Prabang, about 80 kilometers from Luang Prabang.

Xayaburi hydropower plant is a project under the Build-Own-Operate-and-Transfer (BOOT) concession agreement between the Government of Lao PDR and XPCL. XPCL, as a concessionaire, will

design, develop, construct and operate the project over a concession period of 31 years from the Commercial Operation Date ("COD"). The project has a total installed capacity of 1,285 MW and will generate power of approximately 7,246 GWh per year, or at a capacity of 1,225 MW, for distribution to the Electricity Generating Authority of Thailand ("EGAT") and about 343 GWh per year, or at a capacity of 60 MW, for supply to the Electricity du Laos ("EdL"). Upon expiration of the concession period, the Project shall be delivered to the Government of Lao PDR unless the concession period is extended.

Currently, the Project is still under construction. As of January 31, 2018, the construction was 89.29%<sup>5</sup> of total project value completed, and the Project expects to commence test-running electricity generating units starting from October 2018 onwards and selling electricity to EGAT (Unit Operation Period: "UOP") upon the completion of the testing of each electricity generating unit. COD will commence in late October 2019.

### **Project Location and Aerial Photo**

Project Location



Source: The Company



Source: <https://www.google.co.th/maps>, GPS: 19°14'42.0"N 101°49'13.5"E

### **General Characteristics of the Project**



Source: The Company

<sup>5</sup> Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).



### Detail of Xayaburi Hydropower Project

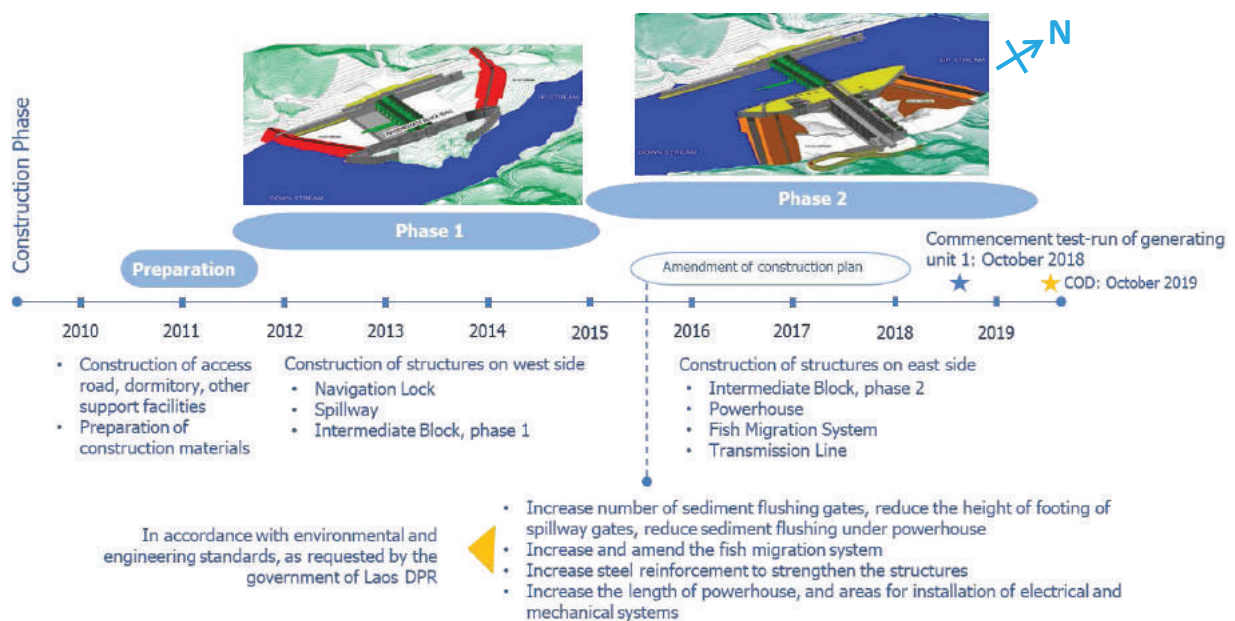
Xayaburi Hydropower Project is a run-of-river barrage which produces electricity by increasing the level of water without diverting water from Mekong River and without storing water like storage dams. By building a barrage, the level of water in Mekong River will be higher only in the section between Xayaburi and the south of Luang Prabang and will be close to the maximum height of water level during the natural flood season. The level of water in the lower part of Mekong River will be at the normal natural water level.

Xayaburi Hydropower Project features a reinforced concrete structure of 880 meters in length, consisting of a powerhouse, a navigation lock, a spillway, and fish passing facilities. The power plant has a 28.5-meters-height rated net head, with seven 175-MW electricity generating units to produce electricity for EGAT, and one 60-MW electricity generating unit to produce electricity for Lao PDR. The plant has a total installed capacity of 1,285 MW and can generate total power of 7,589 GWh or million units per year.

Xayaburi Hydropower Project has been designed to have a 12x700-meter navigation lock on the west side of the spillway to accommodate water transport up to 2 concurrent 500-ton vessels, and an 18-meters-wide fish passing system for fish preservation with a fish screen on the east side of the Project. There are a total of 11 water gates (with a total length of 235 meters), four of which are added with a sediment flushing system, with a maximum discharge capacity of 47,500 cubic meters per second to help release water during the flood season. When the project is completed, the daily water discharge will be equal to the amount of water flow-in, without storing water. As such, the water quantity of Mekong River will be at the natural level throughout the year.

### Construction Stages and Progress of Xayaburi Hydropower Project Construction

Xayaburi Hydropower Project construction is divided into three stages as follows:



a) Preparation Phase (commenced in mid-2009 and completed in 2011): This stage entails construction of an access road, dormitory, office building, and all support facilities for the project construction, such as preparation and construction of stone crushing mill, sand crushing mill, and concrete mixing mill. For the construction of the power plant, this stage encompasses the construction of reservoir for water used in concrete mixing, a conveyor belt system for delivering concrete, and factory for production of parts. In addition, it includes the procurement of adequate and appropriate materials for construction.

b) Construction Phase 1 (2011 – 2015): In this phase, the structure is constructed on the west side of the project, comprising navigation lock, spillway, and intermediate block phase 1. Intermediate block is a core structure linking the spillway and the powerhouse and a part of the power plant, and building for controlling water for fish passing facilities.



The construction begins with the intermediate block in the middle of the river and then the cofferdam to block the western section of the river so that water will flow through only the east side of the intermediate block. After that, water inside the cofferdam is siphoned out until it is dry in order to start construction of navigation lock, spillway, and intermediate block phase 1.

Presently, Phase 1 construction is completed in accordance with the schedule in early 2015. Then, the construction plan has been improved in order to meet the requirement of the environmental and engineering standards, namely increase water gates with sediment flushing system, reduction of footing of spillway gates, increase fish passing facilities, and increase steel reinforcement to strengthen the overall structure.

Before commencing the construction in Phase 2, the cofferdam on the west will be demolished to allow water to flow through the spillway into the downstream section of the river. Then, a new cofferdam will be built to block the eastern section of the river instead so that water will flow through only the west side of the intermediate block. These two diversions of water flow are deemed as two critical stages, which XPCL has already achieved.

c) Construction Phase 2 (2015 – 2019): The construction begins with a siphoning of water inside the new cofferdam on the east until it is dry. Then, the intermediate block phase 2, powerhouse, and fish passing facilities will be constructed, as well as the installation of gates for spillway and water gates for the powerhouse, transmission lines, and test-run of electricity generating units.

### **Photos of the Project, as of February 9, 2018**



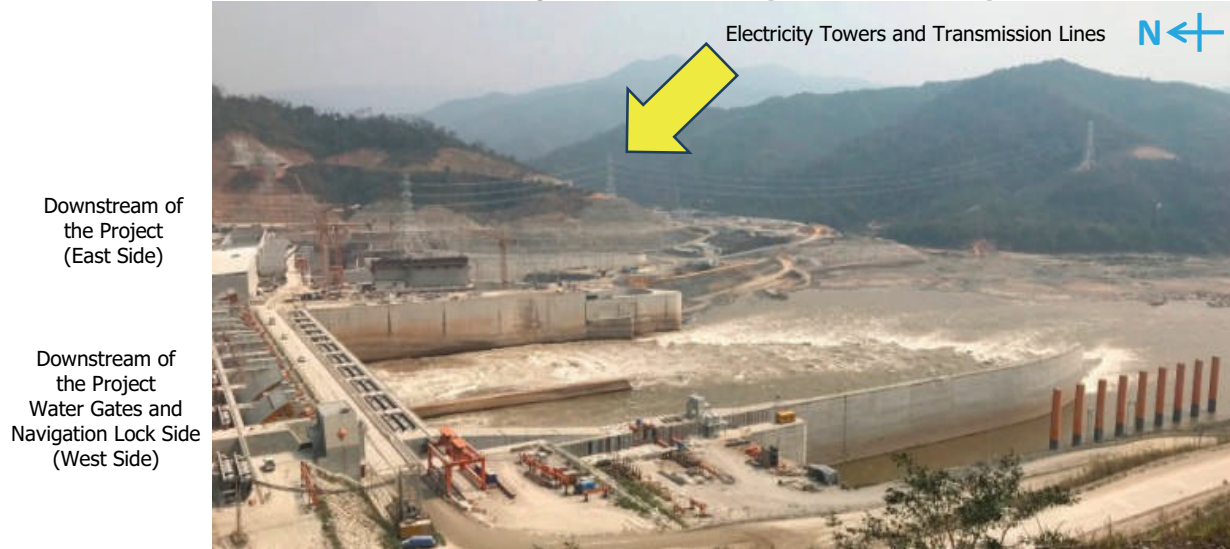
**Upstream of the Project**



Upstream of the Project, water gates side.

Removal of cofferdam on the north of the Project, powerhouse side.

### Downstream of the Project and Electricity Transmission System



### Downstream of the Project, Power Plant Side



### Inside the Powerhouse (Inside the Project)



Source: Photos taken by the Independent Financial Advisor on February 9, 2018.

The Company will start test-running of hydro turbines and electricity generating units in October 2018 by fully open spillway gates until water reaches required level. Then, water is channeled through electricity generating unit 1. Electricity generated during installation, testing, and commencement (UOP) will be sold to EGAT. Then electricity generating unit 2 – 8 will be tested sequentially for a period of one month per each unit until all units are tested by September 2019. Upon the completion of overall testing, commercial operation (COD) will commence in late October 2019.

The Project also includes a follow-up plan for all construction activities, which can be divided into 4 parts as follows.

- (1) Civil work, which is the construction of all structures such as a cofferdam to block reverse flow of water during construction, powerhouse foundation, steel-reinforced concrete structure, navigation lock, spillway building, Intermediate Block, powerhouse building, etc.;
- (2) Installation of hydro-mechanical equipment, such as spillway gate;
- (3) Installation of electro-mechanical equipment, such as turbines, generators, transformers, and all other equipment; and
- (4) Transmission line, which includes transmission post foundation, high-voltage power system, high-voltage transmission post, and equipment, etc.

Progress of each part of the Project as of January 31, 2018 is summarized in the table below.

Progress	%
Overall Project	89.29
Progress of each part	
(1) Civil Work	92.69
(2) Installation of Hydro-mechanical Equipment	85.20
(3) Installation of Electro-mechanical Equipment	80.60
(4) Transmission Line	81.50

Source: Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E) .

Please see additional detail on business overview and operating performance of XPCL in the Attachment 1 of this report.

## **1.6 Total Value of Assets Being Acquired and Criteria Used for Calculation of Consideration Value**

### **1.6.1 Total value of assets being acquired**

The Company will pay Baht 2,065.00 million to BEM in exchange of 201,457,499 of XPCL's shares, representing 7.50% of XPCL's registered capital, on the date BEM transfers the ownership of the shares to the Company. The payment will be made by a cashier's order of a commercial bank or a transfer of fund via commercial bank to BEM's bank account or any other account as per agreement between BEM and the Company.

In addition, the Company is obligated to pay for subsequent capital increase in XPCL in proportion to its shareholding until the completion of the Project in the amount of no more than Baht 399.20 million. The Company will gradually make the payment as XPCL calls for additional capital<sup>6</sup>.

### **1.6.2 Criteria used for calculation of consideration value**

The Company will make approximately Baht 2,065.00 million payment for 201,457,499 of XPCL's shares, representing 7.50% of XPCL's registered capital. The amount to be paid is derived from a negotiation, in addition to the valuation by discounted cash flow approach (calculated by Advisory Plus Co., Ltd., the Company's financial advisor) as it takes into account the future operating performance of XPCL. The range of XPCL's shares value for such proportion is between Baht 1,889.00 and 2,250 million (*Please see detail of valuation prepared by the Company's financial advisor in Clause 5, Sub-Clause 5.2 of the Information Memorandum on asset acquisition and connected transaction (Attachment 7) of the AGM Notification*).

<sup>6</sup> Monthly capital call in proportion to shareholding is in line with drawdown from financial institutions in order to maintain Debt to Equity ratio of 3:1, according to the Equity Contribution Agreement dated October 31, 2011 and the Amended and Restated Equity Contribution Agreement dated June 9, 2015. (*Please see additional detail in Attachment 1, Clause 7, in this report.*)

For the payment of subsequent capital increase in XPCL in proportion to the Company's shareholding until the completion of the Project in the amount of no more than Baht 399.20 million, XPCL will gradually call for the payment altogether with other XPCL's shareholders, as specified in the agreement between XPCL and its creditors<sup>7</sup>.

### 1.6.3 Calculation of the transaction size

#### Asset acquisition transaction

Criteria for Transaction Size Calculation	Calculation Formula		Transaction Size
	Acquisition of XPCL Shares	Payment of subsequent capital increase in XPCL in the proportion to shareholding until the completion of the Project	
1. Net Tangible Assets criteria (NTA)	$(7.5\% * 20,816.17^{1/}) / 12,959.74^{2/} = 12.05\%$	-	12.05%
2. Net profit criteria	Not applicable because XPCL still records a net loss	-	-
3. Total value of consideration criteria	$2,065.00 / 60,461.60^{3/} = 3.42\%$	$399.20 / 60,461.60^{3/} = 0.66\%$	4.08%
4. New shares offering criteria	No issuance of shares for asset acquisition	-	-
<b>Maximum criteria</b>			<b>12.05%</b>

Remark:

- 1/ Net tangible assets of XPCL = Baht 20,816.17 million, according to the financial statements of XPCL for the year ended December 31, 2017, audited by a certified public accountant.
- 2/ Net tangible assets of the Company = Total assets of Baht 60,461.60 million – Intangible assets of Baht 4,786.04 million – Deferred tax assets of Baht 2.63 million – Total liabilities of Baht 29,803.08 million – Non-controlling interests in subsidiaries of Baht 12,910.11 million, according to the financial statements of the Company for the year ended December 31, 2017, audited by a certified public accountant.  
(Intangible assets of Baht 4,786.04 million above comprise of Baht 93.67 million intangible assets, Baht 4,524.84 million right to power production and distribution – the Company's shareholders' equity, and Baht 167.53 million right to use gas pipeline (recorded under other non-current assets).)
- 3/ Total assets of the Company as of December 31, 2017.

#### Connected transaction

Criteria for Transaction Size Calculation	Calculation Formula	Transaction Size
Total value of consideration payable to the connected person	$2,065.00 / 12,959.74^{1/}$	15.93%

Remark: 1/ Calculated based on Remark 2/ of the calculation of asset acquisition transaction size table.

### 1.7 Sources of Fund for the Transaction

The Company will issue and sell no more than Baht 2,500 million debenture<sup>8</sup>, or equivalent amount in other currency (in case of debenture issuance is in foreign currency), and use approximately Baht 2,065.00 million of the proceeds to pay BEM for 201,457,499 XPCL's shares, or 7.50% of XPCL's registered capital, and no more than Baht 399.20 million to pay for subsequent capital increase in XPCL in proportion to its shareholding in XPCL until the completion of the Project.

In addition to the issuance of no more than Baht 2,500 million debenture, the Company also has a Baht 1,000 million short-term credit facility from a financial institution, as well as cash, bank deposit, and short-term investment in the amount of Baht 2,183 million (according to the separate financial statements of the Company for the year ended December 31, 2017).

### 1.8 Conditions for the Transaction

The Company will purchase 201,457,499 XPCL's shares, representing 7.50% of XPCL's registered capital, from BEM in the amount of Baht 2,065.00 million as well as pay for the subsequent capital increase in proportion to its shareholding in XPCL until the completion of the Project. There are material condition precedents requiring the Company to obtain approval before entering into the transaction as follows.

<sup>7</sup> Please see Footnote 6.

<sup>8</sup> The issuance and offering of not exceeding Baht 10,000 million debenture was approved at the 2016 Annual General Meeting of Shareholders held on April 19, 2016. On June 17, 2016, the Company issued Baht 4,000 million debenture No. 1/2016. Therefore, the remaining balance of debenture that can be issued by the Company in accordance with such shareholders' meeting resolution is Baht 6,000 million.

- (1) The Company obtains an approval from the shareholders' meeting to enter into the transaction.
- (2) BEM's Board of Directors' meeting and shareholders' meeting approve BEM to sell 201,457,499 XPCL's shares, representing 7.50% of XPCL's registered capital.
- (3) The Company obtains consents from XPCL's creditors under credit agreements and counterparties under other agreements on restriction of share transfer (if any)<sup>9</sup>.

#### 1.9 Procedure/Time table to purchase XPCL's shares and issue debenture

Period	Purchase of XPCL's shares and Issuance of debenture
February 27, 2018	The Company's Board of Directors passes a resolution to purchase 7.50% of XPCL's registered capital.
March 13, 2018	Record date of the Company's shareholders who are eligible to attend the 2018 Annual General Meeting of Shareholders (Record date).
April 10, 2018	2018 Annual General Meeting of Shareholders of the Company to approve the purchase of 7.50% of XPCL's registered capital from BEM.
April 20, 2018	2018 Annual General Meeting of Shareholders of BEM to approve the sale of 7.50% of XPCL registered capital to the Company.
April 2018	Credit rating of debenture by TRIS
May 2018	Issuance of debenture and receipt of cash.
June 2018	The Company pays BEM for XPCL's shares.

2. **Business overview and operating performance of CK Power PCL.** is presented in Clause 2, Sub-Clause 4 of the Company's Information Memorandum regarding Asset Acquisition and Connected Transaction (Attachment 7), and the Company's Annual Report of the year 2017 (Attachment 2), enclosed with the notice of the shareholders' meeting.
3. **Business overview and operating performance of Xayaburi Power Co., Ltd.** is presented in Attachment 1 of this report.
4. **Business overview and operating performance of Bangkok Expressway and Metro PCL.** is presented in Attachment 2 of this report.

<sup>9</sup> If XPCL fails to obtain consents on share transfer from its creditors under the credit agreement and counterparties under other agreements, the Company will not enter into this transaction. Therefore, there is no risk from the share transfer.



**Part 2: Opinion of the Independent Financial Advisor on Reasonableness of the Asset Acquisition and Connected Transaction****1. Objective and Necessity of the Transaction**

The Company has invested in XPCL's Xayaburi Hydropower Project in a proportion of 30% of XPCL's registered capital for 3 years since June 2015 (when the Xayaburi Hydropower Project just completed construction phase 1). The Project made continuous progress and at the end of January 2018 was approximately 89.29%<sup>10</sup> completed. Outstanding works are installation of electricity generating units, connection to transmission line, test-run of eight electricity generating units, and final landscaping of the project area. The test-run of the first electricity generating unit by channeling water into the system is expected to commence in October 2018. Then electricity generating unit 2 – 8 will be sequentially tested. Commercial operation (COD) is expected to commence in late October 2019, as planned.

The Company is therefore interested in increasing its stake in XPCL in order to recognize XPCL's performance in proportion to its shareholding and has contacted BEM with an offer to purchase 7.50% of XPCL's registered shares. It is an appropriate time for the Company to make additional investment in XPCL because the Project has made substantial progress and nearly commences commercial operation, which allows the Company to recognize additional recurring income and generate good return for its shareholders in the future.

**2. Comparison of Advantages and Disadvantages of the Transaction****2.1 Advantages and Benefits of the Transaction**

(1) Conformity with the Company's business operation policy to invest in power generation and distribution business and create value added

According to business operation policy, the Company is to invest in other companies whose operations involve distribution of electricity generated from various energy sources, in order to enhance its growth potential and create synergy among the Company and its subsidiaries. In addition, the Company has a policy to expand its investment in power generation and distribution businesses in Thailand and Southeast Asian region. One of the Company's objective is to play a part in ensuring power security in Thailand from its investment in various power projects, such as (a) project with power purchase agreement with trustworthy counterparty, (b) project with agreement to procure adequate raw material for electricity generation throughout the project's lifetime, and (c) project that benefits the society and is environmental friendly.

The additional investment in XPCL conforms to the Company's business operation policy and creates added value to the Company from increase in proportion of investment in a big power generating project with a capacity of 1,285 MW. In addition, XPCL has a power purchase agreement covering nearly the entire concession period, so it gives the Company the opportunity to increase its revenue in proportion to higher investment, get sustainably appropriate returns, and enhance long-term potential of its business operation. Furthermore, it will improve the Company's attractiveness to investors, which will benefit fund raising activities for future project.

(2) Additional investment in a project with power purchase agreement covering nearly the entire concession period

Xayaburi Hydropower Project is a large-scale power generation project, with consistent cash inflow and operating performance due to long-term power purchase agreement covering nearly entire concession period. The power purchase agreement with EGAT for electricity generating unit 1 – 7 covers a period of 29 years starting from COD, out of 31 years, accounting for approximately 95% of total annual capacity of the Project. Furthermore, EdL will purchase electricity from generating unit 8 for the entire 31 years of concession period, starting from COD.

