



**OUR WAY
IN ENERGY**

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Details of the Company, its Subsidiaries and
Associated Companies, and Joint Ventures

Additional information
is available in the Annual Registration
Statement (Form 56-1) posted on
www.sec.or.th or www.banpu.com

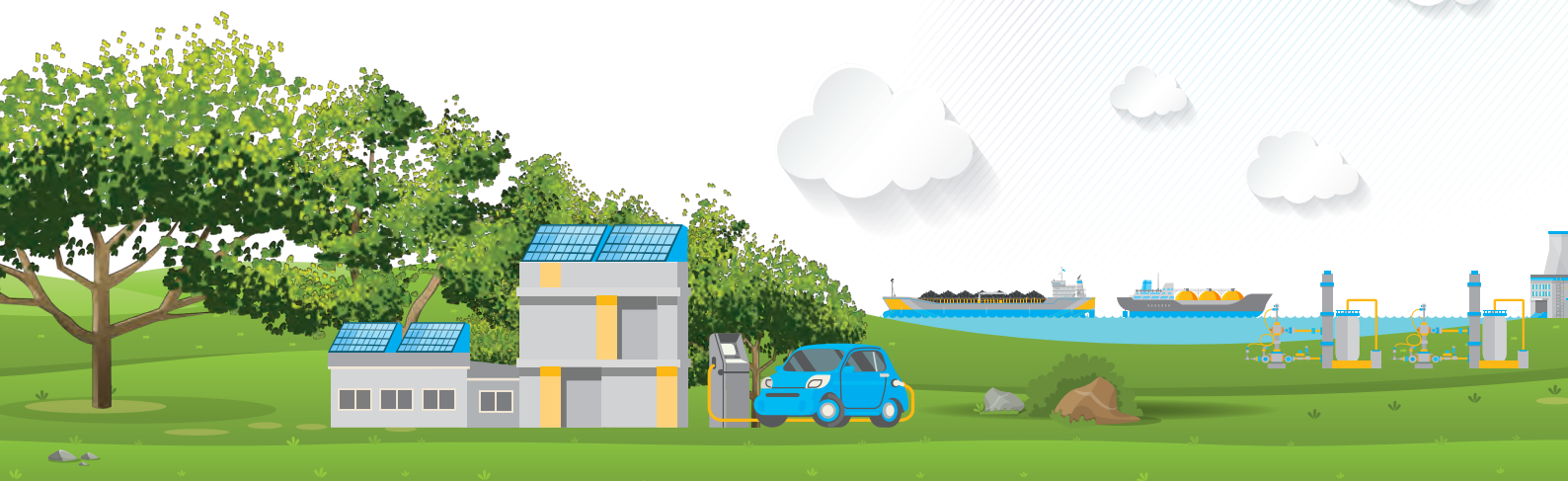


OUR WAY IN ENERGY

“OUR WAY”

Internally Means

That Banpu people are **together, inclusive, collective**. It is our power to drive the organization with **Banpu Heart**, our shared values that we must embed in our **mind** and **action**.



“OUR WAY”

Externally Says

That we are a **leading integrated energy** solutions company in Asia-Pacific at the heart of innovation, technology and sustainability. We **care**; we are **nurturing**; we **consider** others. Additionally, we are committed to **building sustainable values** for our stakeholders, while making a right balance for economic, environment and communities.





MAP OF BANPU'S GROUP OPERATIONS

MONGOLIA



JAPAN



CHINA



THAILAND



LAO PDR



VIETNAM



SINGAPORE



INDONESIA



UNITED STATES OF AMERICA



PENNSYLVANIA

AUSTRALIA



Coal Mine



Power Plant



Solar Farm



Wind Farm



Shale Gas



Coal Project



Power Project



Solar Project



Wind Project



Sales and Logistics Hub



Port

POLICY AND BUSINESS OVERVIEW

Banpu Public Company Limited was established on 16 May 1983 as “Ban Pu Coal Company Limited” with a THB 25 million registered capital. The Company was founded by members of the Vongkusolkrit and Auapinyakul families in order to subcontract a coal mining operation at Banpu Mine (BP-1 Mine) located in Li District, Lamphun province from the Department of Alternative Energy Development and Efficiency.

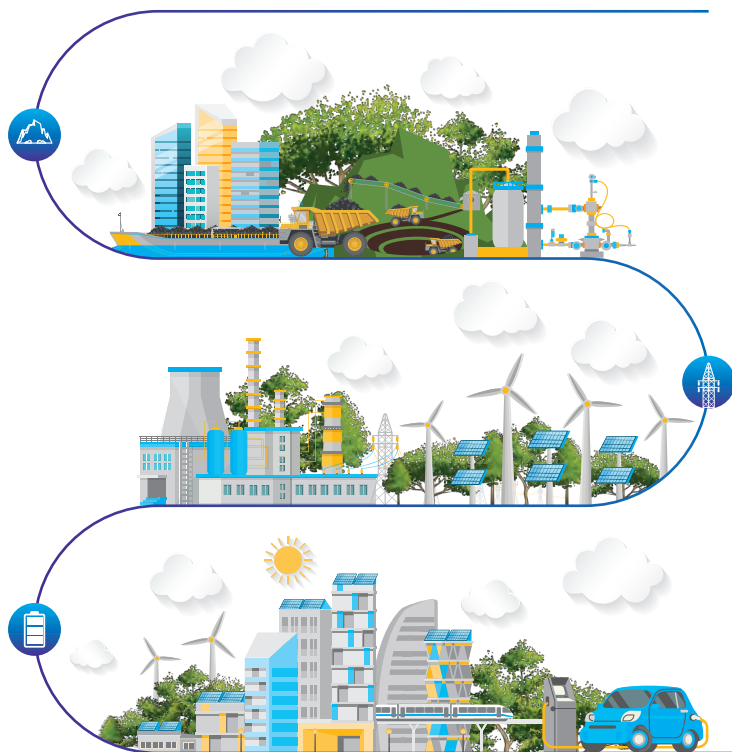
Later on 4 May 1989, Banpu was listed on the Stock Exchange of Thailand (SET). The Company later changed its name on 29 July 1993 to “Banpu Public Company Limited”.

With more than 35 years of experience in international and local businesses, Banpu has become an integrated energy solutions company operating in 10 countries in Asia-Pacific: Thailand, Indonesia, China, Australia, Lao PDR, Mongolia, Singapore, Japan, the United States of America and Vietnam, by creating growth throughout its 3 core groups of businesses, which are

Energy Resources (coal and gas including related operations such as marketing, trading, logistics, fuel procurement and transmission), **Energy Generation** (conventional and renewable power plants), and **Energy Technology** (total solar energy solutions, energy storage system and energy technology system). By incorporating both conventional and unconventional or renewable businesses within the Group's portfolio structure, Banpu then has a stronger integration across its core business units resulting in more effective resources management and a balanced business expansion which offers sustainable energy solutions for consumers, communities, society and the environment.

Banpu continues to move forward towards its vision of becoming “**The Asian energy company at the heart of innovation, technology, and sustainability**” with **Banpu Heart**, the corporate culture comprising being Passionate, Innovative and Committed. The Company targets to accelerate its business growth with the key strategy: Greener & Smarter, which focuses on being a more environmentally-friendly business and implementing smarter business management as well as adhering to good corporate governance principles while creating value for all stakeholders. Ultimately, Banpu aims to serve the sustainable energy solutions to accommodate to the needs of consumers community and society, which goes in line with our brand promise

“OUR WAY IN ENERGY”



VISION & MISSION



Vision

The Asian energy company at the heart of innovation, technology, and sustainability.



Mission



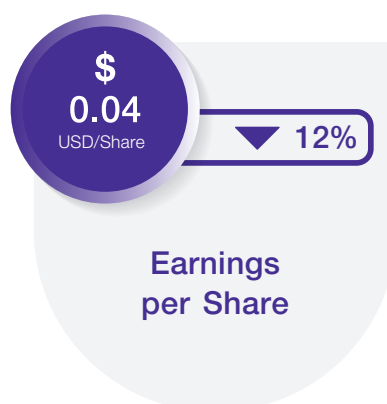
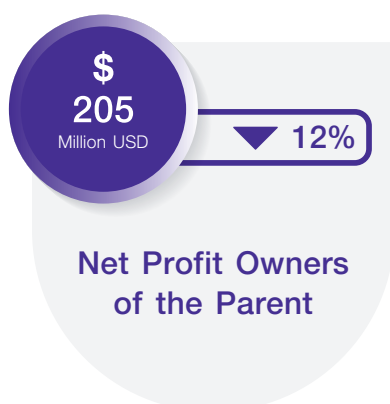
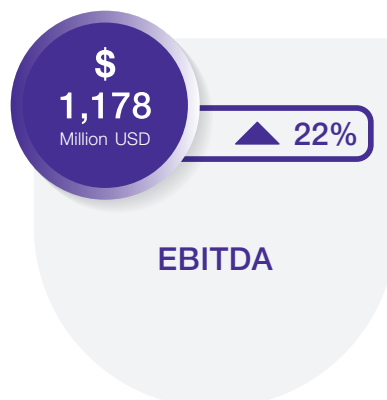
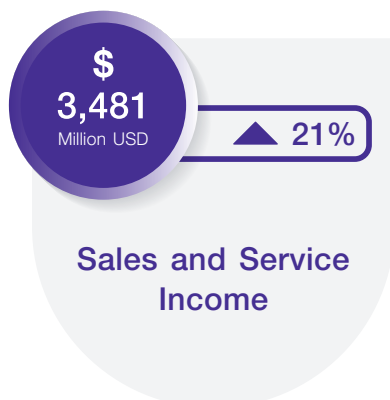
Build sustainable value for all our stakeholders as a trusted partner, with emphasis on care for the earth and society.

Promote innovation, synergy, sustainability, and integration across the energy supply chain, between conventional and new energy technologies.

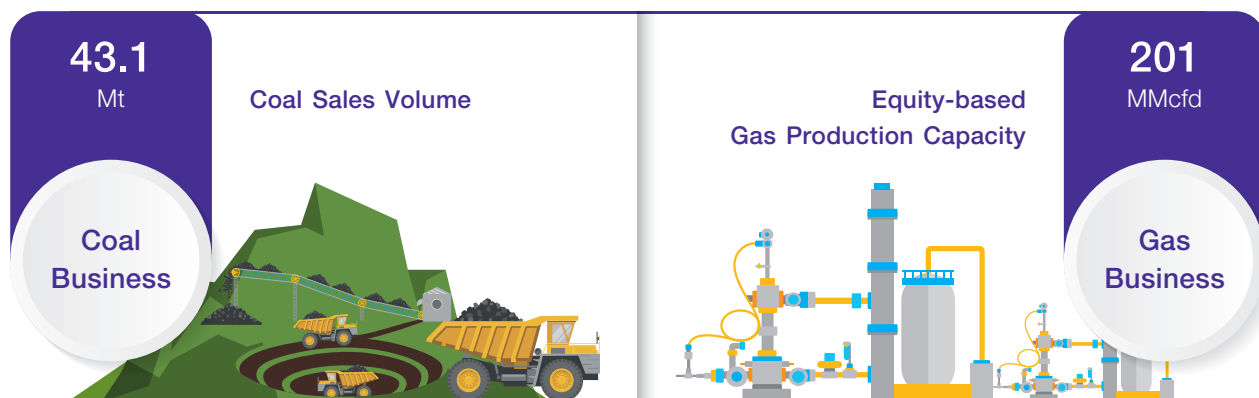
Foster our corporate values, operational excellence, and uphold Banpu's reputation for integrity, professionalism and best practices.



FINANCIAL HIGHLIGHTS



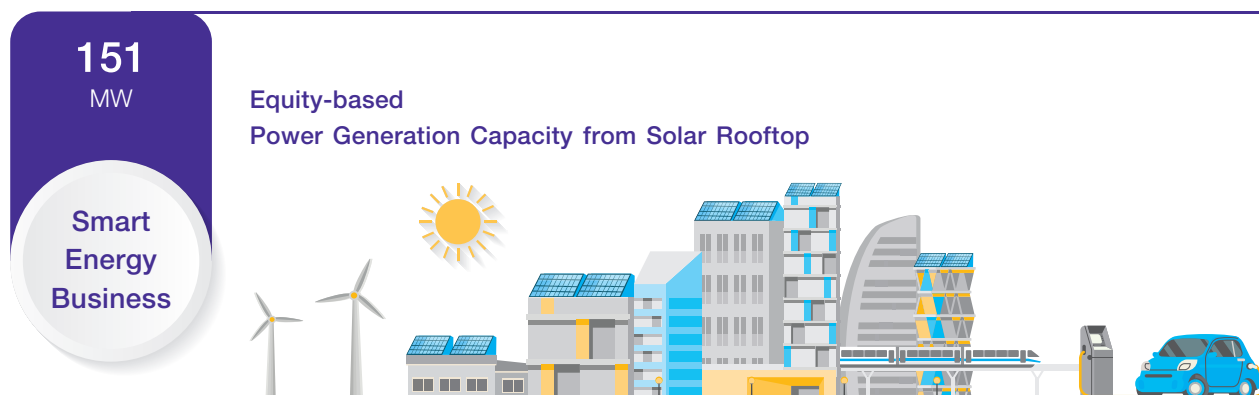
Energy Resources



Energy Generation



Energy Technology



		For the year ended 31 Dec 2018	For the year ended 31 Dec 2017	For the year ended 31 Dec 2016
Financial Position				
Total Assets	(Million USD)	8,454	8,223	6,973
Total Liabilities	(Million USD)	5,279	5,013	4,235
Total Equity	(Million USD)	3,175	3,211	2,738
Issued and Paid-up Share Capital	(Million USD)	150	150	143
Operational Results				
Sales and Service Income	(Million USD)	3,481	2,877	2,259
Cost of Sales	(Million USD)	(2,253)	(1,766)	(1,511)
Gross Profit	(Million USD)	1,228	1,110	748
Selling and Administration Expenses	(Million USD)	(419)	(379)	(340)
Royalty Fee	(Million USD)	(291)	(268)	(219)
Other Revenues	(Million USD)	65	46	33
Other Expenses	(Million USD)	(82)	(97)	(44)
Profit from Operation	(Million USD)	502	412	178
Share of Profit from Joint Ventures and Associates	(Million USD)	264	205	118
Interest Expenses	(Million USD)	(170)	(135)	(127)
Other Finance Costs	(Million USD)	(5)	(5)	(3)
Corporate Income Tax	(Million USD)	(189)	(134)	(69)
Indemnity Payment	(Million USD)	(86)	-	-
Non-controlling Interests	(Million USD)	(109)	(110)	(50)
Net Profit Owners of the Parent	(Million USD)	205	234	47
EBITDA	(Million USD)	1,178	968	540
Financial Ratios				
Gross Profit Margin	(%)	35	39	33
Net Profits to Total Revenues	(%)	6	8	2
Returns on Assets	(%)	2	3	1
Returns on Equity	(%)	6	8	2
Interest Coverage Ratio	(times)	3.8	5.7	5.3
Net Debt to Equity	(times)	1.07	0.99	0.99
Data per Share				
Earnings per Share	(USD)	0.040	0.046	0.013
Book Value per Share	(USD)	0.61	0.62	0.55
Dividend per Share	(THB)	0.70*	0.65	0.50

* The Company announced a total dividend of THB 0.70 per share arising from its performance during the period from 1 January 2018 to 31 December 2018, of which THB 0.35 was paid on 28 September 2018. The remaining dividend of THB 0.35 per share for 2018 performance will be paid on 30 April 2019.

Remark: Financial figures are based on the consolidated financial statement.

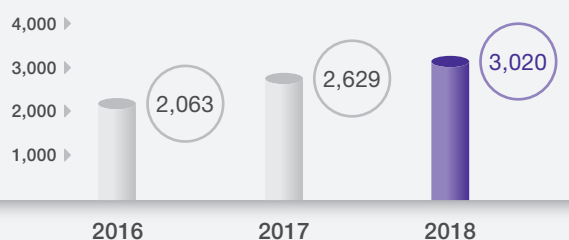
OPERATIONAL RESULTS

		For the year ended		
		2018	2017	2016
Coal Sales Volume	(Million Tonnes)			
Indominco		12.47	13.14	15.41
Trubaindo		4.50	4.98	5.97
Bharinto		2.36	2.30	2.50
Jorong		1.03	0.85	1.15
Kitadin-Embalut		1.12	0.94	0.87
Kitadin-Tandung Mayang		-	-	0.05
Sources - Indonesia (ITMG)		21.49	22.21	25.96
Other Sources		2.52	1.07	0.87
Sources - Indonesia		24.01	23.28	26.83
Sources - Australia		13.70	13.36	13.20
Sources - China (Traded Coal)		0.31	-	-
Total Coal Sales Volume		38.03	36.63	40.03
Coal Sales Revenue	(Million USD)			
Indominco		890	880	722
Trubaindo		505	463	391
Bharinto		255	202	162
Jorong		55	43	42
Kitadin-Embalut		96	67	42
Kitadin-Tandung Mayang		-	-	2
Revenue from Indonesia (ITMG)		1,801	1,656	1,362
Other Sources		183	66	41
Revenue from Indonesia		1,984	1,722	1,403
Revenue from Australia		1,014	883	660
Revenue from China (Traded Coal)		23	24	-
Revenue from Coal Business		3,020	2,629	2,063
Revenue from Power Business		196	189	155
Revenue from Gas Business		144	37	15
Revenue from Fuel Business		95	3	-
Revenue from Other Businesses		26	19	26
Total Sales Revenue		3,481	2,877	2,259
Gross Profit Margin	(%)			
Indominco		39	42	38
Trubaindo		51	47	38
Bharinto		55	51	44
Jorong		22	35	40
Kitadin-Embalut		55	40	26
Kitadin-Tandung Mayang		-	-	12
Gross Profit Margin - Indonesia (ITMG)		45	44	37
Other Sources		11	20	3

	For the year ended		
	2018	2017	2016
Gross Profit Margin - Indonesia	42	43	37
Gross Profit Margin - Australia	27	34	23
Gross Profit Margin - China (Traded Coal)	4	13	-
Gross Profit Margin - Coal Business	37	40	33
Gross Profit Margin - Power Business	21	24	35
Gross Profit Margin - Gas Business	47	36	44
Gross Profit Margin - Fuel Business	5	42	-
Gross Profit Margin - Other Businesses	44	18	51
Total Gross Profit Margin (%)	35	39	33

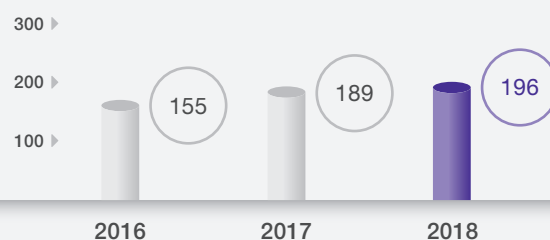
Revenue from Coal Business

(Million USD)



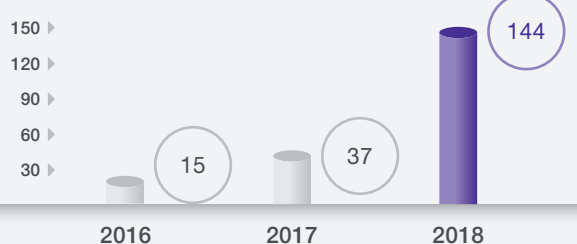
Revenue from Power Business

(Million USD)



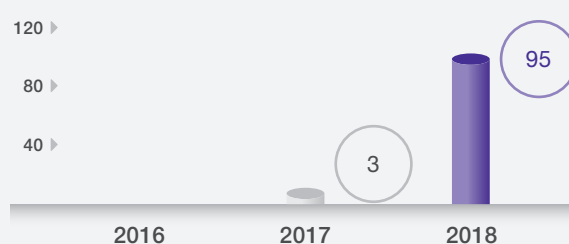
Revenue from Gas Business

(Million USD)



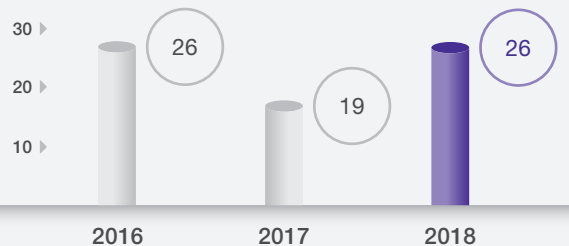
Revenue from Fuel Business

(Million USD)



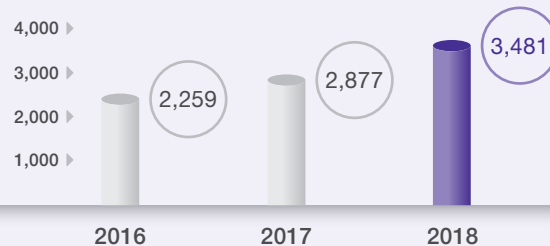
Revenue from Other Businesses

(Million USD)



Total Sales Revenue

(Million USD)



THE BOARD OF DIRECTORS REVIEW

This year, we also supported Banpu's brand revitalization to reflect Banpu's identity as being up-to-date, dynamic and constantly evolving. The new brand represents Banpu's vision of being the Asian energy company at the heart of innovation, technology and sustainability.



Mr. Chanin Vongkusolkrit

Chairman of the Board of Directors



In 2018, coal demands in several countries were higher than in the previous year. Meanwhile, the majority of producers did not invest to increase production capacity, and bad weather hindered production, resulting in the tight supply situation throughout the year. These consequently caused coal prices to rise. Despite coal price fluctuation, policy uncertainty and the trade dispute between the economic superpowers, Banpu Public Company Limited, with contingency plans in place, was able to promptly respond to those challenges, and thus was not significantly affected. Additionally, Banpu has continued to pursue Energy Resources, Energy Generation and Energy Technology group of businesses to achieve the highest market potential in all countries where Banpu has business operations in order to align with global energy trends.

The Board of Directors has always been committed to good corporate governance to foster business growth in tandem with social responsibility in all dimensions. We also promptly respond to disasters; for example, we provided relief to the victims affected by the severe flooding in Lao PDR in August 2018. This year, we also supported Banpu's brand revitalization to reflect Banpu's identity as being up-to-date, dynamic and constantly evolving. The new brand represents Banpu's vision of being the Asian energy company at the heart of innovation, technology and sustainability. The Board of Directors has also laid emphasis on

preparing workforce and work systems to enhance Banpu's capabilities and competitive advantage in all market situations, with adaptability and openness to new technologies in order to achieve predetermined operational goals according to the Greener & Smarter strategy.

Being recognized for the commitment to the Corporate Governance Policy and compliance with the principles of good corporate governance, Banpu received Drive Award 2018 for Strategy, which demonstrated our outstanding performance in strategic management and corporate governance as well as care for shareholders and partners. Apart from that, Banpu has been recertified as a member of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC) for the second term, reflecting Banpu's determination to combat all forms of corruption.

On this occasion, the Board of Directors would like to express our gratitude to all our valued customers, stakeholders and related parties, both in Thailand and abroad, for your continued support. We pledge our commitment to the principles of good corporate governance with integrity, transparency and accountability. We are steering ahead on full steam to drive Banpu's business to achieve being a leading integrated energy solutions company in Asia-Pacific and create sustainable value for all stakeholders.

CHIEF EXECUTIVE OFFICER REVIEW



Banpu is delivering on its promise of a Greener & Smarter strategy. While our conventional energy businesses continues to generate strong financial returns in the near term, we are investing heavily in new energy technologies which will ensure sustainable value creation for shareholders and stakeholders for many decades to come.

A handwritten signature in black ink, consisting of stylized initials and a surname, positioned above the printed name.

Ms. Somruedee Chaimongkol
Chief Executive Officer

In 2018, Banpu's EBITDA¹ grew by 22% to a record USD 1.2 billion, including the first significant contribution from the Company's Gas business in the US. Last year also saw substantial growth in the group's renewable energy capacity, strategic investments in smart energy businesses and the launch of digital platform and innovation lab initiatives.

Summary of Group Financial Performance

Banpu's consolidated group EBITDA increased 22% year-on-year to USD 1,178 million in 2018. While the contribution from our Power business was roughly the same at USD 182 million, our Gas business delivered EBITDA of USD 101 million, more than three times the contribution in 2017. The Coal business registered a 19% increase in EBITDA to USD 895 million.

A stronger Thai Baht, derivatives losses and the Hongsa settlement all impacted the Net Profit After Tax which, as a consequence, was down slightly on the previous year at USD 205 million. Our balance sheet was stable with our TRIS credit rating confirmed at 'A+ with stable outlook'².

Energy Resources

Coal Sales and Market Analysis

Banpu group coal sales in 2018 totaled 43.1 million tonnes (Mt) (up 4%), just over half of which came from our Indonesian operations (24.1 Mt 100%-basis³), nearly a third from our Australian mines (14.1 Mt equity-basis) and the rest from China (4.9 Mt equity-basis).

Although Japan, Korea and Taiwan purchased less coal from Banpu in 2018, (10.6 Mt down from 12.5 Mt), demand from China, India and Southeast Asia grew to 23.8 Mt (from 20.3 Mt in 2017), including new sales of 1.3 Mt to Vietnam. Domestic sales to Australian customers increased slightly to 8.5 Mt (from 8.2 Mt in 2017).

The benchmark NEX⁴ Index, representing thermal benchmark prices at Newcastle in Australia for high-grade export coal, increased to an average level of USD 108.0 per tonne in 2018 versus USD 89.6 per tonne in 2017, a 20% increase. Key drivers of coal price strength included economic growth and new coal-fired power capacity in South and Southeast Asia and supply constraints in key producing countries, mainly relating to poor weather and infrastructure limitations. Banpu group's weighted average selling price in 2018 was USD 78.8 per tonne, an 11% increase year on year.

Indonesia Coal Business

PT Indo Tambangraya Megah Tbk ('ITM'), approximately 67.13%-owned by Banpu, generated EBITDA of USD 497 million in 2018, an 11% increase on the previous year. The strong financial performance was achieved thanks to an 11% uplift in average selling prices (to USD 81 per tonne) and careful cost management.