(3) Appropriate time to make additional investment in XPCL when the Project nearly commences commercial operation

As of January 31, 2018, construction of Xayaburi Hydropower Project is 89.29%<sup>11</sup> completed. Main construction works, such as civil work, installation of hydro-mechanical equipment and electro-

<sup>10</sup> Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).

<sup>11</sup> Please see Footnote 10.

mechanical equipment, and transmission line, are mostly completed as scheduled. Outstanding works comprise installation and test-run of 8 electricity generating units. Test-run of electricity generating units is expected to commence in October 2018, and electricity generated during UOP can be sold upon completion of the test-run of each unit. XPCL expects to commence commercial operation (COD) as planned in October 2019, which is only a short period from the additional investment date. Therefore, risk from delay of construction is greatly reduced.

The investment in XPCL will generate 11.99% p.a. return on investment (EIRR) for the Company and has a payback period of 14.31 years<sup>12</sup>.

(4) Increase the Company's revenues and business potential in the long term

Upon the completion of the transaction, the Company's shareholding in XPCL will increase from 30.00% to 37.50%, and XPCL is still an associated company. The Company will recognize a share of profit by equity method in its consolidated financial statements after the commercial operation commences (COD) in October 2019. Based on the projection by CapAd, XPCL will achieve total revenues of between Baht 15,018.27 million and Baht 15,205.55 million per year during 2020 – 2049, with a net profit ranging from Baht 4,319.78 – 9,283.52 million per year, demonstrating that it will generate a net profit successively throughout concession period<sup>13</sup>. As a result, the Company will be able to increase its revenues, with an opportunity to receive dividend from XPCL, as well as increase long-term potential of its business operation.

Nonetheless, the Company will realize share of losses as XPCL has not yet generated income from sales of electricity during the pre-COD period. XPCL has already recorded net losses of Baht 139.69 million, Baht 174.54 million, and Baht 86.43 million in 2015-2017, respectively. Since the investment in XPCL in 2015, the Company has recognized share of losses in the amount of Baht 27.18 million, Baht 52.36 million, and Baht 25.93 million in 2015-2017, respectively.

Once COD commences, the Company's revenue structure will change in accordance with the table below.

(unit: Baht Million)

Revenue structure (Consolidated financial statements)	Subsidiaries/ Associated companies	2017 <sup>6/</sup>		2020 <sup>7/,8/</sup>		2032 <sup>7/,9/</sup>	
		Amount	%	Amount	%	Amount	%
Hydropower project	SEAN <sup>1/</sup>	3,318	47.88	3,318	38.81	3,318	31.87
Cogeneration project	BIC <sup>2/</sup>	3,316	47.85	3,316	38.78	3,316	31.85
Solar power project	BKC <sup>3/</sup>	140	2.02	140	1.64	140	1.34
Share of profit (loss) from investment in joint ventures and associated companies, and other revenues	CRS <sup>4/</sup> , NRS <sup>5/</sup>	156	2.25	156	1.82	156	1.50
Share of profit (loss) from investment in joint ventures and associated companies	XPCL (37.50%)	-	-	1,620	18.95	3,481	33.44
Total revenues		6,930	100.00	8,550	81.05	10,411	66.56

Remark:

1/ Southeast Asia Energy Ltd.

2/ Bangpa-in Cogeneration Co., Ltd.

3/ Bangkokchai Co., Ltd.

4/ Chiangrai Solar Co., Ltd.

5/ Nakhon Ratchasima Solar Co., Ltd.

6/ From the Company's audited financial statements for the year ended December 31, 2017.

7/ Assume no changes in revenue from SEAN, BIC, BKC, CRS, and other revenues from 2017.

8/ First full year of operating performance, forecasted by the independent financial advisor in Part 3, Clause 5 of this IFA report.

9/ First year of profit reaching Baht 9,000 million, forecasted by the independent financial advisor in Part 3, Clause 5 of this IFA report.

<sup>12</sup> EIRR is a calculation in the view of CKP, taking into account investment in XPCL of approximately Baht 2,065 million in 2018, subsequent capital increase in proportion to shareholding in XPCL until the completion of the Project of no more than Baht 399.20 million, and cash inflow until the end of concession in 2050. (EIRR in the view of CKP is not equal to IRR of the Project, which has started construction since 2012). Payback period starts from June 2018, onwards.

<sup>13</sup> The Project commences commercial operation (COD) in late October 2019 and the concession ends in October 2050. In 2050, the Project's operation does not last for the full year, CapAd therefore does not present revenues and net profit (loss) for the year 2019 and 2050 in this section. Shareholders can see total revenues and net profit (loss) for the year 2019 and 2050 in Part 3, Clause 5, in this report.

(5) Growth in the Company's assets

Subsequent to the completion of this transaction, the Company's assets will expand in line with the investment in XPCL that will be gradually made until completion of the project construction, and will increase further when the Company recognizes profit from XPCL by the equity method.

(6) XPCL's strong shareholder base

Apart from the Company that will become XPCL's shareholder of 37.50% after completion of this transaction, XPCL also has other shareholders who have strong financial position such as Electricity Generating PCL. ("EGCO"), and Natee Synergy Co., Ltd. ("NSC"). This could ensure an ability of additional fund injection into XPCL until project completion, thus helping to enhance strength and confidence in XPCL's shareholder structure.

Natee Synergy Co., Ltd. (NSC) is a 100.00% wholly-owned subsidiary of Global Power Synergy PCL. ("GPSC"). GPSC is 22.58% and 22.73% owned by PTT Public Company Limited ("PTT") and PTT Global Chemical Public Company Limited ("PTTGC"), respectively.

In addition, the fact that EdL, whose major shareholder is the government of Lao PDR, is another major shareholder will further enhance confidence of XPCL's stakeholders.

(7) An opportunity of personnel development for large-scale project operation

The investment in XPCL will enable the Company to develop and provide its personnel with an opportunity to study the control and operation process of a large-scale project that employs world-class technology. This will help to develop human resources and their knowledge that will be useful for the operation of other large projects in the future. Since the initial investment in the Project, the Company's working team has been involving in project development and follow-up and gaining better understanding of structure of power plant and related systems, which will benefit the management of future projects.

(8) The Project utilizes clean energy and is environmental friendly

Xayaburi Hydropower Project utilizes hydropower to generate electricity and does not emit any carbon dioxide to the atmosphere. It is environmental friendly and helps to reduce global warming effect. In addition, the Project has been designed to keep environmental and social impact at a minimum and in accordance with Lao PDR's laws and Mekong River Commission (MRC)'s regulations, in order to conserve the environment and maintain existing and natural way of living as much as possible. In doing so, the Project has implemented the following measures: (a) Sediment Flushing System – The Project reduces the height of footing of spillway gates in order to maximize the amount of sediment, in which comprising food for aquatic animals, flowing through with water, (b) Fish Passing Facilities – The Project designs for 2-way migration of fish from down-to-upstream and up-to-downstream, as well as 18-m wide fish passing way with a lift to move fish and fish herding. The objective is to maintain natural way of lives. Furthermore, there is also a fish breeding station to assist the fishing occupation of fishermen living along Mekong riverbank, and (c) Navigation Lock – The Project designs the Navigation Lock to support communication and transportation in Mekong River.

## **2.2 Disadvantages and Risks of the Transaction**

(1) The Company has an obligation to pay for XPCL's subsequent capital increase in proportion to its shareholding until the completion of the Project in the amount of approximately Baht 399.20 million

The Company needs funding to complete the Project, which will commence commercial operation in 2019. According to loan agreements between XPCL and financial institutions, the Company is obligated to pay for XPCL's subsequent capital increase in proportion to its shareholding until the completion of the Project in the amount of no more than Baht 399.20 million from June 2018 to October 2019. The Company plans to use part of the proceeds from the issuance and sale of no more than Baht 2,500 million debentures for this payment.

(2) The Company will have higher liabilities, interest expenses, and Debt to Equity ratio

In order to fund the transaction, the Company will issue and sell debentures denominated in Thai Baht currency to institutional and high net worth investors ("Type II & HNW") in the amount of no more than Baht 2,500 million. Therefore, the additional investment in the Project will result in



higher liabilities (based on the Company's separate and consolidated financial statements) and Debt to Equity ratio (D/E ratio).

Based on the Company's consolidated financial statements for the year ended December 31, 2017, total liabilities and shareholders' equity were Baht 29,803.08 million and Baht 30,658.52 million, respectively, and interest-bearing D/E ratio is equal to 0.74 time. If the Company receives the full Baht 2,500 million cash from the sale of debentures, interest-bearing D/E ratio will increase to a maximum level of approximately 0.82 time in 2018. Then, the ratio will gradually decline from the repayment of the loan principals. However, such increase in interest-bearing D/E ratio is still within the financial covenants in the terms and conditions of the debenture, which limits the D/E ratio of no more than 3 times.

(3) Risk from adequacy of source of fund in the event that the Company cannot raise fund from the sale of debentures as expected, and risk from maturity mismatch financing

If the full Baht 2,500 million amount from the sale of debentures, which is enough to pay BEM for XPCL share and XPCL's subsequent capital increase in proportion to its shareholding until the completion of the Project, cannot be raised, the Company needs to find alternative source of fund. However, the Company is confident that it can raise the full amount from the sale of debentures. The Company successfully sold the Company's Debenture No. 1/2016 on June 17, 2016 to Type II & HNW investors, and raised fund in the amount of Baht 4,000 million, with 3 years tenor. It also sold NN2's Debenture No. 1/2017 to financial institutions, and raised fund in the amount of Baht 6,000 million, with 3, 5, and 10 years tenor. In addition, the Company has a short-term facility of Baht 1,000 million from a financial institution, as well as cash, bank deposit, and short-term investment of Baht 2,183 million (based on separate financial statements for the year ended December 31, 2017). The Company is currently in a process to secure approval for Baht 4,000 million credit facilities from a financial institution as reserve fund. Upon the completion of the issuance of Baht 2,500 million debenture, the Company's Debt to Equity ratio is still below the financial covenants. Therefore, the Company has adequate capacity to raise additional debt, if required.

For this transaction, the Company plans to use proceeds from the sale of debenture to make an additional investment in 7.50% of XPCL's registered shares, which is considered a long-term investment. Therefore, the Company is exposed to maturity mismatch financing risk if it is unable to issue long-term debenture. Nonetheless, the Company still has enough capacity to raise additional long-term debt, as well as cash flow to service interest payment and short-term debt. The Company's sources of fund are (a) dividends received from XPCL, whose dividend policy is to pay out minimum 40% of net profit after deduction of statutory reserve and scheduled repayment of loan principals (based on CapAd's projection, XPCL will generate profit in the first year of commercial operation (2020)); (b) dividends received from other investments, totaling Baht 490.04 million in 2016, and Baht 1,175.37 million in 2017; and (c) project management fee, totaling Baht 249.25 million in 2016, and Baht 314.19 million in 2017. The Company, therefore, is confident that it can manage its capital and cash flow for long-term investment.

(4) Risk associated with not being the major shareholder in XPCL

After entering into the transaction, the Company will hold a stake of 37.50% in XPCL, which does not exceed 50%, resulting the Company is unable to control a majority vote at the board of directors' meeting and the shareholders' meeting of XPCL. In addition, the Company cannot control voting on significant issues that require an affirmative vote of not less than three-fourths of the shareholders' meeting, including agendas such as capital increase, capital decrease, acquisition or acceptance of transfer of other business, disposal or transfer of entire business, and etc. In contrary, the Company is able to block vote on significant issue requiring more than 75% of the vote. However, the Company believes that it will receive approval votes from other groups of shareholders if such agendas will be beneficial to the business operation.

(5) Risk from the power purchase agreement with EGAT not covering the entire concession period

At the beginning of the Project, XPCL enters into a power purchase agreement with EGAT for a period of 29 years from COD. Then, the government of Lao PDR extends the concession for an additional 2 years in exchange of the amendment in construction plan as requested by the government of Lao PDR, resulting in a total concession period of 31 years. XPCL signed the

concession extension agreement on March 15, 2016. At present, EGAT has not extended the power purchase agreement to cover the entire concession period. Therefore, XPCL is still exposed to the uncertainty of power purchase in the final 2 years of the concession. However, EGAT has invested in transmission lines connecting with XPCL's at Tha Li District, Loei Province. It is expected that EGAT will maximize the benefit of the investment in those transmission lines. In addition, price of electricity generated from hydropower plant is cheaper in comparison to other energy sources which could be another factor for EGAT to consider the purchase of electricity. Furthermore, Lao PDR's domestic demand for electricity remains solid. XPCL will discuss with EGAT concerning the extension of the power purchase agreement for another 2 years to cover the entire concession period.

Furthermore, XPCL's average price is approximately Baht 2.07 per kWh while those of big power plants in Thailand, such as coal and LNG power plants, are in the range of Baht 2.90 – 4.30 per kWh<sup>14</sup>. Therefore, the risk from EGAT not extending its power purchase agreement for another 2 years is limited.

(6) Risk from impact on the Company in the event that Xayaburi Hydropower Project is unable to commence commercial operation as scheduled

At present, XPCL's Hydropower Project is under construction and, according to the plan, has another 1 year and 8 months (from the end of January 2018) to complete the remaining 10.71% of construction works, including test-run of all electricity generating units and related systems. The Project is still exposed to several risk factors, such as delay of completion of all systems, technical and engineering problems, and test-run of all systems and electricity generating units. XPCL will commence the test-run of the first electricity generating unit in October 2018, and then other generating units will be sequentially tested. In the event that there are problems from the test-run and XPCL is unable to solve such problems on time, the commercial operation may not be commenced as planned. However, XPCL, Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR, and Pöyry Energy Limited (Thailand), a technical consultant of XPCL's creditors, has closely monitored and followed up on the construction and are confident that the Project will be able to commence commercial operation as scheduled. In order to minimize the impact, XPCL purchases an insurance policy to mitigate the risk from the delay in construction and penalty fee under the power purchase agreement. XPCL can collect such penalty from the contractor, up to no more than 10% of total value of the construction.

(7) Risk from cost overrun

As of January 31, 2018, the Project is 89.29%<sup>15</sup> completed. In addition, XPCL's creditors have closely monitored the control of project cost. Therefore, impact from cost overrun is greatly reduced and has a very small probability of happening. In addition, XPCL has insured against the cost overrun risk by hiring CH. Karnchang (Lao) Co., Ltd. (CHK) to construct the Project on a fixed cost lump sum turnkey basis for the planned construction, including all related systems.

(8) Risk and impact on XPCL from the fluctuation of Mekong water flow rate which could affect electricity production for supply to EGAT and EdL according to the power purchase agreement

XPCL's Xayaburi Hydropower Project is a run-of-river barrage constructed on Mekong River in order to increase the level of water in Mekong River and use water in the river as raw material for power production. The water source is from (a) the river upstream from China, Myanmar, Thailand, and Lao PDR, (b) rainfalls, and (c) secondary rivers, namely Nam Khan River, Nam Ou River, and Nam Tha River, on the northern side of Mekong River. Water quantity may be constrained by climate and season in each time period of the year.

However, before embarking on this project investment, XPCL has studied historical records on the adequacy of water flow rate prior to project design. XPCL's technical consultant, Campagnie Nationale du Rhône – CNR Engineering Department ("CNR")<sup>16</sup>, uses data of water level dated back

<sup>14</sup> Source: Energy Policy and Planning Office of Thailand, Ministry of Energy. (<http://www.eppo.go.th>)

<sup>15</sup> Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).

<sup>16</sup> Campagnie Nationale du Rhône ("CNR") was incorporated in 1933 as France's electricity generating company, with more than 80 years of experience and expertise in consultation, development, and design of power plant projects as well as water management in France and 30 countries around the world. CNR has involved in many large, medium, and small scale hydropower plants, solar power plants, windmill farms for electricity production, dam construction, navigation lock construction,

from 1939 to today (at present, there are 10 water level and water flow measuring points along Mekong River on the northern and southern sides of the Project), water flow rate in secondary rivers, rainfall volume, and other factors, such as effect from hydropower plants in China and Lao PDR, and changes in global climate, to calculate capacity of power production. It is found that water flow rate is adequate to produce electricity at a capacity of 7,589 GWh per year.

(9) Risk from natural disasters which will affect structure and power production equipment of the Project

Any force majeure caused by natural disasters could impact the power project. The natural disasters that will likely create damage to the power plant's structure include earthquake and flood which will result in water overflow. However, before investing in this project, CK Group mitigated such risk by selecting a power project site that is less prone to the said risk. The project does not sit on the earthquake fault line and has been designed to withstand any potential natural disasters. Xayaburi Hydropower Project has been designed to withstand quakes up to 7.5 on the Richter scale. Moreover, the project has a total of 11 water gates, with a maximum discharge capacity of 47,500 cubic meters per second to help release water during the flood season. The maximum monthly average of water flow rate through the Project during the past 3 years was 7,699 cubic meters per second in August 2016<sup>17</sup>. It is therefore believed that the project structure is strong enough to withstand earthquakes and there are an adequate number of spillway gates to protect against dam overflows.

(10) Risk associated with cost control in future power project management

Xayaburi Hydropower Project's power generation needs to rely on personnel with dependable experience and expertise since the project involves a huge investment value. Apart from control over machinery and equipment to ensure power quality and stability, the project also requires good management of water flow rate, which is an uncontrollable factor, to make certain that there will be sufficient amount of water for power generation and distribution to meet the desired quantity, quality, and stability as specified in the power purchase agreements made with EGAT and EdL. This also includes the discharge of water overflow through spillway gates. Any error in the management of water flow rate or in the operation of power generating machinery and equipment will cause damage to the generators and relevant equipment, as well as affect revenues and performance of XPCL. In addition, XPCL also has to manage fish passing facilities and navigation lock.

Under its operational plan, XPCL will undertake the project management by itself without engaging external service providers in the same manner as other hydroelectric power projects in Thailand such as Bhumibol Dam, Queen Sirikit Dam, Si Nakharin Dam, Vajiralongkorn Dam, Sirindhorn Dam and Chulabhorn Dam, all of which have been managed by work units of EGAT, a Thai state enterprise. If in the future XPCL changes its plan and hires other party to manage the project, this may result in a higher operating cost.

In addition, XPCL will forecast water flow rate in order to determine the amount of electricity to be produced and prepare a report for EGAT in advance on a weekly basis. The forecast is

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irrigation of water for agricultural use, consultation and study of head water of project, etc. Examples of past achievements are as follows:

- Master plan of the hydropower potential of the Mekong, Lao PDR.
- Hydrometeorological forecast of a run-of-river development scheme, Lao PDR.
- Hydrometeorological measurement network on the scale of the Mekong watershed, Lao PDR.
- Improvement of navigation conditions on the Red River, Vietnam.
- Design and construction management of the hydropower development scheme of Chashma, Pakistan.
- Full design and construction management of 4 hydropower plants in Rhône, and a hydropower plant in Toulouse, France.
- Complete data collection and hydrometeorological forecasting system for the Rhône / 1D-2D hydraulic modelling of the river, France.
- Design and construction management of the extension of the Lavey hydropower development scheme, Switzerland.
- Design of navigation lock of Panama Canal, which won The Engineering Grand Prix award in 2011.

CNR operates and manages 19 hydropower plants and 21 small-scale hydropower plants, with combined installed capacity of 3,035 MW, 37 windmill farms with combined installed capacity of 457MW, 37 solar power projects with combined installed capacity of 61 MW, 24 navigation locks, 330 km. of water transportation, 32 water pump stations, 400 dikes, 18 seaports and industrial estates, including Port de Lyon. Total revenues and net profit in 2016 were Euro 1,056 million and Euro 92.8 million, respectively. CNR has 1,355 employees.

(Please see additional information on <https://www.cnr.tm.fr/en/>, and [https://en.wikipedia.org/wiki/Compagnie\\_Nationale\\_du\\_Rhône](https://en.wikipedia.org/wiki/Compagnie_Nationale_du_Rhône))

<sup>17</sup> Source: XPCL works with CNR in calculating water flow rate, using water level data collected from metering stations, which have been installed by XPCL, and CNR's Rating Curve.

reasonably made on a conservative basis to minimize the error of amount of electricity delivered to EGAT. However, in the event that XPCL fails to deliver amount of electricity previously informed or to generate amount of electricity on average at an agreed upon level, a penalty fee, as specified in the power purchase agreement, shall be applied.

**(11) Risk from floating interest rates**

The long-term Credit Facilities Agreement executed by XPCL is partly denominated in US dollars for USD 711 million (30.00% of total long-term debt (in Thai Baht equivalent)) and carrying a floating interest rate (LIBOR) plus a fixed spread, to be a part of the funding source for Xayaburi Hydropower Project construction. At the end of 2017, USD 622 million of the facilities has been drawn down. The said loan is repayable semi-annually in the amount specified in the loan agreement, with the first installment falling due on the last business day of the 15<sup>th</sup> month after COD, or March 30, 2020, whichever is earlier. As such, if there is a material change in the interest rate during loan repayment period, it could affect the finance cost of XPCL.

Nevertheless, to hedge against such interest rate risk, XPCL has executed an interest rate swap agreement from the floating rate to a fixed rate, initially covering the period up to the end of 2020. In this respect, when the swap agreement takes effect, the profit or loss will be transferred to 'cost of project under construction' during the construction period and will then be recorded as 'profit or loss' when commercial operation commences. In addition, XPCL will regularly keep abreast of the interest rate movement and continuously manage and adjust its finance cost. In 2013-2017, XPCL recorded unrealized gain (loss) on risk hedging in its cash flow in the amount of Baht 196.04 million, Baht (688.71) million, Baht (270.12) million, Baht 120.78 million, and Baht 314.88 million, respectively.