Coal output at ITM increased in 2018 to 22.1 Mt. Trubaindo and Bharinto had output at 7.3 Mt, while Jorong and Embalut also generated increased aggregate production of 2.2 Mt, up 0.4 Mt from the previous year. Meanwhile, output at Indominco declined to 12.6 Mt from 13 Mt in 2017 due to weather conditions and the winding down of West Block.

ITM took advantage of strong and rising coal prices to optimize coal reserves by increasing stripping ratios.

¹ Earnings Before Interest, Taxes, Depreciation and Amortization: EBITDA

² Banpu corporate rating and for senior unsecured debentures.

³ Including third-party traded coal.

⁴ The Newcastle Export Index (previously known as the Barlow Jonker Index or 'BJI')

This, combined with higher oil prices (up 34%), meant that unit costs before royalties increased to USD 60 per tonne, up 7% from the previous year.

Coal reserves at ITM increased by a total of 122 Mt (increased by 48% year-on-year before deducting 2018 sales depletion) to 354 Mt in 2018 from a combination of exploration, mine plan improvements and acquisition of the NPR project, due for commissioning by 2022.

Australia Coal Business

Centennial's EBITDA increased by 9% in 2018 to AUD 314 million thanks to an increase in the average selling price by 23% to AUD 97 per tonne and higher sales volume. Unit costs increased by 21% to AUD 64 per tonne.

Centennial's mines in New South Wales produced a total of 11.7 Mt of coal in 2018. The mines are grouped into Western Operations which include Springvale, Clarence and Airly - and Northern Operations which include Mandalong and Myuna. Although output at the Western Operations was lower at 4.3 Mt in 2018 with adverse mining conditions at Springvale, the Northern Operations achieved an increase in output to 7.4 Mt.

China and Mongolia Coal Business

EBITDA at Gaohe, in Shanxi province (45%-owned by Banpu) increased to USD 464 million, a 14% increase year-on-year. Gaohe's average selling price in 2018 increased to an average of USD 93 per tonne, up from USD 81 per tonne in 2017. Gaohe's output for the year of 10.1 Mt was stable year-on-year. At Hebi Zhong Tai (40%-owned by Banpu) in Henan province, output increased to 1.5 Mt, up from 1.3 Mt in the previous year.

In Mongolia, work continued at the Tsant Uul pilot project including collaboration with potential pyrolysis

and oil upgrading vendors to add more value to tar oil and char products. Feasibility study work also continued around the Unst Khudag and Altai Nuurs projects.

US Gas Business

Since 2016, Banpu has developed a new shale gas business in the Marcellus Shale in Pennsylvania in the US, with six investment transactions totaling just over USD 500 million. The investments have been made at an average cost of USD 0.5 per thousand cubic feet ('Mcf') of acquired reserves. Through its local affiliate Banpu is also developing operator positions in two of these assets.

Banpu's total attributable gas production from its US asset portfolio is now over 200 million cubic feet per day ('MMcfd'). Banpu's total attributable proved ('1P') dry gas reserves in the US now stand at 1.25 trillion cubic feet.

Banpu's gas business generated EBITDA of USD 101 million versus USD 25 million in 2017 on attributable sales of 70.8 Bcf, up 308% from the previous year. The average benchmark Henry Hub price in 2018 was USD 3.07 per million british thermal units (Mmbtu).

Energy Generation

Overall Performance

Banpu's power business was listed separately as 'Banpu Power' in October 2016 on the Stock Exchange of Thailand and has entered the SET 50 Index. Banpu retains a 78.57% shareholding in Banpu Power.

Banpu Power EBITDA in 2018 was stable at around USD 182 million. The company has a combination of conventional coal-fired power and renewable energy operations and projects in North Asia⁵ and the Greater Mekong region⁶. The total operating capacity of Banpu Power's power generation assets on an equity-basis reached 2.15 gigawatts ('GWe') by year end 2018 up 4%.

⁵ China and Japan.

⁶ Thailand, Vietnam and Laos.

The company also has a pipeline of around 0.72 GWe currently under development for commissioning between now and 2023. Banpu aims to build at least a 4.3 GWe power business by 2025 of which at least one-fifth will be from renewable energy.

Conventional Power Business

Banpu Power has two major conventional power operations in the Greater Mekong region: a 50% interest in BLCP, a 1,434 MW coal-fired power plant in Thailand and a 40% interest in Hongsa, a 1,878 MW coal-fired mine-mouth power plant in Laos.

In 2018, BLCP recorded a high Equivalent Availability Factor ('EAF') of 89% despite an extended major maintenance overhaul of its unit 2. BLCP's EBITDA was down on the year before at USD 193 million due to the overhaul. Hongsa's EBITDA increased year-on-year to USD 414 million. Hongsa's EAF was up at 87% in 2018 versus an average of 81% in 2017, reflecting plant reliability improvement.

Banpu Power has three coal-fired combined heat-and-power operations in China (Luannan, Zouping and Zhengding) with total capacity of 487 MWe, up 12% from 2017 due to expansion at Luannan with additional 52 MWe. EBITDA from these operations at USD 32 million in 2018, was down on the previous year due to rising coal costs.

Construction of the new 1,320 MW Shanxi Lu Guang coal-fired power project has been progressing and is now 44% complete. The commissioning date is around the end of 2019 due to the central government's concerns about excess power generation capacity in the short term.

Renewable Power Business

Banpu's North Asian solar PV business includes approximately 189 MW of operating capacity, mainly in China, with another 196 MW under development, all in Japan. Banpu's solar business in China generated EBITDA of USD 17 million for the year (+17%). Two new Japanese solar PV farms with aggregate capacity of 25 MW commenced operations in 2018, including the 9.5 MW Mukawa project and 15 MW Nari Aizu project.

Banpu made its first investment in the wind energy sector in Vietnam during the year: a 200 MW wind power project in Soc Trang of which 80 MW received an Investment Registration Certificate in July 2018. The new capacity will come into operation between 2020 and 2021.

Energy Technology

Smart Energy Business

Banpu launched Banpu Infinergy as a smart energy business in August 2017, initially focused on solar rooftop services. These services have already been rolled out in Thailand with around 14 MW installed for commercial customers so far.

Banpu Infinergy has also integrated solar rooftop systems in certain 'smart infrastructure' projects which it has developed for customers in Thailand. For example, a Smart Campus project was completed in a first phase for Rugby School in Bangkok in 2018, including 1,450 kW of solar rooftop systems for school buildings and walkways. Phase 2 will provide solar rooftop systems for new buildings, solar street lighting, energy storage and management systems and an Energy Learning Center for the school.

Banpu Infinergy has diversified the geographic reach of its solar rooftop investment strategy through acquisition of a shareholding in Singapore's leading solar rooftop player, Sunseap. The stake was increased in 2018 to 38.5%. Through Sunseap, Banpu Infinergy now has additional attributable installed solar rooftop and solar PV capacity of 137 MW in Southeast Asia (Singapore, Vietnam, Philippines, Malaysia and Cambodia) and India.

Banpu Infinergy also took initial positions in the battery and electric vehicle ('EV') sectors in 2018. A 47.7% stake was acquired in Durapower Holdings, a Singapore company specialized in researching, designing, manufacturing and integrating lithium-ion batteries for the automotive industry and energy storage systems ('ESS'). The company has an operating battery-manufacturing factory in China with capacity of 80 MWh per year. In early 2019, Banpu Infinergy acquired a 21.5% shareholding in FOMM Corporation, Japan's leading short distance compact EV developer. FOMM EVs have a battery cloud system, high space utilization efficiency, flood countermeasure features and a state-of-the-art power cooling system.

Proprietary Technology Development

The Banpu group kicked-off a digital transformation review in 2018 designed to assess the potential for strengthening the efficiency of all aspects of the group's operations through deployment of digital platforms and systems.

At the end of 2018, Banpu went a step further by launching Banpu Innovation & Ventures ('BIV') with its own Innovation Lab which will originate cutting-edge proprietary technologies and fast-track them into

value-creating businesses. Some of these projects will be incorporated through start-up co-creation programmes with partners and will either then be 'spun-in' (to the Banpu group) or 'spun-out' after an initial phase of development. Key focus areas for BIV in 2019 will include e-mobility as a service, blockchain, energy systems and digital mining. BIV is headed-up by Banpu's new Chief Technology Officer, Mr. Othman Elkhomri, who has had a successful career in Silicon Valley in the US where he was instrumental in the development of a number of disruptive technologies for top unicorns and other stealth-mode start-ups.

Strategic Review and Outlook

In recent years, Banpu has been developing a new strategic framework with a view to establishing a more sustainable platform for building long-term value for our stakeholders and shareholders.

The underlying theme of the new strategy is to ensure that Banpu becomes both 'Greener and Smarter'. The Greener theme is focused on developing lower emissions and more eco-friendly businesses. The Smarter theme revolves around developing and harnessing new technologies as well as capturing horizontal and vertical synergy value through an 'Integrated Energy Solutions' strategy across the energy supply chain, from resource development and logistics to generation and distribution.

In adopting and implementing this approach, Banpu has also aligned its strategy with the United Nations Sustainable Development Goals ('SDGs'). The Company has set out a number of specific objectives in line

with the SDGs including reducing its attributable greenhouse gas emissions from its energy resources business by 25% and from its energy generation business by 15% by 2020.

We have delivered on our commitment in each of our main business groups areas as follows:

- 1. Energy Resources:** Banpu has developed a new lower emissions energy resources business around gas. Banpu is now a leading gas producer in the US and will grow this business in the years ahead.
- 2. Energy Generation:** Banpu has established a 0.5 GWe renewable energy portfolio of solar and wind assets under development or in operation throughout the Asia-Pacific region. The next few years will see this portfolio grow to at least 0.9 GWe of capacity.
- 3. Energy Technology:** Banpu has made progress in developing a new smart energy business with a focus on distributed energy, battery technology, e-mobility and smart infrastructure. And we have now launched our own digital transformation, Innovation Lab and start-up co-creation programmes.

We are delighted to have been selected for a fifth consecutive year as a member of the Dow Jones Sustainability Indices ('DJSI'). And we were again ranked 'Gold Class' in the Coal & Consumable Fuel sector by Robeco Sustainable Asset Management. Banpu also received the 'Sustainability Awards Honor' for the second consecutive year and was listed as a Thailand Sustainability Investment ('THSI') by the Stock Exchange of Thailand for the fourth consecutive year.

Banpu also continue to focus on ensuring best practice corporate governance and investor relations standards. In particular, we are pleased to have achieved an 'Excellence' scoring in the Corporate Governance Report of Thailand Listed Companies in 2018 as published by the Securities & Exchange Commission of Thailand ('SEC'), the Thai Institute of Directors Association ('IOD') and the Stock Exchange of Thailand ('SET').

Banpu is changing in some very fundamental ways. To celebrate these changes and with a view to characterizing our new corporate culture, we decided to launch a new corporate branding attributes in 2018, the 'Banpu Heart'. The Banpu Heart is essential a mantra comprising three related themes:

- **Passion:** for our vision of leading the transition to ever-more sustainable energy supply in the Asia-Pacific region
- **Innovation:** realizing our vision by harnessing new technologies and an integrated energy solutions approach which emphasizes ecosystem-thinking and synergy capture
- **Commitment:** having a real sense of urgency and the grit and courage to get things done and deliver results.

This is a very exciting time to be part of the Banpu journey. It is a genuine privilege and an honor, for me as CEO to serve the Company's board of directors, management, staff, stakeholders and shareholders at this time. I would like to thank all of you for your support in 2018 and look forward to working with you all again in 2019.

SUMMARY OF MAJOR CHANGES AND DEVELOPMENT IN 2018 AND MAJOR CURRENT EVENTS

14 February 2018

Banpu Renewable Singapore Pte. Ltd., a subsidiary of Banpu Power Public Company Limited, acquired newly issued shares for 35% stake in Digital Energy Solutions Corporation Co., Ltd., a Japanese listed company, with JPY 17.50 million or USD 0.16 million investment.

22 February 2018

The Board of Directors meeting approved the dividend payment for the 2017 operating profits during 1 January - 31 December 2017, at a dividend rate of THB 0.65 per share. Previously, an interim dividend had been paid out to shareholders at a rate of THB 0.30 per share on 29 September 2017. The remaining 2017 dividend for the operating profits during 1 July - 31 December 2017 was proposed to be paid out to the shareholders at a rate of THB 0.35 per share. The dividend payment was appropriated from the corporate income tax-exempted profit, on which shareholders are not entitled to tax credits. The dividend was paid on 30 April 2018.

28 February 2018

BPIN Investment Co., Ltd. (BPINI), a subsidiary of Banpu, acquired preferred shares of Sunseap Group Pte. Ltd. (Sunseap), a Singaporean limited company, through third party with an investment worth SGD 10.21 million or USD 7.75 million. This acquisition increased BPINI's stake in Sunseap from 28.86% to 33.64%. Then, on 14 June 2018, BPINI acquired newly-issued preferred shares, which have equal rights with ordinary shares, of Sunseap worth SGD 33 million, or USD 24.76 million, which increased BPINI's stake in Sunseap to 40.74%.

6 March 2018

The Civil Court read the Supreme Court judgment on the Hongsa court case to the parties. The summary of the Supreme Court judgment is as follows:

1. In respect of the claim that the Defendants entered into the Joint Development Agreement to acquire the information without true intention to develop the Hongsa Project, the Court considered that the Defendants acted in good faith in entering into the Agreement with its true intention to develop the Hongsa Project, but not to acquire the information as alleged.

2. In respect of the claim that the Defendants terminated a contract with a contractor to delay the Hongsa Project to result in the Lao Government terminating the concession agreements with the Plaintiffs, the Court considered that the Defendants conducted in good faith for the benefit of the Hongsa Project, and the Lao Government did not adopt the delay from the termination of the contractor as a cause of termination of the concession agreements with the Plaintiffs.
3. In respect of the claim that the Defendants induced the Lao Government to terminate the concession agreements with the Plaintiffs, the Court considered that the Defendants was in good faith and did not do so. The termination of the concession agreements was the pure decision of the Lao Government for the benefit of its people.
4. In respect of the claim that the Defendants used the project information of the Plaintiffs, the Court considered that the Defendants utilized the valuable information of the Plaintiffs and therefore ordered the payment to the Plaintiffs the sum of THB 1,500 million plus interest at the rate of 7.50% per annum calculated from July 2007.

Banpu, its subsidiaries and its management have always conducted business with integrity and high regard to shareholder's and the society's benefit. In compliance with the Supreme Court's judgment, Banpu together with Banpu Power Public Company Limited and Banpu International co., Ltd., already paid THB 2,702.05 million in damages to the Plaintiffs on 9 March 2018. Banpu was responsible for one-third of payment at THB 900.68 million.

7 March 2018

Banpu Infinergy Co., Ltd. (BPIN), a subsidiary company of Banpu, invested through BPIN Investment Co., Ltd. (BPINI) in New Resources Technology Pte. Ltd. (NRT) of Singapore for a 44.84% stake with an investment worth SGD 43.21 million or USD 34.17 million. NRT has been specialized in designing, manufacturing and integrating of Lithium-Ion Battery (LiB) for automotive industry and Energy Storage System (ESS) for more than eight years. Its factory is located in China and has a current generation capacity of 80 MWh with a further expansion plan in future. This investment in NRT represents the Company's first major step in the ESS business.

8 August 2018

Banpu Power, a subsidiary of Banpu, has diversified its investment into wind-powered energy in Soc Trang Province of Vietnam. The Company has received Investment Registration Certificate (IRC) from the Department of Planning and Investment (DPI) to develop the first phase of the project with a total installed capacity of 80 MW. Banpu Power is conducting a feasibility study and expects to achieve Commercial Operation Date (COD) by 2020, while the remaining two phases expect to achieve COD by 2021.

8 August 2018

The Company issued name registered, unsubordinated, and unsecured debentures in the US currency for sale at the amount of USD 50 million. The maturity period is ten years, and the interest rate is 5.25% per year. The maturity date is on 8 August 2028.

10 August 2018

PT. Indo Tambangraya Megah Tbk (ITM), a 67.13% owned subsidiary of Banpu in Indonesia, has signed a Share Purchase Agreement to acquire 100% stake in PT. Nusa Persada Resources (NPR) coal mine, who has an IUP¹ Operation License, with an investment worth USD 30 million (approximately THB 990 million). The NPR mine has stated coal reserves of 77.4 million tonnes, covering a concession area of 4,291 hectares in Central Kalimantan, Indonesia. The coal reserves provide premium coal quality with a calorific value of 5,500 kcal/kg. The mine is anticipated to start operation in 2022.

16 August 2018

Banpu unveiled the Company's new brand promise **"Our Way in Energy"**, which means Banpu's way to build sustainable values for all stakeholders, to fulfill its vision of the Asian energy company at the heart of innovation, technology and sustainability. Accompanying the new brand promise are the redesigned logo and other corporate identities that represent its position as the integrated energy solutions company in all 10 countries where it operates. The revamped identity reflects the Company as always up-to-date, dynamic and constantly evolving and developing products and services to serve the needs of the business and social sectors as well as communities.

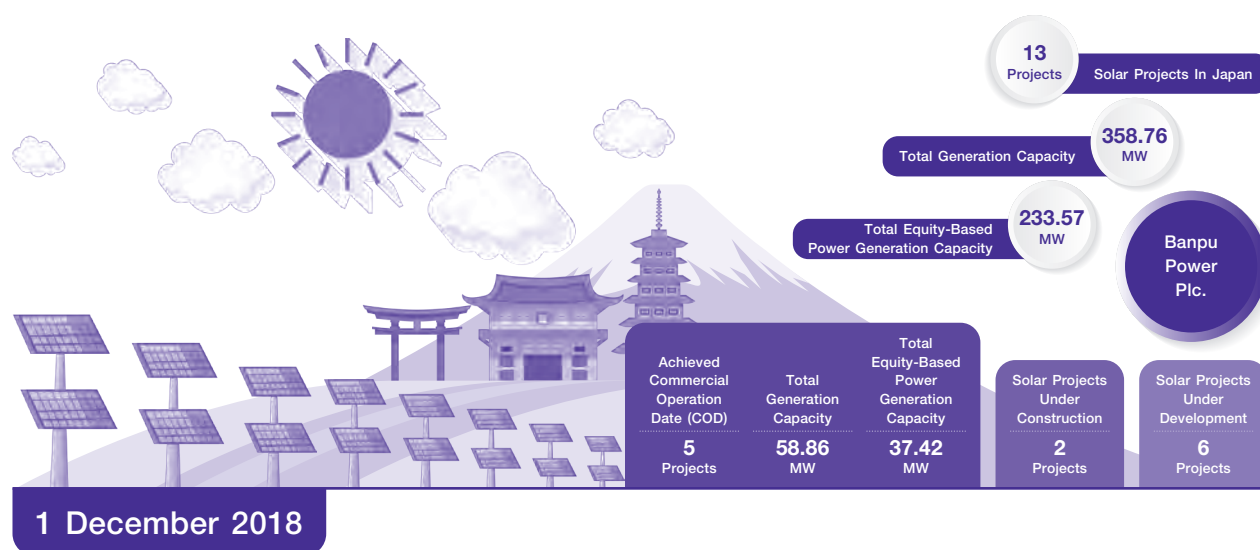
30 August 2018

The Board of Directors meeting approved the interim dividend payment for the operating profits for the last six months ending 30 June 2018, at a rate of THB 0.35 per share for 5,161,925,515 shares, totaling THB 1,806.67 million. The dividend payment was appropriated from the corporate income tax-exempted profit, on which shareholders are not entitled to tax credits. The dividend was paid on 28 September 2018.

November 2018

The second phase extension of Luannan Combined Heat and Power Plant, Hebei, China, achieved Commercial Operation Date with a total capacity of 25 MW of electricity and 150 tonnes of steam per hour, or 52 MWe, increasing its total capacity to 175 MWe.

¹ Izin Usaha Pertambangan: Mining Business License



Banpu Power, a subsidiary of Banpu, reported the progress on the Nari Aizu solar farm in Fukushima prefecture under a TK structure in Japan that the project has achieved Commercial Operation Date as planned. The solar farm has a total capacity of 20.46 MW, with 15.35 MW equity-based capacity. The Company also entered into sales and purchase agreement with Tohoku Electric Power Co., Inc. under Feed-in Tariff (FiT) scheme for 20 years at the price of JPY 36 per 1 kWh. Banpu Power now owns 13 solar projects with a total capacity of 358.76 MW, including 233.57 MW equity-based capacity. Five projects achieved Commercial Operation Date with a total capacity of 58.86 MW, including 37.42 MW equity-based capacity; two projects under construction and the other six projects in the development phase.

25 December 2018

Banpu secured the company rating and the ratings of the existing senior unsecured debentures at “A+” affirmed by TRIS Rating. This rating reflects Banpu’s leading position in coal industry among the companies in Asia-Pacific, including its diverse customer bases and coal resources, reliable stream of revenue from the power business and strategic move to become a leading integrated energy solutions company in Asia-Pacific.

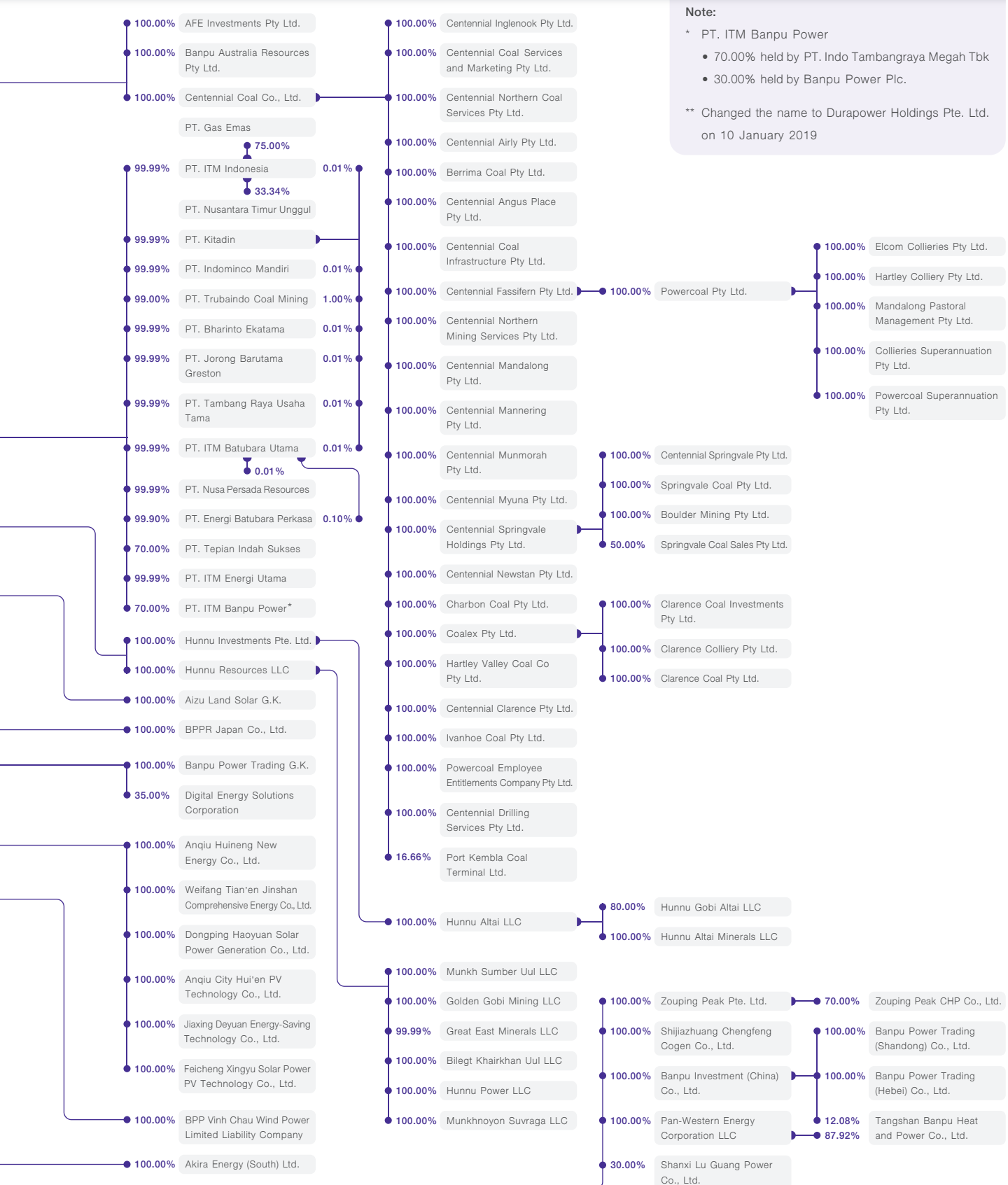
21 February 2019

The Board of Directors meeting approved the Company’s dividend payment at a rate of THB 0.7 per share for the operating results between 1 January - 31 December 2018, of which a THB 0.35 per share interim dividend was paid out on 28 September 2018. Thus, the remaining THB 0.35 dividend would be further paid out of the retained earnings and profits from the operation during 2018. The Meeting proposed the Company to pay THB 0.35 per share dividend from accumulated profits and operating profits during 1 July - 31 December 2018 which are appropriated from the corporate income tax-exempted profit, on which shareholders are not entitled to tax credits. The dividend payment is scheduled on 30 April 2018.