**(12) Risk from foreign exchange rate fluctuation**

XPCL could be exposed to risk from foreign exchange rate fluctuation arising from part of the long-term loan and interest which are payable in US dollars. Despite that, XPCL will generate some revenues in US dollar currency from the production and distribution of primary energy to EGAT under the power purchase agreement, which is deemed as a natural hedge against the exchange rate risk. XPCL also plans to manage any remaining risk by closely following up on the foreign exchange rate trend and executing a hedging contract from time to time as deemed appropriate, in a bid to cushion against potential impact from the exchange rate volatility.

**(13) Loss of investment opportunity in other projects**

The acquisition of additional XPCL's shares and subsequent capital increase in XPCL in proportion to the Company's shareholding until completion of the Project will involve a total investment value of Baht 2,464.20 million (Baht 2,065 + 399.20 million). Thus, the Company may have a constraint on investment in any other interesting projects since this transaction requires a huge amount of funds. The Company's executives, however, view that if in the future there are any attractive projects with a favorable rate of return, the Company can raise additional funds for investment in those projects by borrowing from financial institutions or through the capital market.

**3. Comparison of Benefits and Impacts between the Transaction Made with the Connected Person and the Transaction Made with a Third Party**

The Company has a policy to expand investment in power generation and distribution business. The acquisition of additional shares in XPCL conforms to the policy, and is at an appropriate time as risks associated to the Project are gradually reduced. In addition, construction is nearly completed and the Project will commence commercial operation in the near future, within 2019. The Company, therefore, decides to purchase additional XPCL share from BEM, who is a connected person. In consideration of the purchase of XPCL's shares from other shareholders of XPCL, the Company has not received any offer from other shareholders of XPCL. It is thus not possible to compare this transaction with the transaction entered into with a third party.

#### **4. Conclusion of the Independent Financial Advisor's Opinion Regarding Reasonableness of the Transaction**

Since June 2015, the Company has invested in 30.00% of registered capital of XPCL, whose construction of Xayaburi Hydropower Project Phase 1 just completed. The Company has made the investment in XPCL for almost 3 years, and the Project has made constant progress. At the end of January 2018, the Project is 89.29% completed<sup>18</sup>. The Company, therefore, was interested in increasing its investment in XPCL in order to recognize the performance of XPCL proportionately, and contacted BEM with an offer to purchase 7.50% of XPCL's registered shares. This is an appropriate time for the Company to make an additional investment in XPCL because the Project has made a lot of progress and nearly commences commercial operation, which will generate recurring income and good return on investment for its shareholders.

The advantages and benefits from such asset acquisition and connected transaction are:

- (1) Conformity to the Company's business operation policy to become a holding company investing in electricity production and distribution business and creating value-added for the Company: The additional investment in a big power production project with capacity of 1,285 MW and power purchase agreement with a trustworthy counterparty provides the Company with additional revenue in proportion to the additional investment and appropriate returns. Furthermore, it increases the Company's long-term business prospect and attractiveness to investors, which will benefit fund raising activities for future projects;
- (2) An additional investment in a project with long-term power purchase agreement covering nearly the entire 31 years of concession period, starting from COD: The Project signed the power purchase agreement with EGAT for a period of 29 years, starting from COD, for 95% of annual power production capacity. Furthermore, EdL will purchase electricity from the Project for the whole concession period of 31 years;
- (3) An additional investment in XPCL at an appropriate time as the Project nearly commences commercial operation: Construction of the Project is 89.29% completed<sup>19</sup>, as of January 31, 2018. With only over a year remaining until the completion of the construction, risk from delay of construction is greatly reduced;
- (4) Increase in long-term revenues and business prospect of the Company: COD is scheduled in late October 2019 and the Project expects to generate net profit consistently throughout the entire concession period. Consequently, the Company's revenue will increase and the Company has an opportunity to get dividends from XPCL which help increase long-term business prospect of the Company;
- (5) Growth in the Company's assets base from additional investment in XPCL and recognition of future profit under equity method;
- (6) XPCL's strong shareholder base, such as EGCO, Natee Synergy Co., Ltd. (a company under PTT PLC. Group), and EdL, helps to enhance confidence among XPCL's stakeholders;
- (7) An opportunity of personnel development for large-scale project operation that will benefit the management of the Company's future power projects; and
- (8) The Project's utilization of clean energy and environmental-friendly aspect: The Project utilizes hydropower to generate electricity and does not emit any carbon dioxide to the atmosphere. In addition, the Project has been designed to keep environmental and social impact at a minimum and in accordance with Lao PDR's laws and Mekong River Commission (MRC)'s regulations.

Nonetheless, the transaction still involves some disadvantages and risks as follows.

- (1) The Company has an obligation to pay for XPCL's subsequent capital increase in proportion to its shareholding in the amount of no more than Baht 399.20 million until the completion of the Project. The Company plans to issue and sell Thai Baht debenture in the amount of no more than Baht 2,500 million;
- (2) An increase in the Company's liabilities, interest expenses, and D/E ratio from the issuance and sale of debenture domestically: If the Company receives the full amount of Baht 2,500 million, its interest-bearing debt to equity ratio will max out at 0.82 time in 2018, which is still below 3 times according to financial covenant as specified in the terms and conditions of the debenture;

<sup>18</sup> Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).

<sup>19</sup> Please see Footnote 18.

- (3) Risk from adequacy of funding in the event that the sale of debenture generates inadequate amount of fund required, and risk from maturity mismatch of financing;
- (4) Risk associated with not being a major shareholder in XPCL: The Company does not have complete control in XPCL after increasing its shareholding to 37.50% of XPC's registered capital;
- (5) Risk from the power purchase agreement with EGAT not covering the entire concession period: The power purchase agreement with EGAT covers 29 years out of 31 years of concession period. XPCL will discuss with EGAT on extending the agreement for another 2 years;
- (6) Risk from impact on the Company in the event that Xayaburi Hydropower Project is unable to commence commercial operation as scheduled: There are still some risks associates with installation and test-run of electricity generating units, which is scheduled to commence in October 2018;
- (7) Risk and impact on the Company from cost overrun: Because the Project is 89.29% completed<sup>20</sup> and XPCL's creditors have closely monitored cost of project, risk from cost overrun is greatly reduced and limited;
- (8) Risk and impact on XPCL from the fluctuation of Mekong water flow rate which could affect electricity production for supply to EGAT and EdL according to the power purchase agreement: The water source is from the river upstream, including rainfalls, may have a constraint of water quantity which depends on climate and season in each time period. However, before embarking on this project investment, XPCL has studied historical records on the adequacy of water flow rate prior to project designing. In addition, XPCL's technical advisor, CNR Engineering of Compagnie Nationale du Rhône ("CNR"), has constantly monitored water level throughout the construction period and found that water level is adequate for power generation in accordance with the power purchase agreement with EGAT and EdL;
- (9) Risk from natural disasters which will affect structure and power production equipment of the Project: The Project has been designed to withstand quakes up to 7.5 on the Richter scale. Moreover, the project has installed spillway gates with a maximum discharge capacity of 47,500 cubic meters per second. It is, therefore, believed that the project structure is strong enough to withstand earthquakes and there are an adequate number of spillway gates to protect against dam overflows;
- (10) Risk associated with cost control in project management in the future: Currently, XPCL plans to manage the Project during commercial operation phase. If there is a change of plan, it may result in higher operating costs;
- (11) Risk from floating interest rates: The long-term Credit Facilities Agreement executed by XPCL is partly denominated in US dollars. To hedge against such interest rate risk, XPCL has executed an interest rate swap agreement from the floating rate to a fixed rate, initially covering the period up to the end of 2020;
- (12) Risk from foreign exchange rate fluctuation: XPCL could be exposed to risk from foreign exchange rate fluctuation arising from part of the long-term loan and interest which are payable in US dollars. Despite that, XPCL will generate some revenues in US dollar currency from the production and distribution of primary energy to EGAT under the power purchase agreement signed with EGAT, which is deemed as a natural hedge against the exchange rate risk. XPCL also plans to manage any remaining risk by closely following up on the foreign exchange rate trend and executing a hedging contract from time to time as deemed appropriate; and
- (13) Opportunity loss to invest in other projects if opportunity to invest in interesting project with good returns arises in the future.

Considering the objective and necessity of the transaction together with the advantages, disadvantages, benefits and risk factors, we are of the opinion that the transaction will provide great revenue potential and future business prospect for the Company. The Company is aware of those risks and has already prepared and devised plans to cope with such risks. Therefore, **the asset acquisition and connected transaction is considered reasonable.**

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<sup>20</sup> Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).

### Part 3: Opinion of the Independent Financial Advisor Concerning the Appropriateness of Price and Conditions of the Asset Acquisition and the Connected Transaction

CapAd applied 6 approaches in evaluating the fair value of XPCL's shares, namely:

- 1) Book Value Approach
- 2) Adjusted Book Value Approach
- 3) Market Value Approach
- 4) Price to Book Value Ratio Approach: P/BV Ratio
- 5) Price to Earnings Ratio Approach: P/E Ratio
- 6) Discounted Cash Flow Approach

CapAd did not apply the Market Value Approach since XPCL is not listed on the SET. Thus, the market prices of XPCL's shares could not be calculated. Therefore, 5 remaining approaches shall be applied for the valuation of XPCL's shares and firm value.

CapAd evaluated the appropriateness of the acquisition price of XPCL's ordinary shares by using information obtained from the Company and XPCL, including other publicly-disclosed information such as Form 56-1, audited and reviewed financial statements, and information from the SEC's and SET's websites. The Independent Financial Advisor's evaluation based mainly on the assumptions that information and documents provided are true, complete and accurate. Additionally, the rendered opinion is based on environment and most up-to-date information at the time of issuance of this report. Therefore, any change of such information or any incurrence of events may significantly affect business operations and financial projection of XPCL as well as the shareholders' decision in considering the appropriateness of the acquisition.

After studying such information and documents, as well as other relevant information, opinion of the Independent Financial Advisor on the appropriateness of the fair values XPCL's ordinary shares can be summarized as follows:

#### 1. Book Value Approach

This approach determines XPCL's shares value at a certain period. In this case, the calculation is based on XPCL's latest financial statement as of December 31, 2017, audited by a certified auditor approved by the SEC. The summary of shares value is as follows:

XPCL	(Unit: Baht million)
Paid-up capital	22,064.83 <sup>1/</sup>
Retained losses	(879.84)
Other components of shareholders' equity	(327.13)
<b>Total Shareholders' Equity of XPCL</b>	<b>20,857.86</b>
<b>Firm value of XPCL at 7.50%</b>	<b>1,564.34</b>

Remark: As of December 31, 2017, registered capital of XPCL consisted of (a) 1,625,000,000 ordinary shares with par value of Baht 10.00 per share were fully paid, accounted for 73.65% of total paid-up capital of XPCL, and (b) 1,061,100,000 with par value of Baht 10.00 per share were paid-up at Baht 5.48 per share, accounted for 26.35% of total paid-up capital of XPCL.

The firm value of XPCL (100%) based on this approach is equal Baht 20,857.86 million. Value of 7.50% of XPCL is, therefore, Baht 1,564.34 million, which is lower than the acquisition price of 7.50% of XPCL's shares at Baht 2,065.00 million by Baht 500.66 million or 24.25% lower than the acquisition price.

#### 2. Adjusted Book Value Approach

By this approach, the shares value is derived from total assets, deducted by total liabilities including commitments and contingent liabilities as shown in the latest financial statements as of December 31, 2017, audited by a certified auditor approved by the SEC, and adjusted by items occurred after the end of accounting period or the items that may reflect the actual value of assets and liabilities. The adjustment items may include unrealized gain or loss from assets revaluation and/or tax privileges from losses carried forward. Consequently, the adjusted book value is divided by total number of XPCL's paid-up shares.

In deriving the value of XPCL's shares, the IFA used the book value as shown in the latest financial statements as of December 31, 2017 and considered the significant adjustments.

There is no revaluation of XPCL's fixed assets due to Xayaburi Hydropower Project is under construction, where the land for construction has been leased from the Government of the Lao PDR (GOL) and there is no appraisal of XPCL's fixed assets by an independent property appraiser. However, there is a significant event after the financial statement date which is capital increase during January – May 2018 totaling Baht 1,432.49 million. Consequently, the registered and paid-up capital of XPCL at the end of May 2018 will be Baht 23,497.31 million. *(In the case that the 2018 Annual General Meeting of Shareholders of the Company and the 2018 Annual General Meeting of Shareholders of BEM approved this transaction, the Company will proceed the acquisition of XPCL's shares and enter in to the share purchase agreement with BEM by the end of June 2018.)* Therefore, CapAd has adjusted shareholders' equity of XPCL to reflect the additional registered and paid-up capital by Baht 1,432.49 million.

#### Summary of adjustment to book value of XPCL

The summary of adjustment items that shall affect the book value of XPCL's ordinary shares are as follows:

<b>XPCL</b>	(Unit: Baht million)
Shareholders' equity as of December 31, 2017	20,857.86
<u>Adjustment</u>	
Capital increase of XPCL in January – May 2018	1,432.49 <sup>1/</sup>
<b>Net adjusted shareholders' equity</b>	<b>22,290.35</b>
<b>Firm value of XPCL at 7.50%</b>	<b>1,671.78</b>

Remark: As of December 31, 2017, registered and paid-up capital of XPCL consisted of (a) 1,625,000,000 ordinary shares with par value of Baht 10.00 per share were fully paid, accounted for 73.65% of total paid-up capital of XPCL, and (b) 1,061,100,000 with par value of Baht 10.00 per share were paid-up at Baht 5.48 per share, accounted for 26.35% of total paid-up capital of XPCL.

1/ Based on capital increase schedule of XPCL.

The firm value of XPCL (100%) based on this approach is equal to Baht 22,290.35 million. Thus, value of 7.50% of XPCL is equal to Baht 1,671.78 million, which is lower than the acquisition price of 7.50% of XPCL's shares at Baht 2,065.00 million by Baht 393.22 million or 19.04% lower than the acquisition price.

### **3. Price to Book Value Ratio Approach: P/BV Ratio**

In this approach, CapAd evaluated XPCL's ordinary shares by using book value per share of XPCL as shown in the latest financial statements as of December 31, 2017, which was Baht 7.77 per share, audited by a certified auditor approved by the SEC and multiplied by the median of P/BV Ratios of 12 comparable SET- or mai-listed companies<sup>21</sup> in energy and utilities sector who have core business of electricity generation similar to XPCL. The information is for the period up to February 16, 2018. The details are summarized below:

<b>XPCL</b>	<b>Historical P/BV Ratio (times)</b>							
	<b>7 days</b>	<b>15 days</b>	<b>30 days</b>	<b>60 days</b>	<b>90 days</b>	<b>120 days</b>	<b>180 days</b>	<b>360 days</b>
CK Power PCL.	1.75	1.76	1.80	1.75	1.75	1.69	1.58	1.48
Energy Absolute PCL.	18.33	18.10	17.80	15.51	14.36	13.56	12.48	11.01
Electricity Generating PCL.	1.37	1.36	1.35	1.35	1.37	1.38	1.38	1.35
Glow Energy PCL.	2.55	2.57	2.59	2.59	2.64	2.65	2.55	2.47
Global Power Synergy PCL.	3.24	3.25	3.21	2.85	2.65	2.41	2.10	1.76
Ratchaburi Electricity Generating Holding PCL.	1.25	1.25	1.26	1.26	1.26	1.26	1.24	1.22

<sup>21</sup> The IFA choose all SET- or mai-listed companies in energy and utilities sector who have majority business of electricity generation as there is no listed company having major revenues from sales of electricity generated by hydropower plant in Thailand and/or in Lao PDR similar to those of XPCL. To apply this valuation approach, there should be sufficient comparable companies. However, the selected comparable companies shall exclude the listed companies that have been listed on the SET or mai less than 360 business days (which are BCPG PCL., B.Grimm Power PCL., Banpu Power PCL., Gulf Energy Development PCL., and Sermuang Power Development PCL.), the listed power plant infrastructure funds (which are Amata B. Grimm Power Plant Infrastructure Fund, North Bangkok Power Plant Block 1 Infrastructure Fund, Electricity Generating Authority of Thailand, and Buriram Sugar Group Power Plant Infrastructure Fund), and the listed companies that have been posted SP sign and/or NP sign at the share valuation date (which are The International Engineering PCL. and Inter Far East Energy Corporation PCL.).



XPCL	Historical P/BV Ratio (times)							
	7 days	15 days	30 days	60 days	90 days	120 days	180 days	360 days
Sahacogen (Chonburi) PCL.	1.85	1.85	1.85	1.84	1.86	1.87	1.86	1.91
Solartron PCL.	0.78	0.72	0.65	0.62	0.65	0.68	0.73	0.88
SPCG PCL.	2.43	2.45	2.40	2.34	2.38	2.32	2.26	2.37
Superblock PCL.	2.21	2.30	2.44	2.51	2.59	2.68	2.83	3.20
TPC Power Holding PCL.	2.80	2.85	2.85	2.85	2.96	3.02	3.17	3.51
Thai Solar Energy PCL.	1.67	1.70	1.69	1.82	1.90	1.93	1.94	2.07
<b>Median<sup>1/</sup> of 12 companies</b>	<b>2.03</b>	<b>2.07</b>	<b>2.13</b>	<b>2.09</b>	<b>2.14</b>	<b>2.13</b>	<b>2.02</b>	<b>1.99</b>
<b>XPCL's firm value (Baht million)</b>	<b>42,296.76</b>	<b>43,273.11</b>	<b>44,402.91</b>	<b>43,603.36</b>	<b>44,697.24</b>	<b>44,342.07</b>	<b>42,139.83</b>	<b>41,544.51</b>

Source: SETSMART

Remark: 1/ The IFA used the median, which is the middle value of a sorted list of selected comparable sample, thus, effect from outliers to the median value was limited.

The firm value of XPCL (100%) based on this approach is equal Baht 41,544.51 – 44,697.24 million. Therefore, value of 7.50% of XPCL is Baht 3,115.84 -3,352.29 million, which is higher than the acquisition price of 7.50% of XPCL's shares at Baht 2,065.00 million by Baht 1,050.84 – 1,287.29 million or 50.89% – 62.34% higher than the acquisition price.

However, the IFA did not use this approach in determining share valuation of XPCL as XPCL is under construction and having no business operation at the present, while the selected comparable companies have their successive business operation for a period of time. Therefore, using the ratios of those comparable SET-listed companies as benchmark for valuation of XPCL's share might not appropriate.

#### 4. Price to Earnings Ratio Approach: P/E Ratio

In this approach, CapAd evaluated earnings per share of XPCL using net profit per share of XPCL for the last 12-month period ended December 31, 2017, audited by a certified auditor approved by the SEC, and multiplied by the median of P/E Ratios of 12 comparable SET- or mai-listed companies<sup>22</sup> in energy and utilities sector who have majority business of electricity generation similar to XPCL. The information is for the period up to February 16, 2018. The details are summarized below:

XPCL	Historical P/E Ratio (times)							
	7 days	15 days	30 days	60 days	90 days	120 days	180 days	360 days
CK Power PCL.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Energy Absolute PCL.	67.28	66.44	65.33	56.93	52.65	49.67	45.27	38.78
Electricity Generating PCL.	10.87	10.74	10.68	10.66	11.00	11.23	11.76	12.69
Glow Energy PCL.	14.50	14.61	14.72	14.75	15.11	15.24	15.00	13.76
Global Power Synergy PCL.	40.64	41.86	41.84	37.33	35.15	32.23	28.64	24.45
Ratchaburi Electricity Generating Holding PCL.	10.39	9.90	9.72	9.64	9.97	10.19	10.78	13.92
Sahacogen (Chonburi) PCL.	14.94	14.95	14.98	14.91	15.40	15.81	17.08	25.04
Solartron PCL.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SPCG PCL.	9.01	9.07	8.90	8.65	8.82	8.60	8.42	8.63
Superblock PCL.	22.21	23.14	24.56	25.24	26.76	28.02	32.98	48.71
TPC Power Holding PCL.	29.19	29.67	29.73	29.75	29.89	29.78	30.05	37.95
Thai Solar Energy PCL.	14.09	14.34	14.28	15.40	16.01	16.19	15.80	16.77
<b>Median<sup>1/</sup> of 10 companies<sup>2/</sup></b>	<b>14.72</b>	<b>14.78</b>	<b>14.85</b>	<b>15.15</b>	<b>15.70</b>	<b>16.00</b>	<b>16.44</b>	<b>20.61</b>
<b>XPCL's firm value (Baht million)</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>

Source: SETSMART

Remark: 1/ The IFA used the median, which is the middle value of a sorted list of selected comparable sample, thus, effect from outliers to the median value was limited.

2/ Excluding CK Power PCL. and Solartron PCL. who have negative earnings and unable to calculate P/E ratio.

<sup>22</sup> Please see Footnote 21.

However, XPCL operated at net loss for the last 12-month period. Therefore, it is unable to calculate share value of XPCL by using P/E Ratio.

## 5. Discounted Cash Flow Approach

This valuation approach takes into account XPCL's future operating performances by deriving present value of future cash flow streams using an appropriate discount rate. The independent financial advisor calculated the Weighted Average Cost of Capital (WACC) to be used as the discount rate and constructed a 33-year forecast of XPCL's cash flow (2018- 2050) to be in line with the concession agreement with the Government of the Lao PDR ("GOL") and the power purchase agreements with and Electricite Du Laos ("EdL"). The scheduled termination date is 31<sup>st</sup> year following the Commercial Operation Date ("COD") based on the concession agreement dated October 29, 2010 and the amendment to the concession agreement dated March 15, 2016. In this financial forecast, CapAd assume that the power purchase agreement with EGAT will be extended for additional 2 years or totaling of 31 years from the COD, which is scheduled on October 29, 2019<sup>23</sup>. The financial forecast is also based on an assumption that XPCL will cease its operations after 2050. In addition, the financial forecast is assumed that there shall not be any significant changes under the current economic conditions and circumstances. Impacts from the transaction between the Company and BEM are excluded from this financial forecast.

CapAd constructed the financial forecast for XPCL based on information and assumptions from XPCL and interviews with the managements and relevant officers. The objective of the financial forecast is to evaluate the fair value of XPCL's shares in order to evaluate appropriateness of acquisition price of XPCL's shares. If there is any change in overall economic outlook and other internal and external factors that materially affect XPCL's business operation or assumptions used herein, fair value derived from financial projection may also change accordingly.

The assumptions for XPCLs financial forecast can be summarized as follows;

Xayaburi Hydropower Project is a run-of-river barrage with total installed capacity of 1,285 MW with average annual generating capacity of 7,589 GWh<sup>24</sup>. XPCL shall sell 1,225 MW of generated electricity to EGAT under the power purchase agreement for of 29 years from the COD, and the remainder of another 60 MW shall be sold to EdL under the power purchase agreement with EdL.

In this financial forecast, CapAd assume that the power purchase agreement EGAT will be extended for additional 2 years or totaling of 31 years from the COD<sup>25</sup> to be ended together with the concession agreement with the GOL. Key assumptions of the financial forecast are as follows;

- **Revenue from sales of electricity**

XPCL is expected to start the unit operation period ("UOP") with EGAT around end of November 2018 and the COD on October 29, 2019.

<sup>23</sup> Based on the power purchase agreement with Electricity Generating Authority of Thailand dated October 29, 2011, term of the power purchase agreement is 29 years from the COD. However, as of the IFA's report date, XPCL has not yet amended the power purchase agreement with EGAT but it is convinced that the power purchase agreement with EGAT can be extended to be ended together with the concession agreement with GOL, which is 31-year period. The average energy tariff under this power purchase agreement with EGAT is approximately Baht 2.07 per kWh which is lower than the average energy tariff for the energy generated from the fossil fuel power plants (such as coal and LNG), which is around Baht 2.90 – 4.30 per kWh in 2016. (Source: Energy Policy and Planning Office, Ministry of Energy). Therefore, risk from unable to extend the additional 2 years of the power purchase agreement with EGAT is limited.

<sup>24</sup> Calculated by Compagnie Nationale du Rhône, CNR Engineering Department ("CNR"), the technical advisor of XPCL, by the complex mathematical models which have been taken into consideration of the following factors: water flow rate, water level, head losses, water weight, rainfall, gravitational acceleration, turbine and generator design, turbine and generator efficiency, number of turbines in operation, operating period, downtimes (such as maintenance of equipment and transmission lines, unplanned power outages, and etc.), mechanical losses (such as friction losses, and etc.), generator losses, and electrical losses (such as transformer losses, power consumption of power plant auxiliaries, transmission line losses, and etc.), and other factors (such as impact of China hydropower developments, impact of hydropower development in Laos, and impact of global climate change). Detailed data and specification of turbine and generator from the manufacturer have also been used in the calculation. (Please see information of CNR in Footnote 16.)

<sup>25</sup> Please see Footnote 23.

Revenue from sales	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F
Operating period	2 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months
Average annual sale of electrical energy to EGAT (GWh)											
- Primary Energy (PE) <sup>1/</sup>	70.90	3,865.77	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00
- Secondary Energy (SE) <sup>1/</sup>	29.62	1,551.88	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00
- Excess Energy (EE) <sup>1/</sup>	23.56	1,275.67	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86
Total energy to EGAT	124.08	6,693.31	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86
Average annual sale of electrical energy to EdL (GWh)											
- Primary Energy (PE) <sup>1/</sup>	-	35.47	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81
- Secondary Energy (SE) <sup>1/</sup>	-	11.77	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62
- Excess Energy (EE) <sup>1/</sup>	-	11.23	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57
Total energy to EdL		58.47	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00
Average energy tariff: EGAT (Baht/kWh)											
- UOP <sup>2/4/</sup>	1.544	1.552	-	-	-	-	-	-	-	-	-
- COD <sup>3/4/</sup>	-	2.030	2.060	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071
Average energy tariff: EdL (Baht/kWh)	2.038	2.038	2.038	2.038	2.038	2.038	2.038	2.038	2.038	2.038	2.038
Revenue from sales of electricity to EGAT (Baht million)	<sup>-5/</sup>	2,347.97 <sup>5/</sup>	14,319.13	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48
Revenue from sales of electricity to EdL (Baht million)	<sup>-5/</sup>	119.17	699.14	699.14	699.14	699.14	699.14	699.14	699.14	699.14	699.14
Total revenue from sales of electricity (Baht million)	<sup>-5/</sup>	2,467.14 <sup>5/</sup>	15,018.27	15,098.61	15,098.61	15,098.61	15,098.61	15,098.61	15,098.61	15,098.61	15,098.61

Revenue from sales	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	2037F	2038F	2039F
Operating period	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months
Average annual sale of electrical energy to EGAT (GWh)											
- Primary Energy (PE) <sup>1/</sup>	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00
- Secondary Energy (SE) <sup>1/</sup>	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00
- Excess Energy (EE) <sup>1/</sup>	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86
Total energy to EGAT	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86
Average annual sale of electrical energy to EdL (GWh)											
- Primary Energy (PE) <sup>1/</sup>	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81
- Secondary Energy (SE) <sup>1/</sup>	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62
- Excess Energy (EE) <sup>1/</sup>	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57
Total energy to EdL	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00
Average energy tariff: EGAT (Baht/kWh)											
- UOP <sup>2/4/</sup>	-	-	-	-	-	-	-	-	-	-	-
- COD <sup>3/4/</sup>	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071
Average energy tariff: EdL (Baht/kWh)	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350
Revenue from sales of electricity to EGAT (Baht million)	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48
Revenue from sales of electricity to EdL (Baht million)	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08
Total revenue from sales of electricity (Baht million)	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55

Revenue from sales	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
Operating period	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	10 months
Average annual sale of electrical energy to EGAT (GWh)											
- Primary Energy (PE) <sup>1/</sup>	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	4,299.00	3,582.50
- Secondary Energy (SE) <sup>1/</sup>	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,410.00	1,175.00
- Excess Energy (EE) <sup>1/</sup>	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,242.86	1,035.72
Total energy to EGAT	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	6,951.86	5,793.22
Average annual sale of electrical energy to EdL (GWh)											
- Primary Energy (PE) <sup>1/</sup>	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81	212.81	177.34
- Secondary Energy (SE) <sup>1/</sup>	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62	70.62	58.85
- Excess Energy (EE) <sup>1/</sup>	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57	59.57	56.15
Total energy to EdL	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00	343.00	292.34
Average energy tariff: EGAT (Baht/kWh)											
- UOP <sup>2/4/</sup>	-	-	-	-	-	-	-	-	-	-	-
- COD <sup>3/4/</sup>	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071	2.071
Average energy tariff: EdL (Baht/kWh)	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350	2.350
Revenue from sales of electricity to EGAT (Baht million)	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	11,999.56	14,399.48	11,999.56
Revenue from sales of electricity to EdL (Baht million)	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	687.02	806.08	687.02
Total revenue from sales of electricity (Baht million)	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	12,686.58	15,205.55	12,686.58

Remark:

1/ Definition from the power purchase agreement:

- Primary Energy – The maximum weekly dispatched energy on Monday – Saturday which is at maximum of 16 hours per day.
- Secondary Energy – The maximum weekly dispatched energy on Monday – Saturday which is at maximum of 5.35 hours per day and maximum of 8 hours on Sunday.
- Excess Energy - is the excess electricity generated when XPCL finds that the water flow rate exceeds the forecast, thereby, in such month, generating electricity in excess of the target designated in (a) and (b).

However, the actual delivery of energy will follow the weekly declaration. Each energy component for a given week shall subject to expected daily water flow each week.

2/ Unit Operation Period: November 2018 – October 2019.

3/ 31-year period of COD from November 2019 – October 2050<sup>26</sup>.

4/ Weight average of the energy tariff from energy supply of PE, SE and EE.

Payment currency for Primary Energy from EGAT shall be in USD and Thai Baht, while all payments for Secondary Energy and Excess Energy shall be in Thai Baht. Payments from EdL shall be in Thai Baht or kip (not exceeding 10%).

Based on the foreign exchange rate of USD/Baht 31.50 – 33.00.

5/ Revenue from sales of electricity during UOP of Baht 191.60 million and Baht 8,593.89 million in 2018 – 2019, respectively, shall be included in the project cost (deducted from the project cost).

### Revenue from sales of electricity to EGAT

#### o Energy Supply

Based on the power purchase agreement, EGAT commits to purchase all Primary Energy and Secondary Energy generated by 7 generating units with capacity of 175 MW each with a yearly average production capacity of 7,234.65 GWh (million units) or equivalent to energy available to EGAT of around 7,089.96 GWh<sup>27</sup> (million unit) per year after the adjustment for transmission loss of around 2% considering the distance of transmission line.

From the power purchase agreement, the annual supply target to be purchased by EGAT can be divided into:

- Primary Energy or PE: Committed energy of 4,299 million units per year, the payments for which will be made in Thai Baht and USD (ratio of payment in Thai Bath and USD is 50:50)
- Secondary Energy or SE: Committed energy annual supply target of 1,410 million units per year, the payments for which will be made in Thai Baht.

<sup>26</sup> Please see Footnote 23.

<sup>27</sup> Based on conservative basis, the IFA assumed the supply energy to EGAT of around 7,089.96 GWh and the supply energy to EdL of around 343 GWh, totaling of 7,432.96 GWh, which is lower than the average production capacity of 7,589 GWh estimated by CNR, the technical advisor of XPCL.

- (c) Excess Energy or EE: The excess electricity generated when XPCL finds that the water flow rate exceeds the forecast, thereby, in such month, generating electricity in excess of the target designated in (a) and (b) as declared to EGAT in advance. The excess electricity will be considered the Excess Energy, all payments for which will be made in Thai Baht.

In addition, if XPCL is able to generate electricity in excess of the designated target of PE or SE as determined in the power purchase agreement, such Excess Energy may be accumulated in the Reserve Account, which may be utilized in the future in any year in which it cannot generate and sell electricity to EGAT to meet the target as specified in the power purchase agreement.

Excess Energy Account shall be deducted by 25% of the final balance of excess revenue account and transferred to EGAT Reconciliation Account. Payment to EGAT shall be in accordance with the terms and conditions in the power purchase agreement.

Besides committed annual supply target of 4,299 GWh per year and 1,410 GWh per year for PE component and SE component, respectively, CapAd assumes that EGAT will purchase the excess energy at around 90% of available excess energy due to the excess energy tariff is relatively low, and EGAT can use the excess energy for pumping water back to dam reservoirs in Thailand at night and release the water from the dams to generate electricity for sale during day time at higher price.

o Energy Tariff

Energy tariff for each energy component shall be fixed throughout the power purchase agreement period, where the Primary Energy shall have the highest energy tariff and the Excess Energy shall have the lowest energy tariff.

Revenue from sales of electricity to EdL

Based on the power purchase agreement, EdL agrees to purchase total energy of 343 GWh generated by 1 generating unit with capacity of 60 MW. The energy tariff shall be adjusted once in the 11<sup>th</sup> year.

• **Operating Expenses (excluding the depreciation and amortization expenses)**

Operating expenses consist of operating and maintenance expenses (O&M expenses), engineering consultant fee, spare part & material costs, repair and maintenance costs, land rental fee, other operating expenses, and royalty fee.

(Unit: Baht million)

Operating expenses	2018F <sup>1/</sup>	2019F <sup>1/</sup>	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F
Operating expenses	-	688.21	514.28	522.07	537.43	507.51	569.18	832.48 <sup>2/</sup>	848.35	864.71	881.55
% of operating expenses to revenue from sales of electricity	-	27.90%	3.42%	3.46%	3.56%	3.36%	3.77%	5.51% <sup>2/</sup>	5.62%	5.73%	5.84%

Operating expenses	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	2037F	2038F	2039F
Operating expenses	926.45	1,071.03 <sup>2/</sup>	1,089.43	1,108.39	1,127.92	1,173.44	1,320.87 <sup>2/</sup>	1,342.20	1,364.18	1,386.82	1,435.55
% of operating expenses to revenue from sales of electricity	6.09%	7.04% <sup>2/</sup>	7.16%	7.29%	7.42%	7.72%	8.69% <sup>2/</sup>	8.83%	8.97%	9.12%	9.44%

Operating expenses	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
Operating expenses	1,586.27 <sup>2/</sup>	1,611.01	1,636.49	1,662.73	1,689.83	1,717.67	1,746.35	1,902.60	2,566.58 <sup>2/</sup>	2,597.99	2,002.27
% of operating expenses to revenue from sales of electricity	10.43% <sup>2/</sup>	10.59%	10.76%	10.94%	11.11%	11.30%	11.48%	12.51%	16.88% <sup>2/</sup>	17.09%	17.36%

Remark:

- 1/ Operating expense during UOP is around Baht 72.91 million and Baht 374.96 million in 2018 – 2019, respectively, and included in the project cost.
- 2/ The operating expenses will be increased due mainly to the increase in royalty fee as specified in the concession agreement.

Hydroelectric power project is a capital intensive project while a production cost of electricity is lower than those of a thermal power project that use fuel energy. In this financial forecast, CapAd considered operating and maintenance expenses of Nam Ngum 2 Hydropower Project, which is

located in Lao PDR similar to Xayaburi Hydropower Project, as a comparison. However, both power plants are different type of hydroelectric power plants, where Nam Ngum 2 Hydropower Project is a storage dam and Xayaburi Hydropower Project is run-of-river barrage. In addition, production capacity of Xayaburi Hydropower Project is much higher than those of Nam Ngum 2. Since Xayaburi Hydropower Project is the first largest run-of-river barrage hydroelectric power plant located on the Southern Mekong River, therefore, there is no ultimate comparison project to Xayaburi Hydropower Project.

Operating expenses of Xayaburi Hydropower Project are based on estimation of the engineering team and the management of XPCL by considering the actual cost and expenses at the present and estimation of future expenses from their experience and reference to other projects. CapAd has considered the operating expenses of the Xayaburi Hydropower Project by comparing to the operating expenses of Nam Ngum 2 and adjusted with economy of scale and type of hydropower plants, and viewed that the estimated operating expenses are possible.

Key assumptions are as follows;

- Operating and maintenance expenses (O&M), which will be operated by XPCL. At present, XPCL is recruiting experience O&M team. Majority of O&M expenses are employee expenses for operating and maintenance works and operating expenses for operating and maintenance of power plant and transmission system. The O&M expenses are estimated at Baht 240 million per year and to increase by 3% per annum. Operating and maintenance expenses cover regular repair and maintenance but do not include costs for partial overhaul and major overhaul in every 7 years and 12 years, respectively. *(Please see more details in Capital Expenditure on Page 37 of this report.)*
- Spare part & material, repair and maintenance cost is estimated at Baht 84 million per year (the 1<sup>st</sup> year of COD), and to increase by 3% per annum.
- Land rental fee to GOL where the payments for which will be made in USD, is around Baht 1.2 million in the 1st year and to increase by 5% every 5 years.
- Engineering consultant fee is around Baht 75 million per annum and to increase by 3% per annum during the UOP and the 1<sup>st</sup> – 3<sup>rd</sup> year after the COD. Due to higher experience of XPCL's staffs, engineering consultant fee are expected to be lower at Baht 40 million per year in the 4<sup>th</sup> year after the COD and to increase by 3% per annum.
- Other operating expenses consist of technical advisory fee, traveling expenses, environmental and social obligation and other expenses, totaling Baht 90 million per year, and to increase by 3% per annum.
- Bonus to CHK for early delivery of EPC works and allowing XPCL to be able to generate electricity before the PPA's schedule (before the testing and commissioning (scheduled UOP), which is around January 2019). Mechanism for calculation is based on the terms and conditions in the EPC contract with CHK. Bonus to CHK is estimated at Baht 606.11 million, which is one-off expense.
- Royalty fee in term of royalty fee to GOL, which is a variable expense to revenue from sales of electricity. Based on the concession agreement dated October 29, 2010 and the first amendment to the concession agreement dated March 15, 2016, the royalty fee is 2.00% - 10.00% of revenues from sales of electricity starting from the 6<sup>th</sup> year after COD.

Operating expenses are accounted for 3.42% - 27.90% of revenue from sales of electricity, or around Baht 0.39 – 2.02 million per MW.

Operating expenses (excluding royalty fee and bonus to CHK) are around 3.33% - 7.36% of revenue from sales of electricity, or around Baht 0.36 – 0.84 million per MW (excluding royalty fee and bonus to CHK). Majority of these expenses are O&M expenses of around 55% of operating expenses (exclusive of royalty fee and bonus to CHK), spare part & material, repair and maintenance cost of around 20% of operating expenses (exclusive of royalty fee and bonus to CHK), engineering consultant fee of around 8% of operating expenses (exclusive of royalty fee and bonus to CHK), and other expense of around 17% of operating expenses (exclusive of royalty fee and bonus to CHK).

• **Administrative Expenses (excluding the depreciation and amortization expenses)**

Administrative expenses consist of salary and employee expenses, directors' remuneration, insurance premium, travelling expenses, office expenses, public relation expenses, donation, meeting and entertainment expenses, and other expenses.

Administrative expenses in 2015 – 2017 were Baht 130.14 million, Baht 163.85 million, and Baht 75.80 million, respectively. Administrative expenses decreased in 2017 from the prior years due

mainly to travelling expenses and some expenses were lower as the construction of the Xayaburi Hydropower Project is almost completed.

Summary of the key assumptions are as follows;

- Employee expenses in 2017 were Baht 16.86 million. In this financial forecast, CapAd assumes that the employee expenses are Baht 19.80 million in 2018, or increased by 17% from the prior year based on the estimation of XPCL that there shall be an increasing number of employee in order to complete the training and be ready for the COD in October 2019. In 2019 – 2050, employee expenses are assumed to increase by 6% per annum.
- Directors' remuneration in 2017 was Baht 5.38 million. In this financial forecast, CapAd assumes that directors' remuneration is to increase at a constant rate throughout the projection period.
- Services fee is expense paid to CKP for administrative works, accounting, and other allocated expenses. At the present, services fee is around Baht 5.78 million per month. In this financial forecast, share services fees are assumed to increase by 3% per annum based on target inflation rate.
- Transportation expenses in 2017 were Baht 16.21 million. In this financial forecast, CapAd assumed the transportation expenses to increase 3% per annum based on target inflation rate.
- Office expenses, public relation expenses, donation and meeting and entertainment expenses in 2017 were Baht 10.14 million, Baht 10.73 million and Baht 13.13 million, respectively. In this financial forecast, these expenses are assumed to increase by 3% per annum based on target inflation rate.
- Insurance expenses consist of property insurance, business interruption insurance, third party insurance and indemnity insurance, totaling of Baht 188 million per annum. CapAd found that the insurance rate of XPCL is closed to those of Nam Ngum 2.
- Other administrative expenses were Baht 2.36 million in 2017 which was significantly lower than the other administrative expenses of the prior year. In this financial forecast, CapAd assumed that other administrative expenses are Baht 16.49 million in 2018, which was equivalent to the average other administrative expenses in 2015 – 2017. In addition, in 2019 – 2050, other administrative expenses are assumed to increase by 3% per annum based on target inflation rate.

(Unit: Baht million)

Administrative exp.	2015A	2016A	2017A	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F
Administrative expenses	130.14	163.85	75.80	94.74	141.46 <sup>1/</sup>	363.53 <sup>2/</sup>	369.66	376.02	382.64	389.50	396.64	404.05
% growth of administrative expenses	10.14%	25.90%	-53.74%	24.98%	49.32% <sup>1/</sup>	156.85% <sup>2/</sup>	1.74%	1.72%	1.76%	1.79%	1.83%	1.87%
% of administrative expenses to revenue from sales of electricity	n.a.	n.a.	n.a.	n.a.	5.73%	2.42%	2.45%	2.49%	2.53%	2.58%	2.63%	2.68%

Administrative exp.	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	2037F	2038F
Administrative expenses	411.76	419.77	428.26	436.92	445.93	455.30	465.04	475.19	485.75	496.74	508.18	520.10
% growth of administrative expenses	1.91%	1.95%	2.02%	2.02%	2.06%	2.10%	2.14%	2.18%	2.22%	2.26%	2.30%	2.35%
% of administrative expenses to revenue from sales of electricity	2.73%	2.78%	2.82%	2.87%	2.93%	2.99%	3.06%	3.13%	3.19%	3.27%	3.34%	3.42%

Administrative exp.	2039F	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
Administrative expenses	532.52	545.45	558.93	572.98	587.63	602.90	618.83	635.44	652.77	670.86	689.74	591.23
% growth of administrative expenses	2.39%	2.43%	2.47%	2.51%	2.56%	2.60%	2.64%	2.68%	2.73%	2.77%	2.81%	-14.28%
% of administrative expenses to revenue from sales of electricity	3.50%	3.59%	3.68%	3.77%	3.86%	3.97%	4.07%	4.18%	4.29%	4.41%	4.54%	4.66%

Remark:

- 1/ Administrative expenses in 2019 increased due mainly to some items of administrative expenses are capitalized to the project cost prior to the COD, such as services expenses to CKP. In addition, insurance premium increased after the COD of the Project (insurance for 2 months of November – December 2019).
- 2/ Administrative expenses increased due mainly to insurance premium paid for the full year of 2020 around Baht 188 million.