BANPU GROUP STRUCTURE

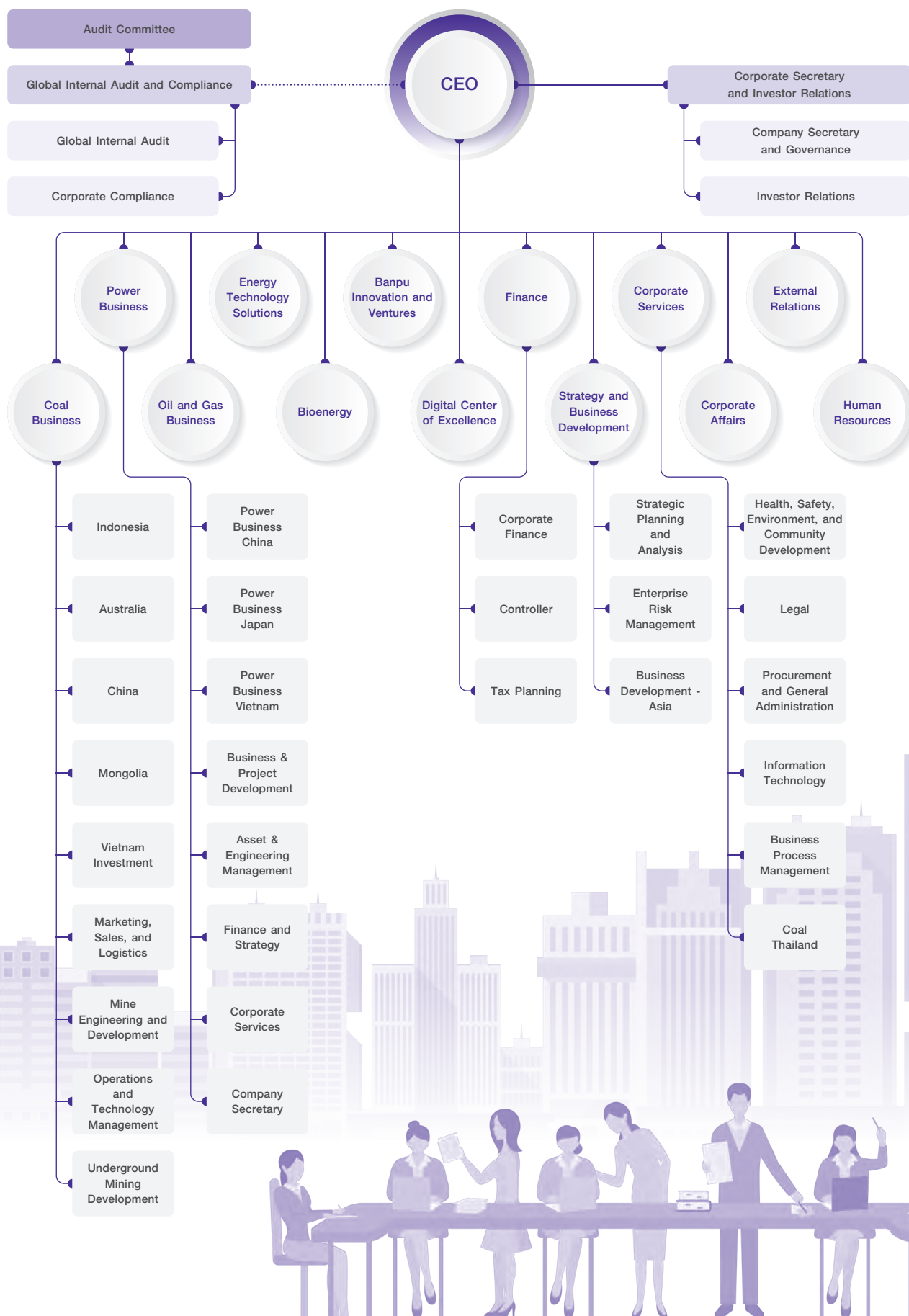
As of 31 December 2018





ORGANIZATIONAL STRUCTURE

As of 31 December 2018



MANAGEMENT STRUCTURE

The Company's management structure as of 31 December 2018 consists of the Board of Directors and executive officers. The Board of Directors consists of independent directors, non-executive directors, and executive directors. Independent directors account for 33% of the Board membership.

The Board set up three sub-committees, namely, the Audit Committee, the Corporate Governance and Nomination Committee, and the Compensation Committee.

The Board also requires that Chairman of the Audit Committee, Chairman of the Corporate Governance and Nomination Committee, Chairman of the Compensation Committee, and all directors in the Audit Committee be independent directors.

1. The Board of Directors consists of:

- | | |
|-------------------------------|---|
| 1. Mr. Chanin Vongkusolkit | Chairman
of the Board
of Directors |
| 2. Mr. Rutt Phanijsaphand | Vice Chairman/
Independent
Director |
| 3. Mr. Teerana Bhongmakapat | Independent
Director |
| 4. Mr. Suthad Setboonsarng | Independent
Director |
| 5. Mr. Sudiarso Prasetyo | Independent
Director |
| 6. Mr. Anon Sirisaengtaksin | Director |
| 7. Mr. Metee Auapinyakul | Director |
| 8. Mr. Ongart Auapinyakul | Director |
| 9. Mr. Rawi Corsiri | Director |
| 10. Mr. Buntoeng Vongkusolkit | Director |
| 11. Mr. Verajet Vongkusolkit | Director |
| 12. Ms. Somruedee Chaimongkol | Director |

Mr. Ongart Auapinyakul, Mr. Rawi Corsiri and Ms. Somruedee Chaimongkol. The two individuals are authorized to sign jointly on a document affixed with the Company's seal.

Duties and Responsibilities of the Board of Directors

The Board of Directors is accountable to shareholders with respect to managing the Company and supervising its management so that the organization achieves its goals while shareholders' interests are maximized. At the same time, the Board of Directors makes sure that the Company's business operations are in compliance with the Code of Conduct while the interests of all stakeholders are considered.

The Board of Directors has a duty to comply with the laws, objectives, and regulations of the Company, and with resolutions of the shareholders' meeting. It must perform duties with integrity and must safeguard short- and long-term interests of shareholders. The Board also complies with rules and regulations of the Stock Exchange of Thailand (SET), the Office of the Securities and Exchange Commission (SEC), and the Capital Market Supervisory Board, which was established according to the Securities and Exchange Act, B.E. 2535 as amended by the Securities and Exchange Act (No.5), B.E. 2559.

Authorized Signatory Directors on behalf of the Company

Any two of the following five board members have the authority to sign on behalf of the Company:
Mr. Chanin Vongkusolkit, Mr. Metee Auapinyakul,

The Board formulated the "Banpu Public Company Limited Board of Directors' Practice" in 2009 as a guideline for the Board of Directors. The handbook

details definitions, composition and criteria of the Board, directors' qualifications, terms of office and vacancies, duties and responsibilities of the Board as well as meetings and voting procedures. It was amended and edited in 2011, 2012, 2014, and 2017 to reflect changing responsibilities, business climates, and to enhance good corporate governance of the Board of Directors.

To comply with the practices, the Board entrusts the CEO to run the Company's business and to supervise the Company's operations.

The Board has also formulated a charter for the Audit Committee, the Corporate Governance and Nomination Committee, and the Compensation Committee as a guideline for their duties.

The Board also organizes an orientation session for new directors so that they are aware of what Banpu expects from them. Through orientation, the directors learn about their roles and responsibilities, Banpu's

corporate governance policy and practices, and Banpu business and operations. In addition, visits to the Company's different operational units are arranged for new directors. These activities are carried out in order to prepare them thoroughly for their role as Banpu directors.

The Board of Directors has a policy to expand all directors' horizons on corporate governance, industrial outlook, businesses, new technology and innovations, etc. Directors are encouraged to attend seminars or trainings held by the Thai Institute of Directors (IOD) and other reputable institutions to enhance their performance. In addition, seminars are held with the management to transfer technical knowledge and experience directly related to the Company's business. Knowledge sharing sessions, regarding new energy and technology, are also organized between management and the Board of Directors on a regular basis. In 2018, the Board of Directors attended seminars and trainings as follows:

Name	Training Course/Seminar	Institution	Date of Training/Seminar
Mr. Teerana Bhongmakapat (Chairman of the Audit Committee and Member of the Compensation Committee)	- Seminar on "SME and Consumer Financial Solutions"	Bank of Thailand	19 - 20 March 2018
	- Boards that Make a Difference (BMD) #8/2018	Thai Institute of Directors Association (IOD)	19 - 20 November 2018
Mr. Rawi Corsiri (Chairman of the Corporate Governance and Nomination Committee)	- Board Matters Forum "Top Priorities in Digitalization: the Next Move"	Ernst & Young Thailand	24 April 2018
	- Annual Forum 2018 "Winners and Losers in the Data Revolution Era"	Thammasat Economics Association	22 November 2018
Mr. Suthad Setboonsarng (Member of the Audit Committee)	- Seminar on "SME and Consumer Financial Solutions"	Bank of Thailand	19 - 20 March 2018
	- Boards that Make a Difference (BMD) #8/2018	Thai Institute of Directors Association (IOD)	19 - 20 November 2018
Mr. Ongart Auapinyakul (Director)	- Academy of Business Creativity (ABC) #8/2018	Sripatum University	August - November 2018

The Board of Directors also holds a joint meeting between independent directors and non-executive directors at least once a year to allow directors to freely express and discuss opinions relating to management. The Company Secretary is required to submit a summary report of these meetings to all directors.

In addition to the Board of Directors' meetings, the Board also requires a "Board Retreat" to be held annually to provide directors an opportunity to raise issues of interest, to express opinions or provide recommendations with the aim of improving teamwork among the Board of Directors and the management, and to plan administrative direction and a succession plan of senior management.

The Board of Directors requires the Board itself to be subject to a performance evaluation once a year. The Board started the individual director self-assessment in 2014. This duty is entrusted to the Corporate Governance and Nomination Committee.

The Board requires that the three sub-committees conduct their own self-assessment. The assessment forms are provided by the Corporate Governance and Nomination Committee, and each has the same standard. These forms focus on roles and responsibilities corresponding to each Committee's charter. The sub-committees have used the assessment forms as part of their performance report presented to the Board annually since 2012.

2. The Audit Committee consists of:

- | | |
|-----------------------------|---------------------------------|
| 1. Mr. Teerana Bhongmakapat | Chairman of the Audit Committee |
| 2. Mr. Rutt Phaniijphand | Member |
| 3. Mr. Suthad Setboonsarng | Member |

The current Audit Committee's term of office is three years, from April 2016 to April 2019. The Audit Committee

has knowledge and experience in accounting and finance. Mr. Rutt Phaniijphand, a member of the audit committee has a duty to review the Company's financial statements with his knowledge, expertise and sufficient experience.

In the 1/2018 Audit Committee meeting, held on 16 January 2018, Ms. Wiyada Wiboonsirichai was appointed as Secretary of the Audit Committee. This appointment has been effective since 16 January 2018. Ms. Wiyada Wiboonsirichai has more than 25 years of experience in managing and conducting professional internal audit in accordance with international standards. She is a Certified Public Accountant (CPA) with excellent understanding of the Company's operations.

Duties and Responsibilities of the Audit Committee

The Audit Committee has a duty to review the Company's financial statements, its adequacy of internal control and risk management systems, and compliance with applicable laws and regulations. The Audit Committee is also required to prepare a report or to give opinions to the Board of Directors for approval or for submission to the shareholders' meeting, as appropriate. (See more information in Banpu's website at www.banpu.com/subcommittees/)

3. The Corporate Governance and Nomination Committee consists of:

- | | |
|------------------------------|---|
| 1. Mr. Rawi Corsiri | Chairman of the Corporate Governance and Nomination Committee |
| 2. Mr. Sudiarso Prasetyo | Member |
| 3. Mr. Verajet Vongkusolkrit | Member |
| 4. Mr. Anon Sirisaengtaksin | Member |

The current Corporate Governance and Nomination Committee's term of office is three years, from April 2016 to April 2019.

Duties and Responsibilities of the Corporate Governance and Nomination Committee

According to its charter, the Corporate Governance and Nomination Committee has two major duties. Firstly, to review the Corporate Governance Policy and the Code of Conduct, and to monitor compliance with the policy and practices within Banpu's Code of Conduct. Secondly, to nominate directors and the Chief Executive Officer, to review a succession plan in order to nominate appropriate persons to fill the management positions (for department head level and higher) and to submit recommendations to the Board of Directors for approval or for submission to the shareholders' meeting, as appropriate. (See more information in Banpu's website at www.banpu.com/subcommittees/)

4. The Compensation Committee

consists of:

- | | |
|-------------------------------|--|
| 1. Mr. Rutt Phanijsaphand | Chairman of the Compensation Committee |
| 2. Mr. Buntoeng Vongkusolkrit | Member |
| 3. Mr. Teerana Bhongmakapat | Member |

The current Compensation Committee's term of office is three years, from April 2016 to April 2019.