### • **Financial Costs**

Financial cost comprised of interest expenses for long-term loans from financial institutions, long-term loans from related parties and other bank charges. Financial cost is recognized to statement of income after the COD. XPCL's current borrowing rate is referenced to MLR and LIBOR based on the loan agreements. Summary of credit line and loan outstanding are as follows;

	<b>Credit Line</b>	<b>Outstanding Loans as of December 31, 2017<sup>1/</sup></b>
Long-term loans from financial institutions: Tranche A <sup>2/</sup>	Baht 56,409 million	Baht 44,980 million
Long-term loans from financial institutions: Tranche B <sup>2/</sup>	USD 711 million	USD 622 million
Long-term loans from related parties (Sponsor Loans) <sup>3/</sup>	Baht 17,241 million	Baht 14,882.32 million

Remark:

- 1/ Based on audited financial statement of XPCL for the year ended December 31, 2017
- 2/ Under long-term loan agreement with domestic financial institutions dated October 31, 2011, XPCL obtained 4 credit facilities as follows:
  - Tranche A: Long-term loans with credit line of Baht 56,409 million for investment in Xayaburi Hydropower Project.
  - Tranche B: Long-term loans with credit line of USD 711 million for investment in Xayaburi Hydropower Project.
  - Tranche C: Guarantee facility of USD 49 million to guarantee XPCL's obligation under the Power Purchase Agreement with EGAT.
  - Tranche D: facility with credit line of Baht 5,879 million for use in payment of project costs in case XPCL cannot receive the electricity revenues from the testing and commissioning during the UOP, whereby all base equity, Tranche A and Tranche B facilities have been fully utilized to pay the project costs. At present, Tranche D facility has not been drawn down.
- 3/ Under the Sponsor Loan Agreement for payment of cost overrun due to additional work from requirement of the Mekong River Commission (MRC).

### • **Corporate Income Tax**

Based on the concession agreement with the GOL dated October 29, 2010 and the Amendment No. 1 dated March 15, 2016, corporate income tax rate is in the range of 0% - 15%. Payment of the corporate income tax shall start in 2024.

### • **Project Costs**

Project costs consist of construction cost based on Engineering, Procurement, and Construction (EPC) Contract, engineering and management expenses, environmental and social management plan, financial costs, and other emergency expenses which can be summarized as follows:

(Unit: Baht million)

	<b>Project cost - budget<sup>1/</sup></b>	<b>Construction in progress based on the audited financial statement as of December 31, 2017<sup>2/</sup></b>
EPC Costs	95,410	80,630.02
Project expenses	14,249	8,973.04
Project costs before financial costs	109,659	89,603.06
Financial costs	25,616	16,804.19
<b>Total project costs</b>	<b>135,275</b>	<b>106,407.25</b>
Revenue from sales of electricity during UOP	(8,785) <sup>3/</sup>	
<b>Project costs - net</b>	<b>126,489</b>	

Remark: 1/ Based on the budget of XPCL.

2/ Based on audited financial statement of XPCL for the year ended December 31, 2017.

3/ Please see assumptions on revenue from sales of electricity during UOP in Part 3 Clause 5 of this report.

Total project cost - net is Baht 126,489 million or Baht 98.4 million per MW, which is in the range of general project costs of large run-of-river hydropower plant project<sup>28</sup> at approximately 1,050 – 7,650 USD/kW (around Baht 35 – 250 million per MW). (Source: *Renewable Energy Technologies: Cost Analysis Series, Volume 1, Issue 3/5, Hydropower, June 2012, prepared by International Renewable Energy Agency*).

At the end of January 2018, project completion was around 89.29% of total project value, where Phase 1 (Civil Works), Phase 2 (Hydro Mechanical Works), Phase 3 (Electro Mechanical Works)

<sup>28</sup> Large run-of-river hydropower plant project with production capacity of over 100 MW.



and Phase 4 (Transmission Line) were completed around 92.69%, 85.20%, 80.60% and 81.50%,<sup>29</sup> respectively. The construction is expected to be completed by October 2019.

- **Capital Expenditure**

XPCL has planned a partial overhaul in every 7 years and a major overhaul in every 12 years after the COD. The estimated cost for a partial overhaul is USD 8 million (or around 0.3% of EPC cost), and estimated cost for a major overhaul is USD 20 million (or around 0.7% of EPC cost), which were estimated by the technical advisor of the lenders (Pöyry Energy Limited (Thailand)) and engineers of XPCL. In addition, in this financial forecast, the IFA allocated cash flows to Maintenance Reserve Account to be consistent with the partial and major overhaul schedule.

Apart from capital expenditures related to power plant, CapAd assumed capital expenditure for office at Baht 4 million per year throughout the projection period.

- **Assets and Liabilities Turnover**

Based on conditions in related agreements and XPCL's policies, key working capital turnovers are as follows:

Trade account receivables and other receivables	45 days on average
Trade account payables and other payables	30 days on average
Account payables GOL – royalty fee	45 days on average
Construction payables	30 days on average

Summary of financial projection of 2018 - 2050 is as follows;

(Unit: Baht million)

XPCL	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F
Revenue from EGAT	-	2,347.97	14,319.13	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48
Revenue from EdL	-	119.17	699.14	699.14	699.14	699.14	699.14	699.14	699.14	699.14	699.14
Total revenues	-	2,467.14	15,018.27	15,098.61	15,098.61	15,098.61	15,098.61	15,098.61	15,098.61	15,098.61	15,098.61
EBITDA	(94.74)	1,637.47	14,140.63	14,206.89	14,185.16	14,208.46	14,139.93	13,869.50	13,846.21	13,822.15	13,797.30
EBIT	(114.53)	1,476.04	9,648.83	9,721.85	10,055.69	10,088.89	10,020.48	9,750.05	9,726.76	9,702.70	9,671.43
Net profit	(114.53)	651.33	4,319.78	4,145.69	4,811.15	5,215.95	5,532.21	5,605.75	6,053.35	6,541.83	7,069.91
<b>Financial position</b>											
Total assets	122,331.26	129,959.64	134,965.35	134,025.81	132,798.40	131,430.34	129,789.66	127,521.80	124,945.29	122,051.52	118,776.45
Total liabilities	98,075.68	103,768.81	104,454.74	99,369.51	93,330.95	86,746.94	79,574.06	71,700.44	63,070.58	53,634.98	43,290.00
Shareholders' equity	24,255.57	26,190.83	30,510.61	34,656.30	39,467.45	44,683.40	50,215.61	55,821.36	61,874.72	68,416.54	75,486.45

XPCL	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	2037F	2038F	2039F
Revenue from EGAT	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48
Revenue from EdL	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08
Total revenues	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55
EBITDA	13,850.85	13,697.61	13,670.19	13,641.87	13,612.59	13,556.93	13,398.94	13,366.61	13,333.19	13,298.63	13,237.49
EBIT	9,692.89	9,539.65	9,512.24	9,474.75	9,399.68	9,337.73	9,154.73	9,154.49	9,121.07	9,086.51	9,025.37
Net profit	7,699.71	8,211.16	8,920.09	9,283.52	9,209.95	9,102.75	8,696.41	8,696.18	8,664.43	8,631.60	8,543.43
<b>Financial position</b>											
Total assets	104,619.78	92,344.54	78,362.74	78,798.68	79,234.66	79,673.83	80,125.53	80,561.67	80,997.85	81,434.09	77,529.72
Total liabilities	27,593.39	15,318.16	1,336.35	1,772.29	2,208.28	2,647.44	3,099.14	3,535.28	3,971.46	4,407.70	503.33
Shareholders' equity	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39

XPCL	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
Revenue from EGAT	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	14,399.48	11,999.56
Revenue from EdL	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	806.08	687.02
Total revenues	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	15,205.55	12,686.58
EBITDA	13,073.83	13,035.61	12,996.08	12,955.20	12,912.82	12,869.05	12,823.77	12,650.18	11,968.11	11,917.82	9,893.08
EBIT	8,861.70	8,823.49	8,783.96	8,743.07	8,694.14	8,604.51	8,559.22	8,385.64	7,709.85	7,559.30	6,766.00
Net profit	8,240.81	8,205.27	8,168.51	8,130.48	8,084.98	7,958.60	7,702.74	7,511.58	6,745.58	6,582.35	5,750.66

<sup>29</sup> Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).

XPCL	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
<b>Financial position</b>											
Total assets	77,981.70	78,418.11	78,854.58	79,291.12	79,727.73	80,164.40	80,601.13	81,053.56	77,659.13	78,096.10	77,385.69
Total liabilities	955.31	1,391.72	1,828.19	2,264.73	2,701.34	3,138.01	3,574.74	4,027.17	632.74	1,069.71	359.30
Shareholders' equity	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39	77,026.39

- **Terminal Value**

CapAd assumes no terminal value after the end of concession period.

- **Discount Rate**

The discount rate applied to the calculation of the present value of free cash flow is the Weighted Average Cost of Capital (WACC), which derived from the weighted average of Cost of Debt (Kd) and Cost of Equity (Ke) based on the following formula;

WACC	=	$Ke * E / (D + E) + Kd * (1 - T) * D / (D + E)$
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Where Ke = Cost of equity or shareholders' required rate of return ( $R_e$ )

Kd = Cost of debt or loan interest rate of XPCL

T = Corporate income tax rate

E = Total shareholders' equity

D = Interest-bearing debts

Cost of equity ( $K_e$ ) or the required rate of return for shareholders ( $R_e$ ) is derived from the Capital Asset Pricing Model (CAPM) as follows;

Ke (or Re)	=	$R_f + \beta (R_m - R_f)$
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Where

Risk Free Rate ( $R_f$ ) = 3.30% per annum based on 33-year government bond yield (information as of February 16, 2018), which is equivalent to the projection period.

Beta ( $\beta$ ) = 0.447 – 1.879 times based on unlevered beta of the comparable 13 comparable SET- or mai-listed companies<sup>30</sup> in energy and utilities sector (1-year historical data until February 16, 2018) and then adjusted with estimated D/E Ratio of XPCL.

Market Risk ( $R_m$ ) = 13.24% per annum, which is the 26-year average rate of annual return from investment in the Stock Exchange of Thailand from 1992 – 2017 (period from the enforcement of the Securities and Exchange Act B.E. 2535) as it is the most suitable period to reflect average return from the SET

Kd = 5.90% - 6.14% per annum, based on average borrowing rate of XPCL from loan agreements

D/E Ratio = Estimated D/E Ratio at 0 – 4 times, equivalent to estimate D/E Ratios of XPCL throughout projection period. The D/E Ratio is at maximum in 2018, and gradually decrease when XPCL make repayment until fully repaid of the loans outstanding in 2031.

T = Estimated corporate income tax rate of 0% - 15% per annum

Therefore, the discount rate or XPCL's WACC is equal to 7.74% – 9.31% per annum.

<sup>30</sup> The IFA chose all SET- or mai-listed companies in energy and utilities sector who have core business of electricity generation as there is no listed company having major revenues from sales of electricity generated by hydropower plant in Thailand and/or in Lao PDR similar to those of XPCL. To apply this valuation approach, there should be sufficient comparable companies. However, the selected comparable companies excluded (1) the listed companies that have been listed on the SET or mai after January 16, 2017 (which are B.Grimm Power PCL., Gulf Energy Development PCL., and Sermuang Power Development PCL.), (2) the listed power plant infrastructure funds (which are Amata B. Grimm Power Plant Infrastructure Fund, North Bangkok Power Plant Block 1 Infrastructure Fund, Electricity Generating Authority of Thailand, and Buriram Sugar Group Power Plant Infrastructure Fund), (3) the listed companies that have been posted SP sign and/or NP sign at the share valuation date (which are The International Engineering PCL. and Inter Far East Energy Corporation PCL.), and (4) Sahacogen (Chonburi) PCL. That has low trading liquidity. Therefore, the remaining comparable companies are BCPG, BPP, CKP, EA, EGCO, GLOW, GPSC, RATCH, SOLAR, SPCG, SUPER, TPCH, and TSE.

By using above information and assumptions, calculation of XPCL's future cash flow and value are as follows;

(Unit: Baht million)

XPCL	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F
Free Cash Flow to the Firm	(11,091.16)	(2,246.66)	15,310.40	14,535.29	14,524.08	14,543.67	14,466.23	14,124.74	14,061.64	14,027.65	13,992.06
Present Value of FCFF	(10,146.99)	(1,880.50)	11,749.86	10,233.02	9,386.02	8,633.41	7,895.12	7,096.79	6,510.04	6,027.59	5,580.22

XPCL	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	2037F	2038F	2039F
Free Cash Flow to the Firm	9,600.83	13,884.79	13,827.33	13,791.63	13,763.91	13,665.97	13,296.23	13,248.34	13,216.64	13,183.87	8,755.08
Present Value of FCFF	3,553.77	4,770.14	4,409.01	4,081.59	3,780.65	3,483.98	3,146.11	2,909.50	2,693.95	2,494.15	1,537.27

XPCL	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
Free Cash Flow to the Firm	12,808.81	12,757.71	12,721.01	12,683.05	12,699.17	12,618.72	12,362.93	12,187.46	7,606.03	11,376.45	10,042.51
Present Value of FCFF	2,087.42	1,929.68	1,785.85	1,652.56	1,535.75	1,416.35	1,287.92	1,178.39	682.57	947.56	776.34

XPCL	(Baht million)
<b>Present Value of Free Cash Flow</b>	<b>113,225.07</b>
Add: Cash and cash equivalent as of December 31, 2017	945.00 <sup>1/</sup>
Less: Outstanding interest bearing debts as of December 31, 2017	(85,826.95) <sup>1/</sup>
<b>Net present value of cash flow as of December 31, 2017</b>	<b>28,343.13</b>
Add: Capital increase of XPCL in January – May 2018	1,432.49 <sup>2/</sup>
<b>Firm value of XPCL – after adjustment (as of May 31, 2018)</b>	<b>29,775.61</b>
<b>Firm value of XPCL at 7.50% (as of May 31, 2018)</b>	<b>2,233.17</b>

Remark:

As of December 31, 2017, registered capital of XPCL consisted of (a) 1,625,000,000 ordinary shares with par value of Baht 10.00 per share were fully paid, accounted for 73.65% of total paid-up capital of XPCL, and (b) 1,061,100,000 with par value of Baht 10.00 per share were paid-up at Baht 5.48 per share, accounted for 26.35% of total paid-up capital of XPCL.

1/ Cash and cash equivalent was Baht 945.00 million, and outstanding interest bearing debts consisted of long-term loans from financial institution of Baht 69,246.28 million, long-term loans from related parties of Baht 16,218.90 million, derivative financial liabilities of Baht 327.13 million and accrued interest of Baht 34.64 million, based on financial statements of XPCL as of December 31, 2017, audited by a certified auditor.

2/ Based on capital increased schedule of XPCL, XPCL will call-in additional capital in January – May 2018 (The executed date of this transaction is estimated at the end of May 2018.) totaling Baht 1,432.49 million.

The firm value of XPCL (100%) based on this approach is equal Baht 29,775.61 million or value of 7.50% of XPCL is Baht 2,233.17 million, which is higher than the acquisition price of 7.50% of XPCL's shares at Baht 2,065.00 million by Baht 168.17 million or 8.14% higher than the acquisition price.

Under the Power Purchase Agreement with EGAT, extension of the term is upon written terms and conditions mutually agreed to by the parties. After analyzing the possibility of extension of the terms for another 2 years to be end together with the concession agreement with the GOL, the IFA viewed that there is a high possibility for extension of agreement as the average energy tariff that EGAT purchase from the Xayaburi Hydropower Project is relatively low (The average energy tariff is around Baht 2.071 per kWh.) comparing to average energy tariff of around Baht 2.90 – 4.30 per kWh for the energy generated from the fossil fuel power plants (such as coal and LNG) by Independent Power Producer (IPP with production capacity over 90 MW.) and Small Power Producer (SPP with production capacity of 10 – 90 MW). Energy tariff from Xayaburi Hydropower Project is also relatively lower than the Feed-in Tariff (FiT) of around Baht 4.90 – 6.85 per kWh (for the projects that start commercial operation in 2017) for the energy generated from renewable energy (such as solar, wind and hydro (production capacity less than 200 kW)) by the Very Small Power Producer (VSPP with production capacity lower than 10 MW), and lower than the Feed-in Tariff (FiT) of around Baht 4.26 – 7.04 per kWh (for the projects that start commercial operation in 2017) for the energy generated from biomass. Explicitly, the average energy tariff of Xayaburi Hydropower Project is relatively lower than the energy tariff generated by other fuel sources. In addition, under the Thailand Power Development Plan for 2015 – 2036, there was an adjustment to the proportion of energy sources to

ensure power system balance and reliability, including the shortage of LNG in the future and trend toward clean energy technology and renewable energy power generation. Therefore, the IFA viewed that it is highly possible for XPCL to extend the PPA with EGAT for another 2 years to end together with the concession agreement with the GOL. (Source of energy tariff: Energy Policy and Planning Office, Ministry of Energy <http://www.eppo.go.th> and Energy Regulatory Commission <http://www.erc.or.th>).

However, for information to the shareholders only, the IFA evaluated the effects to cash flows of Xayaburi Hydropower Project in 2 scenarios as follows:

- (1) Scenario 1: The cash flow projection period of the Xayaburi Hydropower Project is 29 years to be in line with the Power Purchase Agreement with EGAT (29 years) without the extension of the PPA with EGAT. In this scenario, the IFA assumed that XPCL shall hand over Xayaburi Hydropower Project to the GOL prior to the end of the concession agreement (31 years). This is due to it is uneconomic for XPCL to operate the Xayaburi Hydropower Project for another 2 years to generate only 343 GWh of energy to EdL.

Based on above assumptions, the firm value of XPCL (100%) is equal Baht 28,072.09 million and value of 7.50% of XPCL is around Baht 2,105.41 million.

- (2) Scenario 2: The cash flow projection period of the Xayaburi Hydropower Project is 31 years as the PPA with EGAT is extended for another 2 years to be end together with the concession agreement with the GOL. The average energy tariff for the energy supply to EGAT is assumed at Bath 2.071 per kWh throughout the 29 years of the PPA with EGAT, and the average energy tariff for the extension period is increased to Baht 2.61 per kWh (assumed the energy tariffs to increase by 0.8% per annum throughout the 29-year period) based on the estimations of XPCL to increase the energy tariffs as under the PPA with EGAT, extension of the term is upon written terms and conditions mutually agreed to by the parties.

Based on above assumptions, the firm value of XPCL (100%) is equal Baht 30,245.45 million and value of 7.50% of XPCL is around Baht 2,268.41 million.

In addition, CapAd has conducted a sensitivity analysis of firm value in the base case by adjusting the discount rate or WACC increased (decreased) by 2.00% from the calculated discount rate mentioned above. The IFA is of the opinion that such 2% adjustment should cover volatility of assumptions at a certain level, but not incur too wide valuation range.

	Unit	Discounted Rate (% per annum)		
		7.90% - 9.49% <sup>1/</sup>	7.74% - 9.31%	7.59% - 9.12% <sup>2/</sup>
Firm value of XPCL <sup>3/</sup>	Baht million	27,509.84	29,775.61	32,103.89
Firm value of XPCL at 7.50% <sup>3/</sup>	Baht million	2,063.24	2,233.17	2,407.79

Remark: 1/ 7.90% = 7.74% \* 102%, and 9.49% = 9.31% \* 102%.

2/ 7.59% = 7.74% \* 98%, and 9.12% = 9.31% \* 98%.

3/ Firm value as of May 31, 2018.

As shown in the table above, the firm value of XPCL (100%) is Baht 27,509.84 – 32,103.89 million. Therefore, value of 7.50% of XPCL is Baht 2,063.24 – 2,407.79 million, which is higher (lower) than the acquisition price of 7.50% of XPCL's shares at Baht 2,065.00 million by Baht (1.76) – 342.79 million or 0.09% lower and 16.60% higher than the acquisition price.

Please noted that the financial projection is based on assumptions provided by XPCL, and adjusted by the Independent Financial Advisor based on conservative basis, and under the current economic conditions and circumstance. If there is any change in the business plan and economic condition that will materially affect the assumptions and variables used herein, the future operating results of XPCL might not be as projected and the value of the XPCL's share price evaluated by this approach may also change accordingly.

## 6. Summary of the Independent Financial Advisor's Opinion on the Fair Value of XPCL

The value of XPCL's shares derived from various valuation approaches can be summarized in the table below;

XPCL	XPCL's Firm Value (100%)	7.5% of XPCL Firm Value	Acquisition Price of 7.5% of XPCL	Fair Value Higher (Lower) than the Acquisition Price		Appropriateness of valuation approach
	(Baht mn.)	(Baht mn.)	(Baht mn.)	(Baht mn.)	(%)	
Book Value Approach	20,857.86	1,564.34	2,065.00	(500.66)	(24.25)%	Inappropriate
Adjusted Book Value Approach	22,290.35	1,671.78	2,065.00	(393.22)	(19.04)%	Inappropriate
Market Value Approach	N.A.	N.A.	2,065.00	N.A.	N.A.	Unable to evaluate
P/BV Ratio Approach	41,544.51 – 44,697.24	3,115.84 – 3,352.29	2,065.00	1,050.84 – 1,287.29	50.89 – 62.34	Inappropriate
P/E Ratio Approach	N.A.	N.A.	2,065.00	N.A.	N.A.	Unable to evaluate
Discounted Cash Flow Approach	27,509.84 – 32,103.89	2,063.24 – 2,407.79	2,065.00	(1.76) – 342.79	(0.09) – 16.60	Appropriate

From the summary table above, firm value of XPCL (100% of registered capital of XPCL) is in the range of Baht 20,857.86 – 44,697.24 million. Thus, value of 7.5% of firm value of XPCL is in the range of Baht 1,564.34 – 3,352.29 million.

The Book Value Approach reflects the operating result and status of XPCL at any given period without taking into account its real asset value and future profitability, as well as the overall economic and industry outlook. Thus, valuation of XPCL's shares using this approach could not reflect the current financial position of XPCL and might not be appropriate.

The Adjusted Book Value Approach reflects the market value of XPCL's assets better than the Book Value Approach such as an event after the financial statement date which is, in this case, capital increase of XPCL. However, there is no revaluation of XPCL's fixed assets due to Xayaburi Hydropower Project is under construction. In addition, this approach may not reflect future profitability, as well as the overall economic and industry outlook. Thus, valuation of XPCL's shares using this approach could not reflect the current financial position of XPCL and might not be appropriate.

The Market Value Approach is not applied as XPCL is not listed on the SET or any secondary stock market. Thus, the market prices of XPCL's shares could not be calculated.

The Price to Book Value Ratio estimated the value of XPCL's shares using past financial figures as of December 31, 2017 to compare with the past selected industrial average of 12 comparable SET- or mai- listed companies in Energy and Utilities sector with similar power plant business to XPCL. CapAd has not selected this approach for valuation of XPCL's shares due to XPCL is under construction and having no business operation at the present, while the selected listed comparable companies have their successive business operation for a period of time. Therefore, using the ratios of those comparable SET-listed companies as benchmark for valuation of XPCL's share might not be appropriate.

The Price to Earnings Ratio Approach estimated the value of XPCL's share using net profits of XPCL for 12-month period ended December 31, 2017, to compare with the past selected industrial average of the 12 comparable SET- or mai- listed companies in Energy and Utilities sector with similar power plant business to XPCL. However, share value of XPCL by using P/E Ratio could not be calculated because XPCL operated at net loss for the last 12-month period.

The Discounted Cash Flow Approach is the method that considers the future performance of Xayaburi Hydropower Project and cash flow generated capability of XPCL. However, impacts from this transaction were excluded from this financial forecast. Xayaburi Hydropower Project is under construction with current completion of 89.29%<sup>31</sup> (as of January 31, 2017), and expected the UOP in 2018, COD in 2019, and end of concession period in 2050.

The valuation under the Discounted Cash Flow Approach is based on assumptions provided by XPCL, and adjusted by the Independent Financial Advisor based on conservative basis, and under the current economic conditions and circumstances. If there is any change in the business plan, policy, and economic condition that will materially affect the assumptions and variables used herein,

<sup>31</sup> Assessed by Pöyry Energy Limited (Switzerland), an engineering consultant of the government of Lao PDR (GOL-E).

the future operating results of XPCL might not be as projected and the value of the XPCL share price evaluated by this approach may also change accordingly.

CapAd is of the opinion that the most appropriate approach to value XPCL's shares is the Discounted Cash Flow Approach as it reflects future profitability of XPCL under current circumstance. Conclusively, the fair XPCL's firm value is Baht 27,509.84 – 32,103.89 million (100% of XPCL's registered capital), or firm value at 7.50% is Baht 2,063.24 – 2,407.79 million, which is higher (lower) than the acquisition price of 7.50% of XPCL's shares at Baht 2,065.00 million by Baht (1.76) – 342.79 million or (0.09)% – 16.60% higher (lower) than the acquisition price. **Hence, the acquisition price of 7.50% of XPCL's shares at Baht 2,065.00 million is appropriate as it is in range of the fair value of XPCL's shares.**

In addition, the Company is obliged to fund the capital increase of XPCL in proportion to the Company's shareholding in XPCL, which is 7.5% of registered capital of XPCL, until the construction is completed (June 2018 – July 2019), amounting to Baht 399.20 million. Such amount of capital increase has been taken into consideration in CapAd's financial forecast.

**Part 4: Summary of the Independent Financial Advisor's Opinion**

Please see the opinion of the Independent Financial Advisor in **Executive Summary** on Page 4 of this IFA report.

However, shareholders should carefully study all documents and information attached to the notice to this shareholders' meeting, for the sake of their own decision making. Decision whether to approve the asset acquisition and connected transaction or not rests primarily and to the sole discretion of the shareholders.

CapAd, as the Independent Financial Advisor, hereby certifies that it has provided the above opinion cautiously in accordance with professional standard for the benefit of the shareholders.

Sincerely Yours,

The Independent Financial Advisor  
Capital Advantage Co., Ltd.

*-Patchara Netsuwan-*

(Mr. Patchara Netsuwan)  
Managing Director

*-Patchara Netsuwan-*

(Mr. Patchara Netsuwan)  
Supervisor



## **Attachment 1**

### **Business Overview and Operating Performance of Xayaburi Power Company Limited**

#### **1. General Information**

Company Name : Xayaburi Power Company Limited ("XPCL")  
 Main Business : Hydroelectric Power Project  
 Head Office : 215 Lane Xang Avenue, Ban Xieng Yuen, Chantabouly, Vientien, Lao People's Democratic Republic ("Lao PDR")  
 Website : <http://www.xayaburi.com>  
 Registered Capital : Baht 26,861,000,000, divided into 2,686,100,000 ordinary shares, at par value of Baht 10 per share  
 Paid-up Capital : Baht 22,064,828,000, divided into  
     - 1,625,000,000 ordinary shares, fully paid at par value of Baht 10 per share, and  
     - 1,061,000,000 ordinary shares with paid-up value of Baht 5.48 per share (as of December 31, 2017)

#### **2. Nature of Business**

##### **2.1 Background**

Xayaburi Power Company Limited ("XPCL") was established on June 22, 2010 in Lao PDR to operate Xayaburi Hydroelectric Power Project, located on Mekong River, approximately 80 kilometers from Luang Prabang. Xayaburi Hydroelectric Power Project is a Run-of-River hydropower project with total installed capacity of 1,285 MW. Average annual generating energy output is 7,589 GWh.

##### **2.2 Business and Operations**

Xayaburi Hydroelectric Power Project is a hydroelectric power project that obtained a concession from Government of Lao People's Democratic Republic ("GOL"). On October 29, 2010, XPCL entered into 31-year Build-Own-Operate-Transfer (BOOT) concession agreement with GOL, of which all project facilities will be transferred to GOL at the end of concession period. The powerhouse comprises of seven 175 MW Kaplan turbines and one 60 MW Kaplan turbine. Major raw material for electricity generation of hydropower project is the river water flow. The construction of this project was officially commenced on March 15, 2012, and the construction period is approximately 8 years. At the end of January 2018, the construction progress of the project was 89.29% of total construction value. The Project's Commercial Operating Date ("COD") is scheduled in late October 2019. The 1,225 MW of electricity generated from the Project of will be sold to the Electricity Generating Authority of Thailand ("EGAT") under 29-year Power Purchase Agreement from COD and 60 MW will be sold to Electricite du Laos ("EdL") under Power Purchase Agreement from COD until the end of concession period.

#### **3. Board of Directors**

As of November 27, 2017 XPCL had 10 directors as follows:

	<b>Name</b>	<b>Position</b>
1.	Dr. Thanong Bidaya	Chairman of the Board
2.	Mr. Plew Trivisvavet <sup>1/</sup>	Director and Chief Executive Officer
3.	Mr. Thanawat Trivisvavet <sup>1/</sup>	Director and Managing Director
4.	Mr. Van Hoang Dau <sup>2/</sup>	Director and Executive Director
5.	Mr. Toemchai Bunnag <sup>3/</sup>	Director and Executive Director
6.	Mr. Jakgrich Pibulpaioj <sup>4/</sup>	Director
7.	Mr. Supong Chayutsahakij <sup>5/</sup>	Director
8.	Mr. Norkun Sitthiphong <sup>4/</sup>	Director
9.	Mr. Bounchom Ubonpaseuth <sup>6/</sup>	Director
10.	Mr. Thongpheth Douangngeune <sup>6/</sup>	Director

Remark: The authorization of XPCL is (a) Mr. Plew Trivisvavet and Mr. Thanawat Trivisvavet jointly sign and affix the Company's seal, (b) either Mr. Plew Trivisvavet or Mr. Thanawat Trivisvavet and any of other directors, totaling two directors, jointly sign and affix the Company's seal.

1/ The director who is a representative of CKP.

2/ The director who is a representative of PT (Sole) Co., Ltd. ("PT").

- 3/ The director who is a representative of Natee Synergy Co., Ltd. ("NSC"), which is a subsidiary of Global Power Synergy PCL. ("GPSC").
- 4/ The director who is a representative of Electricity Generating PCL. ("EGCO").
- 5/ The director who is a representative of Bangkok Expressway and Metro PCL. ("BEM") (after XPCL's shares were sold to CKP, CKP will nominate a director to replace a director who is currently BEM's representative.)
- 6/ The director who is a representative of EdL.

#### 4. Shareholder Structure

As of December 31, 2017, XPCL had registered capital of Baht 26,861,000,000, divided into 2,686,100,000 ordinary shares at par value of Baht 10.00 per share. Paid-up capital was Baht 22,064,828,000, divided into 1,625,000,000 fully-paid ordinary shares at par value of Baht 10.00 per share and 1,061,000,000 ordinary shares with paid-up value of Baht 5.48 per share. The shareholders list is as follows:

Shareholder name	Number of registered share (share)			Shareholding (%)
	Group 1: Fully Paid-up Shares <sup>1/</sup>	Group 2: Partial Paid-up Shares <sup>2/</sup>	Total	
1. CK Power PCL. <sup>3/</sup>	487,500,000	318,330,000	<b>805,830,000</b>	30.00
2. Natee Synergy Co., Ltd. <sup>4/</sup>	406,250,001	265,275,000	<b>671,525,001</b>	25.00
3. Electricite du Laos	325,000,000	212,220,000	<b>537,220,000</b>	20.00
4. Electricity Generating PCL.	203,125,000	132,637,500	<b>335,762,500</b>	12.50
5. Bangkok Expressway and Metro PCL.	121,874,999	79,582,500	<b>201,457,499</b>	7.50
6. PT Sole Co., Ltd. <sup>5/</sup>	81,250,000	53,055,000	<b>134,305,000</b>	5.00
<b>Total</b>	<b>1,625,000,000</b>	<b>1,061,100,000</b>	<b>2,686,100,000</b>	<b>100.00</b>

Shareholder name	Paid up Capital (Baht)		Total paid-up capital (Baht)
	Fully paid-up (Group 1) <sup>1/</sup>	Partial paid-up (Group 2) <sup>2/</sup>	
1. CK Power PCL. <sup>3/</sup>	4,875,000,000	1,744,448,400	<b>6,619,448,400</b>
2. Natee Synergy Co., Ltd. <sup>4/</sup>	4,062,500,010	1,453,707,000	<b>5,516,207,010</b>
3. Electricite du Laos	3,250,000,000	1,162,965,600	<b>4,412,965,600</b>
4. Electricity Generating PCL.	2,031,250,000	726,853,500	<b>2,758,103,500</b>
5. Bangkok Expressway and Metro PCL.	1,218,749,990	436,112,100	<b>1,654,862,090</b>
6. PT (Sole) Co., Ltd. <sup>5/</sup>	812,250,000	290,741,400	<b>1,103,241,400</b>
<b>Total</b>	<b>16,250,000,000</b>	<b>5,814,828,000</b>	<b>22,064,828,000</b>

Remark:

All ordinary shares of XPCL have the same rights and characteristics. To make it clear for the investor, the IFA divided the ordinary shares of XPCL into Group 1 and Group 2.

- 1/ Group 1 consists of 1,625 million ordinary shares at par value of Baht 10 per share, fully paid-up, representing 73.65% of total paid-up capital as of December 31, 2017.
- 2/ Group 2 consists of 1,061.1 million ordinary shares at par value of Baht 10 per share, paid-up of Baht 5.48 per share, representing 26.35% of total paid-up capital as of December 31, 2017.
- 3/ CKP accepted the transfer of 805,830,000 XPCL shares representing 30% in XPCL from CK on June 9, 2015
- 4/ Natee Synergy Co., Ltd. ("NSC") is a wholly-owned subsidiary of Global Power Synergy PCL. ("GPSC"). On February 27, 2017, PTT Global Chemical PCL. ("PTTGC"), PTT PCL. ("PTT"), Thai Oil Power Co., Ltd. and Thai Oil PCL. are major shareholders of GPSC with 22.73% and 22.58%, 20.79% and 8.91% shareholding, respectively.  
(Source: [www.set.or.th](http://www.set.or.th))

- 5/ PT (Sole) Co., Ltd. ("PT") has Mr. David Dau as a sole shareholder and a company manager. It was incorporated in 2005 under previous name "PT Construction and Irrigation Co., Ltd" with registered capital of Kib 88.2 million. PT's office is located at PT Building, Phonexay Road, Phonexay Village, Xaysettha District, Vientiane Capital, Lao PDR.

Experience and expertise in the Laotian business and investment landscape have made PT a trusted partner for leading companies throughout the region. With development partners, PT has invested in three of Lao PDR's largest hydroelectric projects. PT has also entered into a Production Sharing Contract with Lao PDR to explore and develop hydrocarbon-based energy resources across nine provinces.

(Source: Company Registration Certificate and [www.ptsole.com](http://www.ptsole.com))

("Sole Company Limited" is a legal entity in the form of company limited with only one shareholder, according to Lao PDR's Law on Enterprise.)

#### 5. Summary of Financial Positions and Operating Results

- Statement of Financial Positions as of December 31, 2015, 2016, and 2017

<b>Statement of Financial Positions (Unit: Baht thousand)</b>	<b>Dec. 31, 2015</b>	<b>Dec. 31, 2016</b>	<b>Dec. 31, 2017</b>
<u>Current Assets</u>			
Cash and cash equivalents	779,589	433,298	945,002
Amounts due from related companies	549	-	-
Other current assets	1,762	1,369	3,250
Total current assets	781,901	434,667	948,252
<u>Non-current assets</u>			
Project costs during construction phase	62,195,678	88,866,181	106,407,246
Building and equipment	46,935	38,430	38,718
Deferred loan arrangement fees	746,656	506,456	314,589
Intangible assets	-	-	41,688
Derivatives financial assets	-	-	-
Other non-current assets	674	674	674
Total non-current assets	62,989,944	89,411,742	106,802,916
<b>Total Assets</b>	<b>63,771,844</b>	<b>89,846,409</b>	<b>107,751,167</b>
<u>Current Liabilities</u>			
Project payables			
Related companies	955,530	2,609,005	1,010,553
Other parties	26,474	28,796	23,630
Project cost payables – related companies	12,650,000	-	-
Amounts due to related companies	420	686	111
Other accounts payable	8,055	12,209	29,445
Accrued finance cost	13,689	19,486	34,637
Total current liabilities	13,654,167	2,670,181	1,098,376
<u>Non-current liabilities</u>			
Long-term loans from financial institutions	38,560,818	57,309,354	69,246,282
Long-term loan and accrued interest from related companies	-	14,153,704	16,216,901
Derivatives financial liabilities	762,788	642,005	327,128
Provision for long-term employee benefits	2,356	3,043	2,620
Total non-current liabilities	39,325,962	72,108,106	85,794,931
<b>Total Liabilities</b>	<b>52,980,129</b>	<b>74,778,288</b>	<b>86,893,307</b>
<u>Shareholders' equity</u>			
Issued and paid-up capital	12,174,500	16,504,664	22,064,828
Retained losses	(619,997)	(794,538)	(879,840)
Other components of shareholders' equity	(762,788)	(642,005)	(327,128)
<b>Total Shareholders' Equity</b>	<b>10,791,715</b>	<b>15,068,121</b>	<b>20,857,860</b>
<b>Total Liabilities and Shareholders' Equity</b>	<b>63,771,844</b>	<b>89,846,409</b>	<b>107,751,167</b>

– Comprehensive income statement for the year ended December 31, 2015, 2016, and 2017

<b>Comprehensive Income Statement (Unit: Baht thousand)</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Operating income	-	-	-
Other income	177	136	197
Total income	177	136	197
Administrative expenses	(139,871)	(174,677)	(86,629)
Total operating expenses	(139,871)	(174,677)	(86,629)
<b>Loss before interest expense and income tax</b>	<b>(139,694)</b>	<b>(174,541)</b>	<b>(86,432)</b>
Finance cost	-	-	-
<b>Loss before income tax</b>	<b>(139,694)</b>	<b>(174,541)</b>	<b>(86,432)</b>
Income tax expense	-	-	-
<b>Loss for the year</b>	<b>(139,694)</b>	<b>(174,541)</b>	<b>(86,432)</b>
<b>Other comprehensive income :</b>			
Actuarial gain	-	-	1,130
Unrealized gain (loss) from cash flow hedges	(270,120)	120,783	314,877
<b>Total comprehensive income (loss) for the year</b>	<b>(409,814)</b>	<b>(53,758)</b>	<b>229,575</b>

– Cash flow statement for the year ended December 2015, 2016, and 2017

<b>Cash Flow Statement (Unit: Baht thousand)</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Net cash flows (used in) Operating activities	(128,412)	(157,839)	(82,831)
Net cash flows (used in) Investing activities	(11,109,019)	(35,957,806)	(18,235,936)
Net cash flows from Financing activities	11,351,293	35,769,355	18,830,471
<b>Net increase in cash and cash equivalents</b>	<b>113,861</b>	<b>(346,290)</b>	<b>511,704</b>
<b>Effect of exchange rate changes on cash and cash equivalents</b>	<b>15</b>	<b>(1)</b>	<b>-</b>
<b>Cash and cash equivalents at the beginning of the year</b>	<b>665,714</b>	<b>779,590</b>	<b>433,298</b>
<b>Cash and cash equivalents at the end of the year</b>	<b>779,590</b>	<b>433,298</b>	<b>945,002</b>

Remark: Financial statements of XPCL for the year ended December 31, 2015, 2016 and 2017 were audited by EY Office Ltd. which is an auditor in the approved list of the SEC.

## **Management discussion and analysis of XPCL**

### **Operating results**

Xayaburi Hydroelectric Power Project was under construction so there was no operating income during 2015 - 2017. There was only other income in the form of interest income of Baht 0.18 million in 2015, Baht 0.14 million in 2016, and Baht 0.20 million in 2017 respectively.

Administrative expenses of XPCL in 2015 - 2017 were Baht 140 million, Baht 175 million, and Baht 87 million accordingly. Administrative expenses in 2016 increased by Baht 35 million or 25% growth from 2015 mainly due to an increase in system installation expenses and other expenses. In 2017, administrative expenses declined by Baht 88 million or 50% reduction from 2016 due to the decrease in other expense, salary expense and other provision for employee benefits. Since the project construction is not yet completed, XPCL generated no revenue from sale of electricity but incurred expenses resulting in net loss from operation in the past 3 years amounting to Baht 140 million, Baht 175 million, and Baht 86 million respectively.

However, XPCL utilized financial derivatives as a tool to reduce foreign exchange risk and interest rate risk resulting in unrealized loss from cash flow hedge of Baht 270 million in 2015. As a result, XPCL reported comprehensive loss of Baht 410 million. Meanwhile, in 2016 - 2017 there was gain from cash flow hedge of Baht 121 million and Baht 315 million respectively. As a result, XPCL reported comprehensive loss of Baht 54 million in 2016 and comprehensive profit of Baht 230 million in 2017 (the actual gain or loss under other comprehensive income will be capitalized as a part of the project cost during construction and will be realized as gain or loss in the comprehensive income statement during COD).

### **Financial Status**

In 2016 XPCL's total assets were Baht 89,846 million, increasing by Baht 26,075 million or 41% YoY mainly due to the increase in project cost during construction phase which is in accordance with construction schedule. In 2017, there were total assets of Baht 107,751 million, increasing by Baht 17,905 million or 20% growth from 2016. The major increased assets item was project cost during construction phase, intangible assets, and cash on hand.

XPCL's total liabilities in 2015 - 2017 were Baht 52,980 million, Baht 74,778 million, and Baht 86,893 million or 41% growth in 2016 and 16% growth in 2017 respectively. This was primarily due to an increase in long-term loan from financial institutions and loan from related companies to support the construction of the project as well as the company's operations.

In 2015 - 2017, shareholders' equity increased continuously from Baht 10,792 million in 2015 to Baht 15,068 million in 2016 and Baht 20,858 million in 2017 mainly due to the additional payment of paid-up capital made by the existing shareholders in proportion to the loan drawdown to support project construction progress and operations of the company.

### **Liquidity**

XPCL's cash and cash equivalents as of December 31, 2015 was Baht 780 million. Cash was mainly provided by financing activities of Baht 11,351 million as a result of the additional payment of paid-up capital and the drawdown of long-term loan from financial institutions. Cash was utilized in operating activities and investing activities of Baht 128 million and Baht 11,109 million respectively. The utilization of cash in investing activities was mainly to pay for construction cost, office renovation cost and purchase of equipment.