Duties and Responsibilities of the Compensation Committee

The Compensation Committee's duty is to provide advice related to compensation management to the Board of Directors for approval or for submission to the shareholders' meeting, as appropriate. (See more information in Banpu's website at www.banpu.com/subcommittees/)

5. The Management* consists of:

- | | |
|---------------------------------|---|
| 1. Ms. Somruedee Chaimongkol | Chief Executive Officer |
| 2. Mr. Somyot Ruchirawat | Chief Operating Officer (Deputy Chief Executive Officer) |
| 3. Mr. Somsak Sithinamsuwan** | Chief Operating Officer - Coal Business |
| 4. Mr. Sutee Sukruan | Chief Operating Officer - Power Business |
| 5. Mr. Akaraphong Dayananda | Assistant Chief Executive Officer - Strategy and Business Development |
| 6. Mr. Varoj Limjaroon | Chief Human Resource Officer |
| 7. Ms. Udomlux Olarn | Senior Vice President - Corporate Affairs |
| 8. Ms. Arisara Sakoongaravek*** | Senior Vice President - Corporate Finance |
| 9. Mr. Jirameth Achcha | Senior Vice President - Corporate Services |

Note:

* Top executives are the next four executives after CEO.

** Mr. Somsak Sithinamsuwan was appointed as Chief Operating Officer - Coal Business, effective on 1 January 2019.

*** Ms. Arisara Sakoongaravek was appointed as Chief Financial Officer, effective on 1 March 2019.

Duties and Authority of the Chief Executive Officer

The Board of Directors sets operational goals for the CEO and evaluates her performance every year. The CEO then evaluates the performance of executive officers and senior executive officers by using goals and evaluation criteria linked closely with Banpu's strategic plan and annual operating plan and uses this information to set appropriate and attractive compensation packages and incentives. (For more information, please see 56-1 Form: CEO's duties and responsibilities)

6. The Independent Directors, who account for 33% of the Company's Board of Directors members, are as follows:

- | | |
|-----------------------------|----------------------|
| 1. Mr. Rutt Phanijphand | Independent Director |
| 2. Mr. Teerana Bhongmakapat | Independent Director |
| 3. Mr. Suthad Setboonsarng | Independent Director |
| 4. Mr. Sudiarso Prasetyo | Independent Director |

Banpu has defined the qualifications of "Independent Directors" according to the Notification of the Capital Market Supervisory Board No. TorJor.39/2559 dated 16 November, B.E. 2559. (For more information, please see 56-1 Form and the Notification of Capital Market Supervisory Board No. TorJor.39/2559 dated 16 November, B.E. 2559).

7. Company Secretary

The Board of Directors has appointed Mr. Virach Vudhidhanaseth as Company Secretary, whose duties and responsibilities are as stipulated in the Securities and Exchange Act (No.5), B.E. 2559, an amendment of the Securities and Exchange Act B.E. 2535. The Company Secretary is responsible for organizing meetings for the Board of Directors and shareholders, ensuring compliance with the meetings' resolutions and advising the Board on rules and regulations to which it must comply. Additionally, the Company Secretary is responsible for preparing and keeping the register of directors, Board meeting invitation letters, Board meeting minutes, the Banpu Annual Report, invitation letters to attend the shareholders' meeting and records of its minutes, the report on conflict of interest of directors or executive officers and other duties as required by the Capital Market Supervisory Board. (The qualifications of Company Secretary is stated in 56-1 report regarding the details of the Board of Directors and the Management.)

MARKET AND COMPETITION



Coal Business

Market and Competition

Coal Market

1. Global Coal Market

In 2018, the global thermal coal¹ market was highly volatile given uncertainty about government policy and government interference in some countries as well as the trade conflict among economic superpowers, raising interest rates and worries about regression.

Nevertheless, the demand for coal imports remained higher over 2017, particularly in China and India due to insufficient supply to domestic demand. There was also an increasing demand for coal in Southeast Asian and South Asian Countries, compensating decreasing demand in Europe. Meanwhile, major coal exporters could not increase sufficient output as some countries faced with unfavorable weather conditions, e.g., frequent heavy rains and a surge in domestic demand. Moreover, in the last few years, most of the producers did not invest to expand output, leading to tight supply and continued high coal prices toward the end of 2018.

Volatility in the global coal market in 2018 can be summarized as follows:

In early 2018, North Asia and Europe experience unusual cold weather, which hiked coal demand for power and heat generation, causing coal prices to stay high.

In February, warmer weather lowered demand for coal in Europe which led to increasing coal stocks at ports and power plants in Europe. Given the high supply and low prices in Europe, the gap between Asian and European prices were widened.

In March and April, coal production in China grew as a result of China's Supply-Side Structural Reform². However, coal demand dropped as the weather was getting warmer. These factors caused the coal stock at terminals and power plants to increase and coal prices in China to plummet. The Chinese government thus attempted to maintain the stability of domestic coal prices by cutting coal volume in the market to protect the domestic coal industry. The government has banned coal imports into Tier-2 terminals run by local governments since 13 April 2018, yet allowed those imports into Tier-1 terminals operated by the central government. Nevertheless, the market was not as the Chinese government had anticipated due to the tight supply since late April, which was caused by strict measure on the environment and safety in coal mines. China's import restrictions on coal led to a hike in domestic coal prices, urging many coal buyers imported coal from overseas fearing that the government would increase import restrictions. Meanwhile, demand for coal from Japan, Korea and Taiwan increased as there was a rising demand for coal stocks of the power plants in those countries to prepare for summer coal demand.

¹ The word "coal" in this section of report refers to "thermal coal."

² China's Supply-Side Structure Reform means a plan to reduce excessive coal supply in China by closing old and insufficient coal mines and developing new mines with higher production capacity and efficiency to replace some closing mines.

These factors sent global coal price to soar sharply and drove the spot market price of Australian FOB Newcastle Export Index³ up to its peak in six years at USD 123 per tonne in July.

Rising prices of premium coal reflected the tight supply of this coal type, which was driven by two major factors:

1. Strict environmental regulations in North Asian countries, which raised the demand for premium coal, and
2. Shutdowns of premium coal mines over the past few years due to depleting coal reserves and fewer opportunities to expand investment in premium coal mines because of limited coal reserves, lack of capital and fluctuation of coal prices.

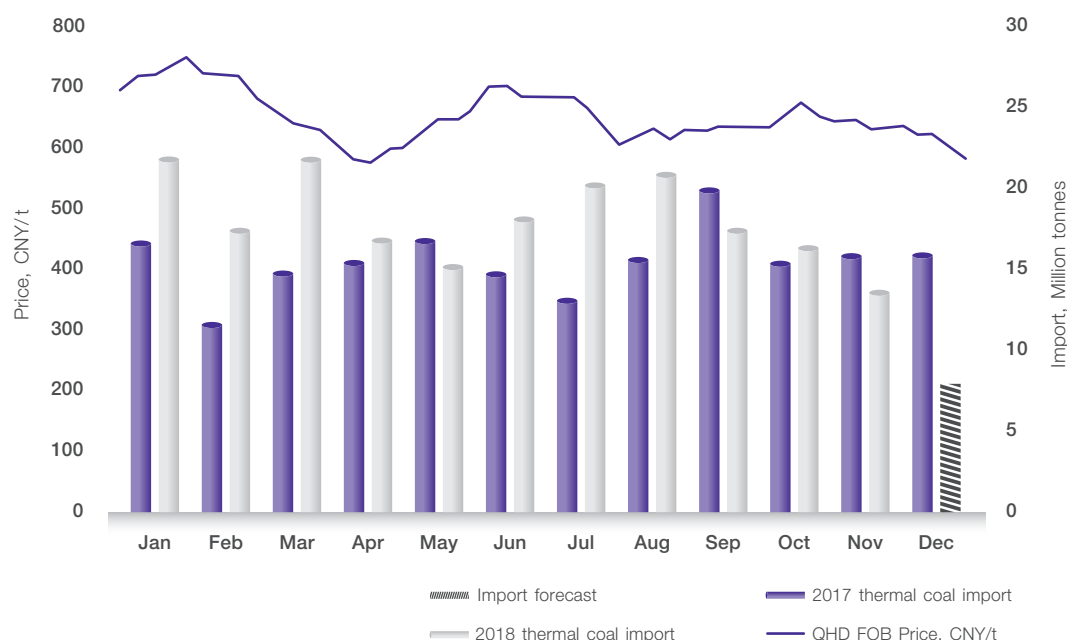
While demand for premium coal was tight, demand for lower quality coal was also affected by the Chinese

government's coal import restrictions, leading to a decrease in demand for low-quality coal. In Indonesia, there was a sharp increase in low-quality coal production, causing oversupply in the market. Global prices of low-quality coal began to drop in June, widening the price gap between premium coal and low-quality coal.

Premium coal prices began to fall in the third quarter after the nuclear power plants in Japan and South Korea restarted their operations. Moreover, restriction on power generation from coal-fired power plants in South Korea caused premium coal demand to drop. However, premium coal prices stayed high at USD 100 per tonne.

At year end, the weather in North Asia was not very cold, so demand for coal was not as high as projected. In addition, increasing coal production in China led to a sharp rise in coal stocks at China's power plants.

China Thermal Coal Import and Domestic Coal Price



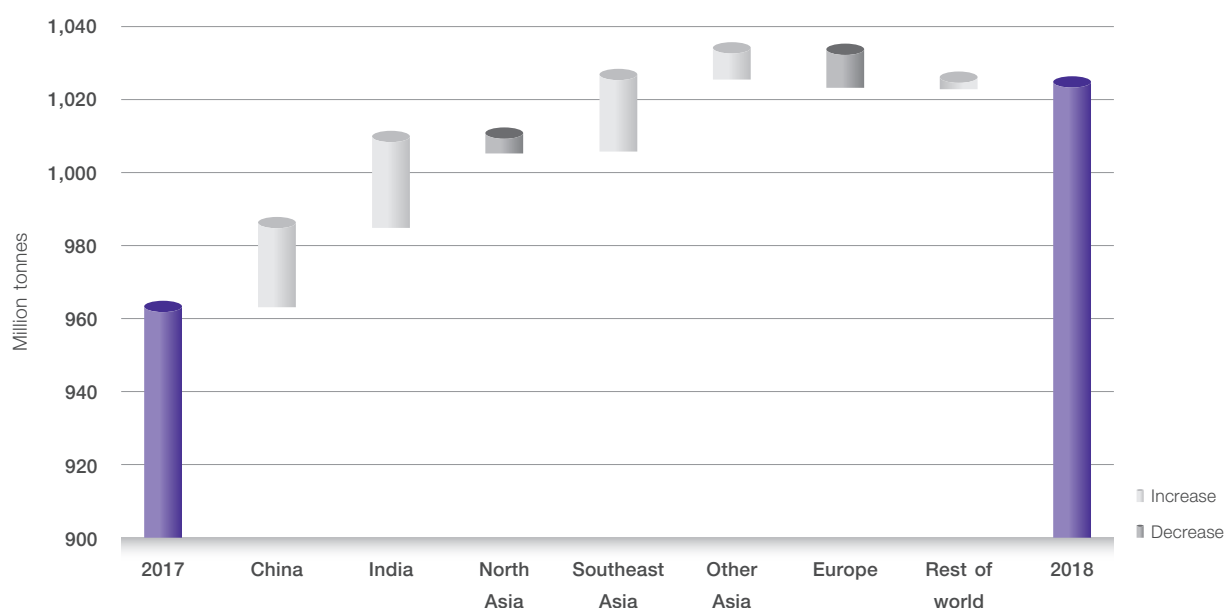
Source: IHS, Marketing, Sales and Logistics Analyst, Banpu Plc.

³ Newcastle Export Index means the spot market price of Australian FOB Newcastle for coal with Net Calorific Value (NAR) of 6,000 kilocalorie/kilogram.

The Chinese government issued strict measures to restrict coal imports in 2018 not to be higher than in 2017 and commanded the customs to cease custom procedures immediately if the coal terminals accepted the same import volume as in the previous year. This led to a plunge in China's coal imports in the last quarter and an oversupply of low-quality coal in the global market, which drove the low-quality coal prices down, especially from Indonesia, where low-quality coal prices plummeted closer to the production costs.

The U.S. and China trade war did not severely impact China's coal imports in 2018 since coal imports from the U.S. were less than 0.3% of the total imports.

2018 Thermal Coal Import Demand Changes



Source: Marketing, Sales and Logistics Analyst, Banpu Plc.

In 2018, India's coal imports were much higher than the previous year due to high economic growth and the government's policy to provide electricity for all households, while the ability to increase of domestic coal supply was slower than the increasing demand.

India's policy to expand power access to all households connected 24 million households to electricity in the last 15 months; people in 25 states have 100% electricity access, which resulted in an increase in coal demand for electricity generation. However, about 1 million households in five states still have no access to electricity.

In 2018, the Indian government restricted petroleum coke consumption; therefore India increased high-sulfur coal imports to replace petroleum coke. However, around year end the government relaxed the restrictions as ordered by the Supreme Court and permitted the use of petroleum coke in some industries such as cement industry, causing high-sulfur coal imports to drop in the future.

In October, India's Supreme Court permitted India's Electricity Generating Authority to increase tariffs according to the power purchase agreement with two private coal-fired power plants in Gujarat to compensate

for higher fuel costs. Accordingly, these two power plants were able to run more operations and use more imported coal after they had suffered continual losses due to mismatch between pricing strategy and changing fuel costs. The Supreme Court's order will be practice direction for tariff adjustment for other power plants facing the same problem, which will increase imported coal consumption for power generation in the future.

Japan's coal imports dropped from 2017 due to the restart of some nuclear power reactors and maintenance outage of coal-fired power plants.

South Korea has renewed its energy policy, shifting to clean and safe energy by planning to reduce coal and nuclear power generations and increase gas and renewable portfolios.

In 2018, many nuclear power plants in South Korea were temporarily taken offline for maintenance, forcing coal and gas-fired power plants to operate. Nevertheless, air pollution caused the government to formulate various measures to tackle the problem such as limits on coal-fired power plants operations, restrictions on annually average sulfur levels in coal, which is not to exceed 0.4% and increase in coal tax. Consequently, major coal-fired power plants had to adapt their coal purchase behavior to government policy. Moreover, from March to June, the South Korean government ordered old coal-fired power plants with a total capacity of 2.32 GW to halt operations.

Taiwan also suffered from air pollution; therefore, the Taiwanese government issued a measure for power plants to limit the use of coal that produces fly ash. Meanwhile, some local governments restricted power plants' annual coal consumption, causing those power plants to shift to coal that has a high heating value to maximize power output.

The fact that major coal consumers in North Asia shifted to higher quality coal has prevented low-quality coal from entering this market, leading to a tight supply of premium coal.

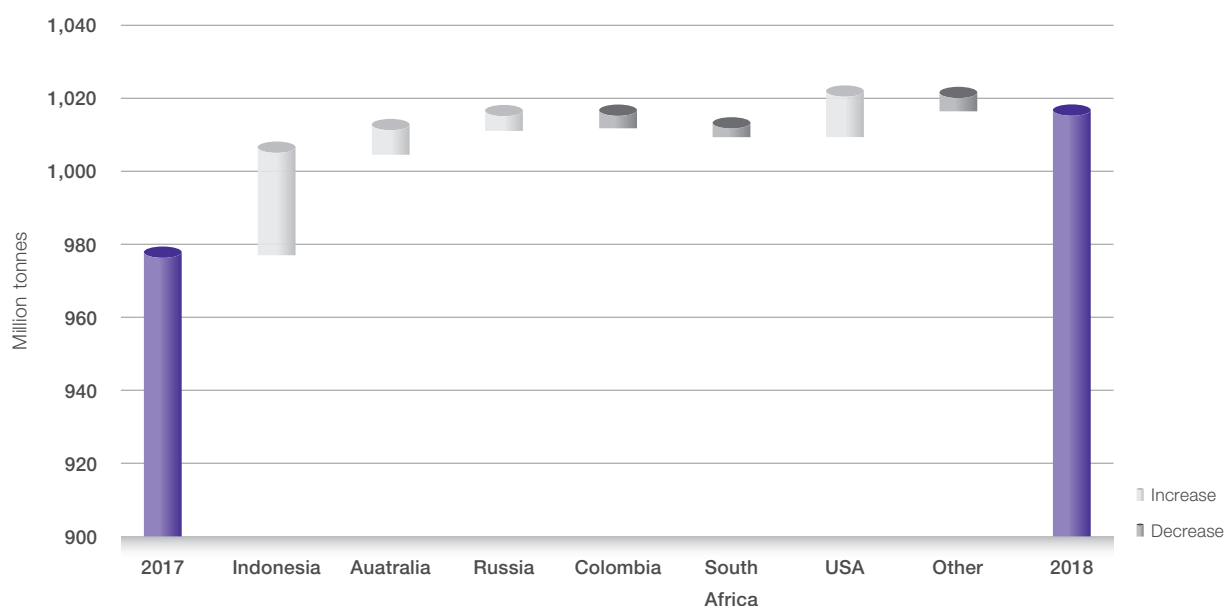
In 2018, the European coal market shrunk due to mild winter and the increase in a number of renewable power plants in almost all European countries while a number of nuclear power plants in France also increased. Furthermore, decreasing natural gas prices caused coal-fired power generation to drop. However, from the third quarter to the mid-fourth quarter of 2018, natural gas prices hiked along with oil prices. As Europe got warmer in the summertime, increasing coal-fired power generation pushed coal prices up.

Despite increasing coal demand in Europe, there were difficulties for coal transportation from terminal stockyards to power plants. Coal terminals could not accept additional coal stocks as they have reached their full capacity. In addition, the low water levels in the Rhine River between October and November became a barrier against the coal import, thus, reducing sales volume even further. Meanwhile, natural gas prices dropped along with oil prices together with an increasing gas supply, leading to a drop in coal price around year end.

The European Union (EU) member countries have committed to the mission to reduce carbon dioxide (CO₂) emissions following the Paris Agreement, they all came up with a particular plan to cut down on CO₂ emission as well as Coal Phase-Out Plan. In the draft version of the Coal Phase-Out Plan, some EU member countries will end the use of coal for power generation by 2025 while other countries will need a longer time frame. However, all European countries share the same policy framework to cut down on coal consumption in the future.

For the export market in 2018, there were only Indonesia and the U.S. which could substantially increase the volume of coal exports to satisfy the rising demand. Other major export countries could not much increase their exports while some countries even exported less coal than the previous year.

2018 Thermal Coal Export Supply Changes



Source: Marketing, Sales and Logistics Analyst, Banpu Plc.

Although there were rainfalls in the first half of 2018, they were not as heavy as in the previous year and did not have much effects on coal producers. Better still, Indonesia has no restriction about the infrastructure of domestic coal transportation as waterway is the main transportation. There is no need to invest in rail transportation. Furthermore, there is flexibility in finding contractors and machinery for producing coal, which helps enable capacity expansion in order to respond to rising global demands.

The U.S. coal demand has decreased because coal-fired power plants were retiring while coal stocks remained high since the past year. Coal producers then increased export volume from the stocks left over to satisfy the global demand.

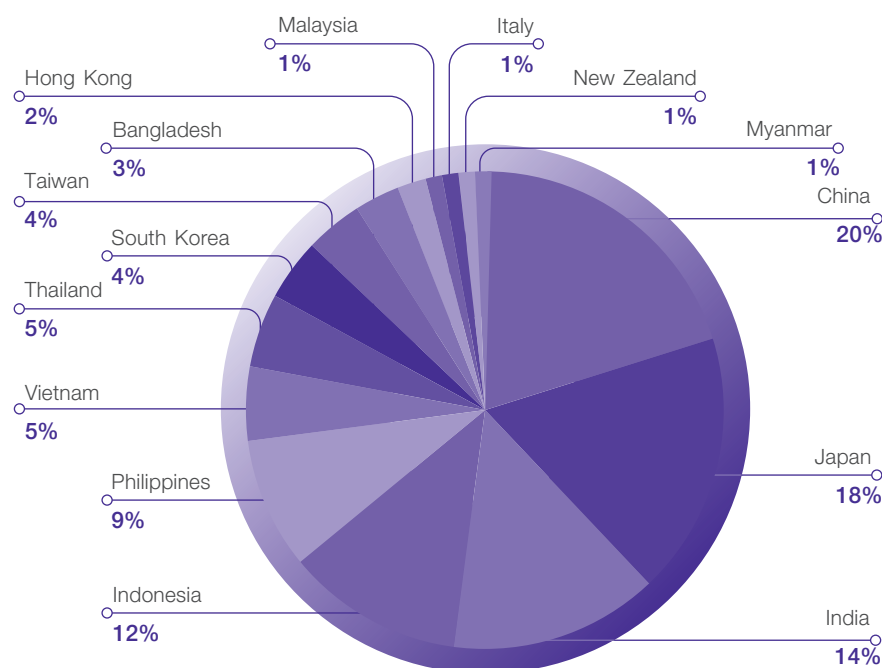
While other coal-exporting countries suffered from the decline in coal reserves and lack of investment to improve production capacity, resulting in the inability to increase output to satisfy rising demands. Heavy rainfalls in Colombia between April - July, and October - December, which is a rainy season, hindered coal production. There were also other difficulties barring producers from increasing outputs. For instance, a

problem of environmental license affected the mining plan, delayed investment in mining machinery for new mines while some producers were during the negotiation of property sales and some facing problems from rail transportation of coal.

Russia has difficulties about rail transportation of coal and cargo loading which hinder its coal export to the Asian market. South Africa has a coal reserve problem because its premium coal reserves have depleted, forcing producers to export low-quality coal instead. Altogether, a surge in domestic demand, rainfalls and storms at the coal terminal and management issues at some mines led to the decrease in coal outputs and exports from South Africa.

Apart from problems concerning geographic origins of coal products in the past few years, premium coal mines have suffered from depleted coal reserves, leading to a tight supply of premium coal. In addition, many mines continue to produce low-quality coal to substitute for premium coal. This results in tight premium coal supply, which is anticipated to remind for many years ahead.

Percentage of 2018 Volume by Country



In 2018, the Company sold Indonesian coal at the amount of 24.1 million tonnes, increasing 3.8% over the past year. The Company's export to China is the largest share of 20%, despite the government's restrictions on coal imports, followed by Japan and India, of 18% and 14% of export respectively. In terms of export growth, the Company increased exports to India by 36% from last year as India is the fast-growing market.

In 2018, the Company focused more on Vietnam because the demand for coal imports grew fast after new power plants achieved commercial operation dates. Its coal exports to the Vietnamese market succeeded tremendously with a total volume of 1.2 million tonnes, or 951% increase from last year.

Apart from that, after the Company began selling coal in Myanmar leading to the aggregate sales volume in the Southeast Asian market rose by 8% over the past year.

2. Coal Market in Republic of Indonesia

Coal production in Indonesia in 2018 continued to increase for three consecutive years due to rising global demand for coal imports, particularly from China and India. Overall, annual coal production in Indonesia was at approximately 535 million tonnes, increasing 6.1% over the previous year.

In 2018, Indonesia's coal exports were up to approximately 420 million tonnes, rising 7.2% over 2017 and accounted for 78% of the total coal production in Indonesia. Major coal importers are India, China, Japan, South Korea, Taiwan and South-East Asian and South Asian countries.

Indonesia's coal demand in 2018 was approximately 115 million tonnes, a 10.6% rise over the previous year, due to a growing number of power plants. Over 80% of the demand was from the power sector, about 10% was from the cement industry, and the rest was from other industries.

Banpu's coal sales in Indonesia were 2.8 million tonnes, 12% of Banpu's total coal sales or 2.4% market share of Indonesia's coal demand. Major buyers were coal-fired power plants, who accounted for 63% of the total sales. The rest was sold to metal, cement, paper and other industries at 16%, 11%, 4% and 6%, respectively.

The Indonesian government capped the price of domestic coal for coal-fired power plants at USD 70 per tonne, the FOB coal price for the coal with a gross calorific value (GAR) of 6,322 kcal/kg, effective from 12 March 2018 to 31 December 2019. Coal producers have to sell coal to power plants at the Indonesian coal reference price (HBA), but not exceeding USD 70 per tonne. However, the reference price stayed higher than USD 70 per tonne over the past year, pulling the price sold to power plants lower than export price and the price sold to other industries.

The Indonesian government has enforced a stricter law entitled Domestic Market Obligation (DMO), which requires coal producers to supply at least 25% of their output to domestic customers. Any mine which fails to comply with the law will result in reduced quotas for mining production in the following year. However, the government allows coal producers whose sales volume to domestic customers is higher than minimum quota to sell the surplus quota to producers whose domestic sales volume is below the minimum quota. This exception is designed to help producers whose quality of coal does not meet the requirements of the domestic market and cannot sell coal to domestic customers as required by the law.

The Indonesian government expected coal producers to increase additional production outputs by 100 million tonnes to the earlier approved amount of 485 million tonnes to increase coal export volume and revenue in US dollars to prop up the weakening Indonesian Rupiah. The production increase quota would be awarded to producers who had met the

25% Domestic Market Obligation in the first half of 2018. There were 18 successful producers who could increase their output by 10% of the approved annual quantity. Altogether, they were permitted by the government to increase production outputs by 22 million tonnes, resulting in the approved total outputs of 507 million tonnes. However, the actual amount of outputs were far more than the government-approved quota due to a surge in the global demand for coal.

In 2018, the Indonesian government postponed the enforcement of laws requiring that all barges used for coal transportation must be registered in Indonesia and to be insured by insurance companies which registered in Indonesia. The postponement resulted from a lack of readiness in the practical procedures and insufficient barges registered in Indonesia. The law requiring barges to be insured by Indonesian companies will be postponed until 1 February 2019 while the law requiring coal barges to be registered in Indonesia will be enforced in 2020.

3. Coal Market in Thailand

In the first 11 months of 2018, the private sector's total coal consumption was approximately 22.5 million tonnes, or a 1.6 million tonnes increase year-on-year. The largest coal consumer was the cement industry, accounted for approximately 37% or the 8.4 million tonnes coal consumption in the private sector, increasing 0.7 million tonnes year-on-year, thanks to economic growth and the rising demand for cement in accordance with the growing number of the public sector construction projects. However, there was fierce competition in the cement industry due to oversupply; therefore, customers prioritized cost reduction, especially on coal costs.

Independent Power Producer (IPP) is the second largest group of coal consumers next to cement industry whose consumption in the first 11 months of 2018 was at 5.74 million tonnes, increasing 0.36 million tonnes year-on-year.