As of December 31, 2016, XPCL had Baht 433 million cash and cash equivalents, decreasing by Baht 347 million from 2015. Cash was mainly derived from financing activities of Baht 35,769 million from the additional payment of paid-up capital and the drawdown of long-term loan from financial institutions. Cash was mainly used in investing and operating activities of Baht 158 million and Baht 35,958 million respectively to pay for construction cost of the project.

As of December 31, 2017, XPCL had cash and cash equivalent of Baht 945 million. XPCL derived cash from financing activities of Baht 18,830 million from the drawdown of long-term loan from financial institutions, drawdown loan from related companies and the increase in paid-up capital. Cash was used in investing activities for construction of the project and purchase of equipment of Baht 18,236 million as well as having net cash used in operating activities of Baht 83 million.

## 6. Industry Outlook

### Electricity consumption in Thailand

Electricity consumption in 2017 was 185,124 million units increased by 1.4% from previous year as a result of economic expansion especially in the industrial and business sector. Peak demand or System Peak in 2017 of EGAT was 28,578 MW, decreased by 3.5% comparing to 2016. The decrease in Peak demand is in accordance with the decrease in temperature which is a result of monsoon causing the rain to fall faster than the normal season in combination with the change in people's behavior to use electricity efficiently in order to follow the government campaign. For the year 2018, Energy Policy and Planning Office forecasts that electricity consumption would be at the level of 192,923 million units, increasing by 4.1% in corresponding to Thai and global economic recovery.

*Source: Energy situation in 2017 by Energy Policy and Planning Office, Ministry of Energy as of February 21, 2018 and energy situation in 2017 and trend in 2018 by Energy Forecast and Information Technology Center as of December 19, 2017.*

### Competition of Power Business in Lao PDR

Please see CKP's 2017 Annual Report (Attachment 2) enclosed with this invitation to shareholders' meeting.

## 7. Summary of Significant Agreements

### **Credit Facilities Agreement of Xayaburi Hydroelectric Power Project with Thai commercial banks dated October 31, 2011 including the first amendment dated October 27, 2014 and the second amendment dated June 9, 2015**

Counter parties	Borrower: Xayaburi Power Co., Ltd. ("XPCL") Lenders: 7 Thai commercial banks
Loan type/amount	Thai Baht loan and US Dollar loan in aggregate of Baht 86,463 million and Guarantee credit line of 49 million US dollar or approximately Baht 1,666 million (Exchange rate Baht 34 per US Dollar)
Loan objective	To finance the project development cost and guarantee the construction progress in accordance with the timeline as specified in the agreement
Tenor of the Loan	Approximately 20 years from the date of agreement
Interest rate/fee	For Thai Baht loan, the reference rate is based on average MLR of 4 banks which are Bangkok Bank PCL., Kasikorn Bank PCL., Siam Commercial Bank PCL., and Krung Thai Bank PCL. For US Dollar Loan, the reference rate is based on LIBOR
Loan repayment	The loan repayment is made on semi-annual basis as specified in Credit Facilities Agreement
Major terms and conditions	<ul style="list-style-type: none"> <li>- XPCL's Debt to Equity Ratio shall not exceed 3:1</li> <li>- Debt Service Coverage Ratio shall not less than 1.1:1 starting from the first year of debt repayment</li> </ul>
Cost Overrun Support ("COS")	CK Power PCL. ("CKP") <sup>1/</sup> , Global Power Synergy Co., Ltd. ("GPSC") <sup>2/</sup> , and Electricity Generating PCL. ("EGCO") shall be jointly responsible for total cost overrun of not exceeding Baht 15,200 million

Remark:

- 1/ Pursuant to Accession Agreement dated June 9, 2015, CKP purchased 805,830,000 shares of XPCL from CK and CKP accepted all the rights, responsibilities and obligations of CK as one of the Cash Support Sponsors to XPCL. However, CK remains as one of the Sponsor in this project.
- 2 Pursuant to the Accession Agreement dated August 27, 2014, PTT International Co., Ltd. ("PTTI"), a sponsor, was renamed to PT Energy Resources Co., Ltd. ("PTTER") and transferred 2,822,497 of XPCL's shares to Global Power Synergy PCL. ("GPSC") on December 25, 2013. As a result, GPSC became XPCL's sponsor instead of PTTER.

### Equity Contribution Agreement dated October 31, 2011 including Amended and Restated Equity Contribution Agreement dated June 9, 2015

Counter parties	Borrower: Xayaburi Power Co., Ltd. ("XPCL") Shareholders: CK Power PCL. ("CKP") <sup>1/</sup> Natee Synergy Co., Ltd. ("NSC") Electricite du Laos ("EdL") <sup>2/</sup> Electricity Generating PCL. ("EGCO") Bangkok Expressway and Metro PCL. ("BEM") <sup>3/</sup> PT Sole Co., Ltd. ("PT") <sup>4/</sup>
Base Equity Commitment	Shareholders shall make equity contribution in proportion to its shareholding percentage <sup>5/</sup> in aggregate of Baht 26,861 million to maintain Debt to Equity Ratio at 3:1
Standby Equity Commitment	Shareholders shall make equity contribution in proportion to the shareholding percentage in aggregate of Baht 1,959 million in the event that the actual revenue from sale of electricity during Unit Operation Period does not meet the forecast to maintain Debt to Equity Ratio of 3:1.
Principal obligor	CKP <sup>6/</sup> undertakes to provide equity contribution in the event that EdL and/or PT are unable to perform its obligations to provide equity contributions to XPCL.

Remark:

- 1/ Pursuant to Accession Agreement dated June 9, 2015, CKP purchased 805,830,000 shares of XPCL from CK so CKP became XPCL's shareholder instead of CK
- 2/ Electricite de Laos (EdL) become XPCL's shareholder by purchasing 325,000,000 shares of XPCL from CK pursuant to Accession Agreement No. 044/EdL dated January 21, 2013
- 3/ Bangkok Express Way PCL. ("BECL"), existing shareholder, merged with Bangkok Metro PCL. ("BMCL") in compliance with the Public Company Act on December 30, 2015 and was renamed to Bangkok Express way and Metro PCL. ("BEM").
- 4/ P.T. Construction Co., Ltd. ("PTCC") was renamed to PT Sole Co., Ltd. ("PT")
- 5/ Definition of shareholding percentage pursuant to the Second Amendment Agreement dated June 9, 2015 is as follow:

Shareholding percentage <b>before</b> transfer date of CK			Shareholding percentage <b>after</b> transfer date of CK		
a.	CK	30.00%	a.	CK	0.00%
b.	NSC	25.00%	b.	CKP	30.00%
c.	EdL	20.00%	c.	NSC	25.00%
d.	EGCO	12.50%	d.	EdL	20.00%
e.	BEM	7.50%	e.	EGCO	12.50%
f.	PT	5.00%	f.	BEM	7.50%
			g.	PT	5.00%

- 6/ Pursuant to the Amended and Restated Equity Contribution Agreement dated June 9, 2015, Principal Obligor was changed from CK to CKP

## **Attachment 2**

### **Business Overview and Operating Performance Bangkok Expressway and Metro Public Company Limited**

#### **1. General information**

Company name : Bangkok Expressway and Metro Public Company Limited ("BEM")  
Business type : Provision of expressway and metro services  
Head Office : 587 Viriyatavorn Building, Suthisarn Road, Din Daeng, Bangkok 10400  
Telephone : 0 2641 4611, 0 2354 2000  
Fax : 0 2641 4610, 0 2354 2040  
Website : <http://www.bemplc.co.th>  
Registered capital : Baht 15,285,000,000, divided into 15,285,000,000 ordinary shares with par value of Baht 1 per share  
Paid-up capital : Baht 15,285,000 ordinary shares with par value of Baht 1 per share

#### **2. Business Overview**

##### **2.1 Background**

Bangkok Expressway and Metro Public Company Limited ("BEM") was incorporated from the amalgamation, pursuant to the Public Limited Company Act, between Bangkok Expressway Public Company Limited ("BECL") and Bangkok Metro Public Company Limited ("BMCL") on December 30, 2015, to operate construction and provision of expressway and metro services as well as commercial development in relation to expressway and metro business. Such business was transferred from BECL and BMCL by operation of law.

##### **2.2 Nature of Business**

BEM's businesses comprise of the provision of the expressway and metro services, including commercial development relating to the expressway and metro systems, which will lay a foundation for business expansion through future extension of the network routes, both in the expressway and metro systems, thereby enabling BEM to be a leading mass rapid transit and transportation service operator in Thailand and in the region. In addition, BEM may extend its businesses to other fast-growing businesses with good returns, such as, other infrastructure projects, commercial development or real estate development, both at home and abroad, etc.

###### **1) Expressway Business**

BEM and one of its subsidiaries have been granted concessions for construction and operation of a total of four expressways, namely,

1.1) the Si Rat Expressway (Second Stage Expressway) under the Second Stage Expressway Agreement with the Expressway Authority of Thailand ("EXAT") for a concession period of 30 years from March 1, 1990

1.2) the Si Rat Expressway, Sector D, under the Agreement for the Extension of the Second Stage Expressway System (Sector D) with EXAT for a period of 30 years from April 22, 1997

1.3) the Si Rat - Outer Ring Road Expressway under the Concession Agreement for Investment, Design, Construction, Operation, Service and Maintenance of the Si Rat - Outer Ring Road Expressway Project, with EXAT for a concession period of 30 years from December 15, 2012

1.4) the Udon Ratthaya Expressway (Bang Pa-in – Pak Kret Expressway), operated by a subsidiary, namely, Northern Bangkok Expressway Company Limited ("NECL") under the Bang Pa-in-Pak Kret Expressway Agreement with EXAT for a period of 30 years from September 27, 1996.

###### **2) Rail Business**

BEM has been granted concessions for two mass rapid transit rail system projects from the Mass Rapid Transit Authority of Thailand ("MRTA"), namely,

2.1) MRT Blue Line Project which comprises of MRT Chaloem Ratchamongkhon Line Project (Hua Lamphong Station - Bang Sue Station) and MRT Blue Line Extension (Hua Lamphong Station - Lak Song Station) whereby BEM is entitled to fare box revenue and undertake activities and commercial development, including advertising, leasing space and telecommunications services in the

metro stations and in the trains for a period of 30 years from the date MRT Blue Line's the whole route started commercial operation.

2.2) MRT Chalong Ratchadham Line Project, Bang Yai - Rat Burana, Bang Yai - Bang Sue Section (Khleng Bang Phai Station - Tao Poon Station) (MRT Purple Line Project), Contract 4: Concession for Supply of M&E Systems and O&M Services, whereby MRTA invests in all civil works and BEM invests in the M&E Systems and the rolling stocks, as well as provides the operation and maintenance services in accordance with the specified service standards. MRTA is entitled to all fare box revenue and commercial development revenue from the utilization of the civil infrastructure and the railway systems and MRTA shall make a gradual repayment of the M&E Equipment to the Company on a monthly basis for 10 years, and shall engage BEM for the O&M Services throughout the concession period of 30 years from September 4, 2013.

### 3) Commercial Development Business

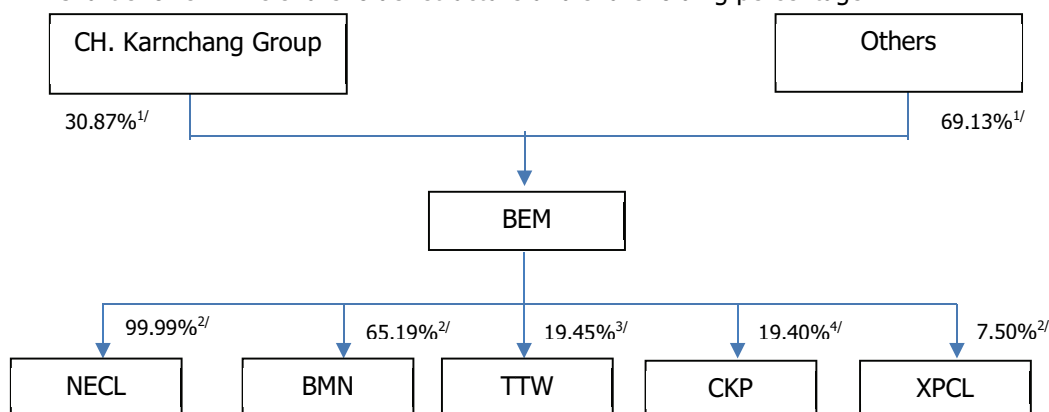
BEM and one of its subsidiaries, namely, Bangkok Metro Networks Limited ("BMN"), operates the commercial development business of the MRT Blue Line Project for (a) procurement and/or production of advertising media of various forms in the trains and metro stations; (b) lease of retail spaces in the MRT Blue Line stations and spaces in the basement level of the Lat Phrao park and ride facility; and (c) provision of service and maintenance of telecommunications system equipment inside the metro stations. In addition, as for the expressways, BEM and NECL allowed private entities and individuals to use spaces for commercial operation for installation of Intelligent Traffic Signs and various advertising boards, including retail spaces around toll plazas, and other business activities, such as, the use of the expressway areas for installation of 3G signal boosters, etc.

### 4) Investment in Other Companies

BEM invests in companies operating public utility businesses, as follows: (a) CK Power Public Company Limited ("CKP") operates its core business by holding shares in other companies (Holding Company) operating the business of production and distribution of energy of various types; (b) TTW Public Company Limited ("TTW") operates the business of production and distribution of tap water to the Provincial Waterworks Authority and invests in companies which operate the business of other public utilities; and (c) Xayaburi Power Company Limited ("XPCL") carries out construction and operation of the Xayaburi Hydroelectric Power Project.

## 2.3 Group Structure

Chart shows BEM's shareholder structure and shareholding percentage



Remark:

- 1/ CH. Karnchang Group comprises of CH. Karnchang PCL. and CH. Karnchang-Tokyu Construction Co., Ltd. The shareholding structure in BEM as of February 21, 2018 (information on book closing (XO) from Thailand Securities Depository Co., Ltd.
- 2/ As of December 31, 2017
- 3/ The shareholding in TTW as of August 30, 2017 (information from the book closing (XD) from [www.set.or.th](http://www.set.or.th))
- 4/ The shareholding in CKP as of February 22, 2018 (information on book closing (XO) from Thailand Securities Depository Co., Ltd.)

## 3. Board of Directors

List of 16 directors of BEM as of February 12, 2018 are as follows:



Name	Position
1. Dr. Virabongsa Ramangkura	Chairman of the Board of Directors and Independent Director
2. Mr. Plew Trivisvavet	Chairman of the Executive Board/Deputy Chairman of the Board of Directors
3. Mr. Sombat Kitjalaksana	Managing Director/Director
4. Mrs. Payao Marittanaporn	Managing Director/Director
5. Mr. Supong Chayusahakij	Director
6. M.L. Prasobchai Kasemsant	Director
7. Mr. Phongsarit Tantisuvanitchkul	Director
8. Mr. Werapong Suppasedsak	Director
9. Mr. Panit Dunnvatanachit	Director
10. Mr. Yuttana Yimgarund	Director
11. Mr. Prasit Dachsiri	Director
12. Mr. Vitoon Tejatussanasoontorn	Chairman of the Audit Committee/Independent Director
13. General Sampao Choosri	Audit Committee/Independent Director
14. General Chetta Thanajaro	Audit Committee/Independent Director
15. Mr. Annop Tanlamai	Audit Committee/Independent Director
16. Mrs. Vallapa Assakul	Independent Director

Remark: The authorized signatory are Mr. Plew Trivisvavet, Mr. Supong Chayusahakij, Mr. Phongsarit Tantisuvanitchkul, Mr. Sombat Kitjalaksana and Mrs. Payao Marittanaporn, 2 of 5 directors co-sign and affix the company's seal.

Source: Form 56-1 for the year 2017 of BEM

#### 4. Shareholder Structure

As of February 21, 2018, BEM had registered capital of Baht 15,285,000,000. The issued and paid-up capital was Baht 15,285,000,000, divided into 15,285,000,000 ordinary shares at par value of Baht 1 per share. Top 10 major shareholders are as follows:

Name	Number of shares	% shareholding
1. CH. Karnchang Group	4,718,781,781	30.87
1.1 CH. Karnchang PCL. <sup>1/</sup>	4,582,121,829	29.98
1.2 CH. Karnchang-Tokyu Construction Co., Ltd. <sup>2/</sup>	136,659,952	0.89
2. Mass Rapid Transit Authority of Thailand	1,256,259,584	8.22
3. Krung Thai Bank PCL.	1,047,025,175	6.85
4. Thai NVDR Co., Ltd.	938,710,798	6.14
5. Mr. Wichai Wachiraphong	349,993,657	2.29
6. Bangkok Bank PCL.	323,453,209	2.12
7. State Street Europe Ltd. <sup>3/</sup>	297,102,262	1.94
8. Social Security Office	287,289,500	1.88
9. Mr. Min Tiewnwon	200,000,000	1.31
10. UOB Kay Hian (Hong Kong) Ltd. – Client Account	186,774,600	1.22
<b>Total Top 10 Major shareholders of BEM</b>	<b>9,605,390,566</b>	<b>62.84</b>
Trivisvavet Group	34,079,300	0.22
Other shareholders	5,645,530,134	36.94
<b>Total</b>	<b>15,285,000,000</b>	<b>100.00</b>

Source: Shareholder list from book closing (XO) as of February 21, 2018 from Thai Securities Depository (Thailand) Co., Ltd.

Remark:

1/ Please see list of directors and shareholders of CH. Karnchang PCL. in [www.set.or.th](http://www.set.or.th)

2/ Directors and shareholders of CH. Karnchang-Tokyu Construction Co., Ltd. are as follows:

**Directors:** Mr. Plew Trivisvavet, Ms. Kajornvit Sae-Jia, Ms. Supamas Trivisvavet, Mr. Phongsarit Tantisuvanitchkul, Mr. Narong Sangsuriya, Mr. Prasert Marittanaporn, Mr. Hideo Miyakawa, Mr. Tetsuneo Eshika, Mr. Kunito Sakai, Mr. Motoyuki Takagi, and Mr. Hideo Nitta

**Shareholders:**

Name	Number of shares	% shareholding
1. CH. Karnchang PCL.	549,996	54.9996
2. Tokyu Construction Co., Ltd.	450,000	45.0000
3. Mr. Plew Trivisvavet	2	0.0002
4. Mr. Thep Trivisvavet	1	0.0001

Name	Number of shares	% shareholding
5. Mr. Prasert Trivisvavet	1	0.0001
Total	1,000,000	100.0000

- 3/ The company registered abroad and trade securities in Stock Exchange of Thailand without disclosing that they holds securities for themselves or for other companies. BEM doesn't have power to force such shareholders disclose such information

- 4/ Name list in Trivisvavet Group was based on shareholder list in annual report and Form 56-1 for the year 2016 of CK.

Name	Number of shares	% shareholding
1. Mr. Plew Trivisvavet	21,706,878	0.1420
2. Mrs. Saikasem Trivisvavet	2,402,527	0.0157
3. Mr. Puvanet Trivisvavet	767,024	0.0050
4. Ms. Sunan Trivisvavet	649,800	0.0043
5. Ms. Sawanya Trivisvavet	605,046	0.0040
6. Mr. Sittidej Trivisvavet	500,000	0.0033
7. Mrs. Korakot Trivisvavet	390,281	0.0026
8. Mr. Nattavut Trivisvavet	274,391	0.0018
9. Mr. Kamthorn Trivisvavet	150,000	0.0010
10. Ms. Supamas Trivisvavet	144,272	0.0009
11. Mr. Thanawat Trivisvavet	84,101	0.0006
12. Mahasiri Siam Co., Ltd. <sup>5/</sup>	4,327,689	0.0283
13. CH. Karnchang Holding Co., Ltd. <sup>6/</sup>	2,077,291	0.0136
14. CK Office Tower Co., Ltd.	-	-
15. Bang Pa-In Land Co., Ltd.	-	-
16. Mr. Prasert Trivisvavet	-	-
รวม	34,079,300	0.2230

- 5/ Directors and shareholder list of Mahasiri Siam Co., Ltd. are as follows:

Directors: Mr. Prasert Marittanaporn, Mr. Thep Trivisvavet, Mr. Yim Trivisvavet, Mr. Plew Trivisvavet, Mrs. Ornanong Trivisvavet, and Ms. Supamas Trivisvavet

Shareholders:

Name	Number of shares	% shareholding
1. Mr. Thavorn Trivisvavet	2,411,473	26.80
2. Mr. Prasert Trivisvavet	2,281,895	25.35
3. Mr. Plew Trivisvavet	1,993,633	22.15
4. Mr. Thep Trivisvavet	937,837	10.42
5. Mr. Kamthorn Trivisvavet	753,948	8.38
6. Ms. Chonthida Suwanwisawa	621,213	6.90
7. Mrs. Saikasem Trivisvavet	1	0.00
Total	9,000,000	100.00

- 6/ Directors and shareholder list of CH. Karnchang Holding Co., Ltd. are as follows:

Directors: Mr. Plew Trivisvavet, Mr. Prasert Marittanaporn, Mr. Thep Trivisvavet, Mr. Yim Trivisvavet, Mrs. Ornanong Trivisvavet, and Ms. Supamas Trivisvavet

Shareholders:

Name	Number of shares	% shareholding
1. Mahasiri Siam Co., Ltd.	2,100,000	25.00
2. Cholavet Civil Co., Ltd.	1,050,000	12.50
3. Thavornwong Co., Ltd.	1,050,000	12.50
4. Nampol Construction Co., Ltd.	1,050,000	12.50
5. Vetprasert Co., Ltd.	1,050,000	12.50
6. Ekamthorn Co., Ltd.	1,050,000	12.50
Total	8,400,000	100.00

Source of the information of directors and shareholder list in table remark 2/, 5/, 6/ was derived from www.corpus.bol.co.th

## 5. Financial Status and Operating Performance

- Statement of financial position for the year ended December 31, 2015, 2016, and 2017 is as follows:

<b>Statement of financial position</b> (unit: Baht thousand)	<b>Dec. 31, 2015</b>	<b>Dec. 31, 2016</b>	<b>Dec. 31, 2017</b>
<b>Current assets</b>			
Cash and cash equivalents	4,483,374.82	777,001.14	2,627,062.72
Current investments	497,356.70	5,941,349.95	1,449,457.22
Trade and other receivables	84,628.36	1,614,563.46	426,286.03
Current portion of receivable from sale of investment	564,014.86	756,834.38	-
Current portion of receivable under concession agreement	-	-	1,649,683.27
Other current assets	239,884.44	129,541.37	127,581.20
<b>Total current assets</b>	<b>5,869,259.19</b>	<b>9,219,290.30</b>	<b>6,280,070.45</b>
<b>Non-current assets</b>			
Receivable from sales of investment, net of current portion	756,834.38	-	-
Receivable under concession agreement, net of current portion	-	-	12,510,098.16
Investments in associates	9,836,588.56	9,667,680.30	9,592,230.80
Other long-term investment	913,087.49	1,237,849.79	1,654,862.09
Investment properties	120,357.49	120,357.49	120,357.49
Building and equipment	154,365.57	340,732.84	361,168.43
Project costs under construction	19,600,400.99	-	-
Rights to operate completed expressway sectors	20,327,463.23	41,551,825.21	38,448,873.56
Rights to use sites for expressway construction	1,320,193.68	1,020,623.70	719,073.06
Intangible asset under concession agreement of the MRTA Initial	16,987,640.14	17,048,090.15	25,954,096.37
Advance payment under expressway construction contract	398,250	-	-
Project cost of the MRT Chalong Ratchadham Line	271,396.97	627,255.95	666,742.63
Deferred of project remuneration	942,249.28	1,614,607.95	2,487,433.24
Other Intangible assets	36,236.80	68,228.57	75,257.87
Deferred tax assets	474,860.50	201,887.94	4,997.67
Other non-current assets	85,418.86	67,132.88	44,103.68
<b>Total non-current assets</b>	<b>72,225,343.95</b>	<b>73,566,272.78</b>	<b>92,639,295.05</b>
<b>Total assets</b>	<b>78,094,603.13</b>	<b>82,785,563.08</b>	<b>98,919,365.50</b>
<b>Current liabilities</b>			
Short-term loans from financial institutions	22,410,000	4,715,775.25	3,629,184.74
Trade and other payables	2,579,553.65	898,075.15	2,107,884.87
Current portion of long-term loans from financial institutions	118,500	2,066,750.00	3,808,760.07
Unearned fare box revenue	89,973.90	111,971.38	138,261.71
Deposits on stored value ticket	34,738.93	43,313.99	54,367.55
Income tax payable	306,735.93	31,444.02	62,132.37
Current portion of provision for compensation for site acquisition	1,500,000	1,500,000	1,600,000
Other current liabilities			
Retention guarantees	161,068.58	70,983.14	19,917.41
Others	114,148.19	119,444.34	162,315.93
<b>Total current liabilities</b>	<b>27,314,719.17</b>	<b>9,557,757.28</b>	<b>11,582,824.64</b>
<b>Non-current liabilities</b>			
Long-term loans from financial institutions, net of current portion	17,329,066.57	16,952,402.52	25,801,112.36
Debentures, net of current portion	-	23,167,912.86	28,170,623.09
Derivative financial liabilities	-	18,608.41	52,954.37
Provision for compensation for site acquisition cost, net of current portion	4,066,671.70	2,817,151.70	1,411,401.69
Provision for long-term employee benefits	237,842.10	471,043.88	483,787.04
Deferred tax liability	-	-	217,152.22
Other non-current liabilities	16,269.43	17,982.16	20,211.88
<b>Total non-current liabilities</b>	<b>21,649,849.81</b>	<b>43,445,101.53</b>	<b>56,157,242.68</b>

<b>Statement of financial position</b> (unit: Baht thousand)	<b>Dec. 31, 2015</b>	<b>Dec. 31, 2016</b>	<b>Dec. 31, 2017</b>
Total liabilities	48,964,568.98	53,002,858.80	67,740,067.33
Shareholders' equity			
Share capital (par value of Baht 1 per share)			
Registered capital			
15,285,000,000 ordinary shares	15,285,000,000	15,285,000,000	15,285,000,000
Issued and paid-up capital			
15,285,000,000 ordinary shares	15,285,000,000	15,285,000,000	15,285,000,000
Premium on ordinary shares	5,816,938.08	5,816,938.08	5,816,938.08
Retained earnings (losses)			
Appropriated – statutory reserve	800,490	928,690	1,077,490
Unappropriated	7,254,261.05	7,763,596.45	8,948,481.34
Other components of shareholders' equity	(113,097.16)	(104,972.97)	(59,724.46)
Equity attributable to shareholders of the company	29,043,591.97	29,689,251.57	31,068,184.96
Non-controlling interests of the subsidiaries	86,442.18	93,452.71	111,113.21
Total shareholders' equity	29,130,034.15	29,782,704.28	31,179,298.17
<b>Total liabilities and shareholders' equity</b>	<b>78,094,603.13</b>	<b>82,785,563.08</b>	<b>98,919,365.50</b>

- Statement of comprehensive income for the year ended December 31, 2015, 2016, and 2017

<b>Statement of comprehensive income</b> (Unit: Baht thousand)	<b>2015</b>	<b>2016</b>	<b>2017</b>
Revenues from expressway business	8,814,588.00	9,300,724.13	9,956,687.74
Revenue from rail business	2,373,562.62	3,230,064.08	4,520,903.06
Revenue from commercial development business	549,431.37	573,349.01	675,836.16
Other income			
Interest income	57,843.95	68,199.69	175,173.10
Gain from sale of investment before amalgamation	1,235,526.38	-	-
Gain from sale of investment	62,222.73	-	-
Others	11,636.37	61,057.71	64,631.07
Total revenues	13,014,811.43	13,323,394.62	15,393,231.14
Cost of expressway business	1,239,604.475	1,511,964.60	1,735,419.84
Cost of rail business	1,444,542.77	2,371,420.99	3,352,428.08
Cost of commercial development business	210,151.43	199,943.91	177,151.16
Amortization of rights to operate completed expressway sectors	3,422,566.02	3,470,883.81	3,694,893.20
Amortization of intangible asset under concession agreement of the MRTA Initial System Project – Chaloem Ratchamongkhon Line and remuneration fee to the grantor	777,584.37	440,076.42	246,289.96
Selling expenses	79,252.58	92,540.32	95,250.35
Administrative expenses	1,035,883.87	892,093.62	1,048,996.44
Total expenses	8,209,585.53	8,978,923.69	10,350,429.04
<b>Profit before share of profit from investments in associates, finance cost and income tax expenses</b>	<b>4,895,225.90</b>	<b>4,254,470.93</b>	<b>5,042,802.09</b>
Share of profit from investments in associates	461,212.79	347,349.47	405,916.31
<b>Profit before finance cost and income tax expenses</b>	<b>5,356,438.69</b>	<b>4,601,820.39</b>	<b>5,448,718.41</b>
Finance cost	(1,934,186.13)	(1,426,027.69)	(1,610,765.28)
<b>Profit before income tax expenses</b>	<b>3,422,252.56</b>	<b>3,175,792.70</b>	<b>3,837,953.13</b>
Income tax expenses	(721,234.60)	(562,927.70)	(695,602.11)
<b>Profit for the period</b>	<b>2,701,017.96</b>	<b>2,612,865.00</b>	<b>3,142,351.02</b>
Profit attributable to			
Equity holders of the company	2,649,736.34	2,605,854.47	3,123,129.32
Non-controlling interests of the subsidiaries	51,281.62	7,010.53	19,221.69
<b>Earnings per share (Baht per share)</b>	<b>0.173</b>	<b>0.170</b>	<b>0.20</b>

## - Cash flow statement for the year ended December 31, 2015, 2016, and 2017

<b>Cash flow statement (Unit: Baht thousand)</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Net cash flows from (used in) operating activities	4,161,535.89	3,845,326.15	7,149,509.22
Net cash flows from (used in) investing activities	(4,732,111.68)	(11,663,245.54)	(2,798,439.52)
Net cash flows from (used in) financing activities	2,676,902.90	4,111,545.71	(2,501,008.12)
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>2,106,327.11</b>	<b>(3,706,373.68)</b>	<b>1,850,061.58</b>
Beginning cash	2,377,047.71	4,483,374.83	777,001.14
Ending cash	4,483,374.82	777,001.14	2,627,062.72

Source: BEM and its subsidiaries' financial statements for the year ended December 31, 2015, 2016, and 2017 were audited by EY Office Ltd., a certified auditor in the approved list of the SEC.

**Management discussion and analysis of BEM and its subsidiaries**Operating performance

In 2016, BEM and its subsidiaries had toll revenue of Baht 9,301 million, representing 70% of total revenue, increasing from the previous year by Baht 486 million, or 5.5% due to an increase from the traffic volume in all routes. The traffic volume of the First Stage Expressway (FES) and the Second Stage Expressway (SES) had increased from the previous year on the average of 15,000 trips/day or 1.4%. The Si Rat-Outer Ring Road Expressway (SOE) had traffic volume on the average since an opening on August 22, 2016 to December 31, 2016 at 39,400 trips/day. As a result, overall toll revenue from FES and SES included SOE increased by Baht 371 million or 4.9% when compared to the previous year. For the Bang Pa-in - Pak Kret Expressway, the traffic volume increased from the previous year on the average of 7,000 trips/day or 9.4% from previous year due to the expansion of suburban area, resulting in an increase in toll revenue of Baht 115 million or 9.5%, when compared to the previous year. BEM also had fare box revenue of Baht 3,230 million, representing 24% of total revenue, which increased from the previous year by Baht 856 million, or 36.1%. Fare box revenue had increased as a result of the rise of the average ridership of the MRT Blue Line at 13,400 trips/day or 5.1% and from the increasing of service revenue from the MRT Purple Line (O&M contract) which operated on August 6, 2016. Furthermore, BEM had commercial development revenue of Baht 573 million, increasing by Baht 24 million, or 4.4% growth from previous year as a result of commercial development related to rail business.

In 2016, BEM had other income of Baht 129 million comparing to other revenue of Baht 1,367 million in 2015. The reason for significant decline in other revenue was due to no gain from investment before amalgamation like previous year.

In the year 2016, BEM had the net profit attributable to equity holders of BEM amounted to Baht 2,606 million, increasing by Baht 925 million, or 55%, when compared with the net profit from normal operation of the year 2015 which excluded extraordinary transaction from a gain on sales of investment in Bangkok Metro PCL. before an amalgamation, net of tax, in the amount of Baht 969 million. BEM's revenue from main business increased by Baht 1,366 million. The toll revenue from Expressway business increased by Baht 486 million, or 5.5% YoY due to an increase in the traffic volume in all routes and the opening of the Si Rat-Outer Ring Road Expressway on August 22, 2016. In addition, the revenue from Rail business increased by Baht 856 million, or 36.1% growth YoY resulted from the increasing of passenger volume and the revenue of O&M service of the MRT Purple Line which operated on August 6, 2016. Cost of service increased in relevant to the opening of the projects.

Regarding the financial cost, interest expenses on construction loans which were formerly recorded as cost of construction were recorded as interest expense in the income statement after the opening of the SOE project, resulting in an increase in interest expenses. However, due to debt restructuring, BEM incurred lower financial cost by Baht 488 million, or 25.2%. When compared net profit of the year 2016 of Baht 2,606 million with net profit of the year 2015 of Baht 2,650 million which included extraordinary transaction from gain on sales of investment, net of tax, in the amount of Baht 969 million, net profit decreased from the previous year by Baht 44 million or 1.7% YoY due to there is no transaction in 2016.

In 2017, BEM had revenue from Expressway business of Baht 9,957 million, increasing by Baht 656 million or 7.1% YoY. The increase in toll revenue of Baht 612 million was from SOE operated in August 2016 which BEM had right to receive toll revenue. SOE average traffic volume in

2017 was 50,000 trips/day, increased by 62.6% comparing to the first month of its operation. For the First Stage Expressway (FES) and the Second Stage Expressway (SES), toll revenue was similar to the previous year. For Bang Pa-In Pak Kret Expressway, toll revenue increased from last year by Baht 60 million or 4.5% YoY due to the expansion of suburban area, resulting in the increase in traffic volume. BEM had revenue from Rail business of Baht 4,521 Million, increasing from the previous year by Baht 1,291 million or 40%. The increase in revenue amounted to Baht 1,095 million was from the service revenue of the MRT Purple Line (O&M contract) which operated in August 2016. Fare box revenue of the MRT Blue Line increased from the previous year by Baht 196 million or 7.9% from the connection between the MRT Purple Line Project and the MRT Blue Line Project in August 2017 which makes convenience and time saving for passengers resulting in the increase in ridership of both projects. The average ridership of the MRT Blue Line Project in September 2017 (1 month after the connection) was at 319,800 trips/day representing an increase of 13.4% when compared to the average ridership in July 2017 (1 month before the connection). Moreover, BEM had revenue from commercial development of Baht 675 million, increased by Baht 102 million or 17.8% YoY mainly from the commercial development revenue related to rail business especially from the advertising and retails which the subsidiary has improved the advertising media and retail shops in order to meet with the new customer target and lifestyle of the new generation.

In 2017, BEM had net profit attributable to equity holders of the company in the amount of Baht 3,123 million, increased from the previous year by Baht 517 million or 19.8% mainly from the Si Rat-Outer Ring Road Expressway (SOE) and the O&M service of the MRT Purple Line, both operated in August 2016 by which BEM realized those revenues only for 5 months, while fully realized in 2017. A portion of realized revenue was interest income at the amount of Baht 118 million which was received from the MRTA under the concession agreement of the MRT Chalong Ratchadham Line Project where the income is equal to the interest expense from the long term loan used in investment in the MRT Chalong Ratchadham Line Project which the MRTA is fully responsible for both loan repayment and interest expense in accordance to the concession agreement. Cost of service amounted to Baht 9,206 million, increased from the previous year by Baht 1,212 million or 15.2% according to the opening of the projects.

Financial cost in 2017 was at Baht 1,611 million, increased from the previous year by Baht 185 million or 13%. Interest expense of Baht 118 Million was interest expense on long-term loan used for investment in the MRT Chalong Ratchadham Line Project, of which the MRTA is fully responsible according to the concession agreement (same amount as interest income mentioned above). The other increase in finance cost amounted to Baht 67 million was from the increase in interest expense from SOE construction loans, which were all recorded as interest expenses in the income statement.

#### Financial position

As of December 31, 2016, BEM and its subsidiaries had total assets of Baht 82,786 million, increased by Baht 4,691 million when compared with total assets as at December 31, 2015. Such increase was due mainly to the increase in project cost of the Si Rat-Outer Ring Road Expressway which was opened on August 2016. Total liabilities was at Baht 53,003 million, increased by Baht 4,038 million when compared with the amount at the end of 2015 which is consistent to the increase in asset. Total shareholders' equity was at Baht 29,793 million, increased by Baht 653 million from the net profit and dividend payment of Baht 1,834 million.

As of December 31, 2017, BEM and its subsidiaries had total assets of Baht 98,919 million, increased by Baht 16,133 million or 19.5% compared to the end of 2016 while total liabilities was at Baht 67,740 million, increased by Baht 14,737 million or 27.8% growth YoY compared to previous year. Total shareholders' equity was Baht 31,179 million, increased by Baht 1,396 million or 4% growth YoY.

#### Liquidity

For the year 2016, BEM and its subsidiaries generated cash flows from operating activities amounting to Baht 3,845 million. Cash of Baht 11,663 million from investing activities was utilized as follows (1) investment in the Si Rat-Outer Ring Road Expressway Project in the amount of Baht 6,035 million, (2) investment in current investments and other investment in the amount of Baht 5,744 million, (3) payment of the M&E equipment of the MRT Blue Line Project and investment in the MRT Purple Line Project in the net amount of Baht 766 million, (4) acquisition of fixed assets and other

assets in the net amount of Baht 277 million, and (5) cash receipt from sales of investments and dividend from TTW and CKP in the amount of Baht 1,159 million. BEM and its subsidiaries had net cash of Baht 4,112 million from financing activities due to (1) receipt of capital from issuance of debentures in the net amount of Baht 23,200 Million, (2) draw down of long-term loans in the net amount of Baht 1,585 million, (3) repayment of short-term loans in the net amount of Baht 17,690 million, (4) dividend payment in the amount of Baht 1,834 Million, and (5) payment of interest and finance cost in the amount of Baht 1,149 million. As at December 31 2016, BEM and its subsidiaries had cash and cash equivalents of Baht 777 million, decreased from the end of the previous year by Baht 3,706 million.

In 2017, BEM and its subsidiaries generated cash flow of Baht 7,150 million from operating activities. Cash of Baht 2,799 million was utilized as follows: (1) payment for M&E equipment of MRT Blue Line Project and invested in the MRT Purple Line Project in the net amount of Baht 8,020 million, (2) investment in other companies in the amount of Baht 417 million, (3) investment in the SI Rat-Outer Ring Road Expressway Project in the amount of Baht 130 million, (4) acquisition of fixed assets and other assets in the net amount of Baht 108 million, (5) cash receipt from sales of current investments and interest income in the amount of Baht 5,325 million, and (6) dividend receipt in the amount of Baht 551 million. BEM and its subsidiaries utilized cash of Baht 2,501 million from financing activities in (1) repayment of short-term and long-term loans in the amount of Baht 4,624 million, (2) payment of interest and finance cost in the amount of Baht 1,543 million, (3) dividend payment in the amount of Baht 1,834 million, (4) receipt of capital from issuance of debentures in the amount of Baht 5,000 million, and (5) drawdown of long-term loans in the amount of Baht 500 million. As of December 31, 2017, BEM and its subsidiaries had cash and cash equivalents of Baht 2,627 million, increased by Baht 1,850 million when compared with the amount at the end of 2016.

## **6. Industry Outlook**

### **6.1 Expressway business**

In 2017, the economy showed recovery sign. The income for some consumer groups increased as a result of the increase in wages and the investment in mega-projects especially when the financial institution started to relax the loan granting criteria. This stimulated the slight growth of domestic car sale. Considering car sale by region, automotive sale growth in the northern and southern region is more favorable than other regions. This was due to the favorable growth in agricultural and tourism industry. Bangkok also obtained benefits from the public investment in infrastructure megaprojects resulted in the growth in overall automotive industry (both personal vehicles and commercial vehicles) (*Source: Thansejtakij newspaper dated December 28, 2017*)

The aforementioned factors cause the traffic problems in Bangkok and vicinity. At present, there are 10 million vehicles registered in Bangkok while the distance of road in Bangkok is only 5,500 kilometers, causing traffic congestion in all Bangkok area. In addition, the construction of mega infrastructure projects and other construction and other factors like rain and flood caused low average car speed in Bangkok. According to the information of the Department of Land Transport, the average car speed in Bangkok area especially main road and inner ring during morning rush hour was lower by 0.3 kilometers/hour or 1.9% and lower by 2.3 kilometers/hour or 12.8% in the evening (*Source: Prachachart newspaper dated January 5, 2018*). This affected the growth in numbers of vehicles on the expressway as a whole.

### **6.2 Rail business**

Thailand's economic outlook in 2017 grew at approximately 3.9%, which was improved from 3.2% in the previous year. In 2018, it is expected to grow at 4.1% which mainly due to acceleration of disbursements and investments by the government sector, the acceleration in export of goods and services as well as the growth in private consumption (*Source: Office of the National Economic and Social Development Board*).

The government prioritizes its strategic plans for transportation development, particularly investment projects in the metro system, to solve traffic problems in Bangkok and its vicinity. The government speeds up the bidding process for such projects by establishing the Public Private Partnership (PPP) Policy Committee and setting up a PPP Fast Track team by focusing on infrastructure investments in accordance with Thailand's PPP Strategic Plan 2015-2019, which covers five megaprojects for transportation infrastructure in the initial phase, worth Baht 340 Billion. The

first 3 metro projects under the PPP Fast Track are the MRT Blue Line Extension, the MRT Pink Line and the MRT Yellow Line Projects. These 3 projects passed approval process within only 9 months. From the achievement of initial phase of PPP Fast Track, the Ministry of Transportation expedites the megaprojects into second phase of PPP Fast Track under budgeting year 2018, which covers 6 transportation infrastructure projects, worth more than Baht 613 billion. Such projects are High Speed Train from Bangkok-Rayong (connecting 3 airports Don Muang – Suvarnabhumi – U Tapao), MRT Purple Line South and MRT Orange Line. The government role to stimulate economy through public investment is very important to the economic in the future. To give an importance to the investment in transportation infrastructure projects would enable the convenience in travelling and logistics, which attract the private investment from both Thai and foreigners and also strengthen the sustainable economic growth in the long run. *(Source: BEM's form 56-1 for the year 2017)*