Small Power Producer's (SPP) coal consumption in the first 11 months of 2018 was at 2.38 million tonnes, an increase of approximately 0.49 million year-on-year.

Strong growth in coal imports by cement industry, IPP and SPP was driven partly by the recovery in the production of the industrial sector and from the delayed import of coal in the past year due to high global coal price, leading to restocking in 2018.

Competition

1. Competition in the Coal Industry

The coal market in 2018 can be apparently divided into 2 segments according to coal quality as follows:

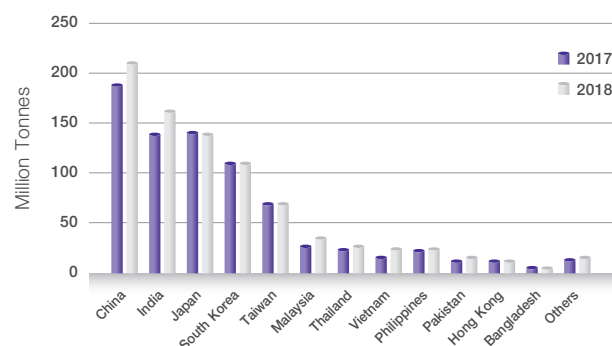
- 1. Premium coal** is the type of coal with the high calorific value which is in stable demand, especially in the North Asian market, while the supply has been limited in the past few years because some producer mines have gradually closed down or shifted towards producing lower quality coal due to limited reserves. This caused the tight supply, so the competition in this market was mild. Premium coal prices stayed high for most of the year despite the highly volatile market.
- 2. Low-quality coal** is the type of coal with a lower calorific value which was affected by China's policy to restrict coal imports, leading to falling demand for imports, especially around year end. On top of that, the surge in low-quality coal production in Indonesia caused the oversupply situation and stronger competition in the market, resulting in the plunge of low-quality coal prices at year end.

The global demand for coal imports in 2018 grew strongly with an increase of 61 million tonnes, or 6.3%, for the total import volume of 1,025 million tonnes. By distribution, the Asian countries imported 81% of sea-transported coal with a total volume of 829 million tonnes, increasing 9.2% from the previous year.

In 2018, China imported approximately 208 million tonnes of coal, increasing 11.5% from the previous year, despite the Chinese government's stricter restrictions on coal imports and domestic production due to insufficient coal stocks. The insufficient supply also resulted from old mine shutdowns according to China's Supply-Side Structural Reform as well as under-capacity operations of some mines which were subject to mining safety assessment. However, in the last quarter of 2018, an economic slowdown and mild winter in China led to lower coal demand than projected. Growing domestic coal production led to oversupply, tougher competition and falling domestic coal prices. Moreover, the Chinese government exerted stricter control on coal imports, causing coal imports to plummet in November and December. However, these factors made the competition in the global market became stronger, especially in the low-quality coal market in Indonesia where there was dramatic increase of coal production.

In 2018, India's coal imports were approximately 161 million tonnes, increasing 17.6% from the past year due to high economic growth and insufficient domestic supply. The majority of coal imports were low-quality coal from Indonesia, South Africa, the U.S., Australia and Russia respectively. The competition in the Indian market became fierce since there were too many traders and most of their coal were of the oversupply types.

Asian Thermal Coal Import by Country



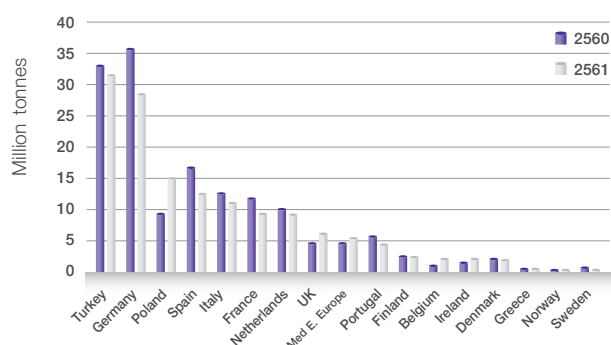
Source: Marketing, Sales and Logistics Analyst, Banpu Plc

In 2018, North Asia imported approximately 313 million tonnes of coal, slightly decreasing from the past year, due to the operation increase of nuclear power plants in Japan. Also, the governments of Japan, South Korea and Taiwan placed greater importance on environmental preservation, especially South Korea and Taiwan, which have suffered air pollution. These countries require that coal used in power plants must be of higher quality and limit the amount of coal use. This maintains the demand of premium coal in high level. The competition of prices in the North Asian market is mild due to limited premium coal reserves. Exporters from Russia, the U.S., Canada and Colombia also increase their premium coal sales in this market. Meanwhile, coal imports from Australia and Indonesia decreased because buyers wanted to buy from diverse sources to increase bargaining power. Also, the premium coal production in Indonesia decreased due to depleting coal reserves.

In 2018, coal imports in Southeast Asia saw a dramatic surge, growing from the previous year by 20 million tonnes, or 24.2%, after new power plants in Malaysia and Vietnam achieved commercial operation dates. The competition in the market was fierce since most of the coal in the market was low-quality coal and yet with huge outputs. Moreover, there are a lot of producers in Indonesia, which is a major coal producer. The oversupply of coal in the Indonesian market led to fierce competition.

In 2018, Europe's coal imports dropped 6.5% from the past year. Coal imports into Germany, Spain and France plunged due to falling natural gas prices, more renewable power generation and mild winter. These factors led to a slight increase in power demand. In addition, low Rhine water levels impacted coal import delivery in Germany. Meanwhile, coal supply accumulated in Europe leading to oversupply and stiff competition. Coal producers responded to the problem by exporting more coal to the Asian market to offset declining demand in Europe.

European Thermal Coal Import by Country



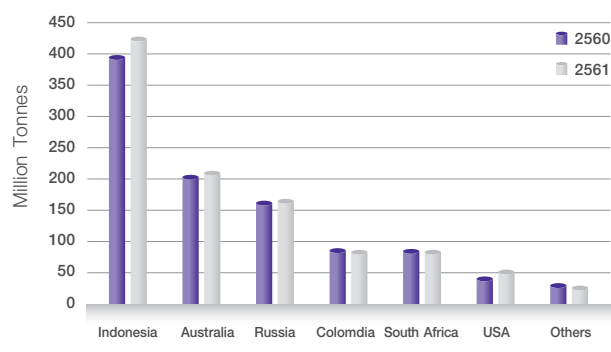
Source: Marketing, Sales and Logistics Analyst, Banpu Plc.

In 2018, the global export volume totaled 1,017 million tonnes, increasing around 4% from the past year, mainly driven by Indonesian and the U.S. exports because other major exporters could not increase enough outputs to satisfy the global market due to lack of investment to increase production capacity in the past few years.

Indonesia's coal exports were approximately 420 million tonnes, or a 7.2% increase from 2017, as Indonesian producers were motivated to increase production capacity by high coal prices and greater demand for coal in Asia. However, the majority of coal from Indonesia was of low-quality type, leading to an oversupply of low-quality coal and high competition among coal traders.

Australia is the second largest coal exporter next to Indonesia, whose 2018 exports amounted to approximately 206 million tonnes, a 3% increase from last year. In the past few years, although Australia slightly increased its coal production capacity, major producers have tried to buy off reserves of premium coal from other producers increase from the past year. Accordingly, premium coal reserves are now under the control of fewer producers than in the past, leading to less competition in the premium coal market. To reduce the monopoly of major Australian coal producers, major buyers of premium coal in North Asia tried to import more from other countries.

Global Thermal Coal Export by Country



Source: Marketing, Sales and Logistics Analyst, Banpu Plc.

Russia exported approximately 161 million tonnes of coal to Non-CIS countries in 2018, a 2.6% increase over the past year. The country tried to export more coal to Asia to offset the shrinking demand from the European market but the lacking capacity of rail transport and ship loading at coal terminals, which sorely needs more investment to expand the capacity, limited the increase of coal exports from Russia to the Asian market.

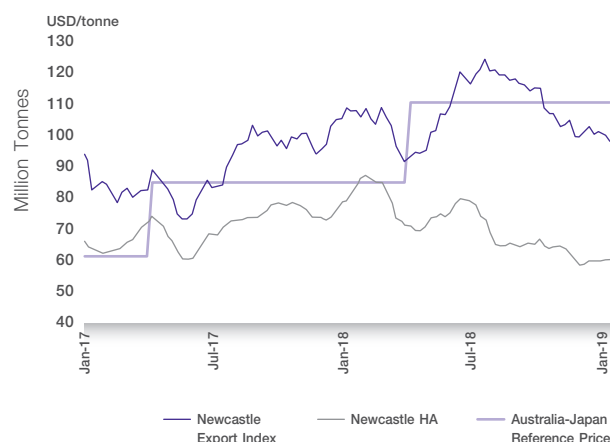
The U.S. coal exports in 2018 were approximately 48 million tonnes (excluding export to Canada), soaring 30.8% over the past year, driven by high global prices prompting the U.S. producers to increase export volume. However, the limitations in capacity of transportation and cargo loading, plus higher sulfur content in the U.S. coal, hindered the U.S. export growth in the Asian market.

Colombia exported 80 million tonnes of coal in 2018, a 3.8% drop from the past year due to heavy rainfalls disrupting the production. The country tried to export more coal to Asia to offset the shrinking demand from the European market.

South Africa's coal exports totaled 79 million tonnes, decreasing by about 3.1% year-on-year. In fact, the volume of premium coal exports from South Africa continued to fall due to the lack of investment in coal mining in the past few years. In 2018, South Africa exported less premium coal with a proportion of 15%

out of the total volume of coal exports. Coal producers needed to export lower quality coal instead of premium coal to comply with the coal transportation agreements with terminals. Meanwhile, the demand for coal in South Africa grew, leading to insufficient coal supply for power plants because South African Electricity Authority did not invest in coal mines to respond to rising demands while some mines suffered production setbacks. All these factors led to tight supply and motivated the South African Electricity Authority to buy coal in spot markets and pushed coal prices up almost the entire year.

Thermal Coal Export Price, FOB



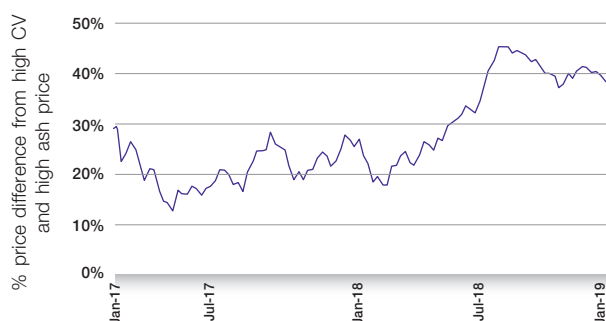
Source: IHS

Coal prices in 2018 highly fluctuated based on economic situations and other energy prices. Overall, the global price of premium coal remained high with the average price at Newcastle Port (Newcastle Export Index) at USD 107 per tonne. Even buyers from Japan, the co-determiner of the Australia-Japan Reference Price for delivery in 2018 (April 2018 - March 2019), could not come to an agreement with major coal producers in Australia because of highly volatile coal prices, causing a wide gap between sales and purchase prices. However, Asian buyers used another reference price that was agreed upon by Japanese buyers and major Australian producers. This year's reference price was USD 110 per tonne, increasing by 29% over the past year.

While premium coal prices stayed high, low-quality coal prices plunged due to the sharp increase of production outputs from Indonesia and import cut to the Chinese market. At year end, the coal price at Newcastle Port (Newcastle HA⁴) was 40% lower than the premium coal price.

The trend of coal demand in 2019 is expected to grow slightly driven by demand in India and developing countries in Asia. On the contrary, the European demand is expected to drop due to the policy to reduce coal consumption. There is also a higher risk of an unstable economy. Market competition in 2019 will get fiercer, with premium coal enjoying lower competition than low-quality coal due to tight supply. The demand for premium coal in Asia is projected to stay high, and there will be a slight increase in premium coal production in Australia and Indonesia. As premium coal production in Australia is under the control of a few producers, they are able to control the amount of coal in the market and are influential over the global coal price. However, the fact that more premium coal from Russia, Colombia and the U.S. can enter the Asian market helps stabilize the global coal prices.

Discount Gap between High CV and High Ash Coal Price



Source: IHS

For low-quality coal, the competition is expected to be tough because there are many producers and output is much higher than market demand, especially output from Indonesia. Nevertheless, around year end, the low-quality coal price became so low that it reached the cost of Indonesian producers. Hence, it is projected that the price would not drop further. In fact, China's demand for coal imports is expected to recover in early 2019. This may raise the prices of low-quality coal.

The competition of the European coal market is expected to become tougher because natural gas prices are likely to drop and will prompt more gas-fired power plants to resume operations while the coal demand was declining. Further still, the European environmental policy to reduce carbon dioxide emissions will urge the European countries to shift towards more renewable power generation and less coal consumption.

Coal production in Australia is anticipated to increase slightly in 2019 thanks to new mines' premium coal production for the market. Russia and Colombia will export more coal to the Asian market as European demand subsides. Premium coal prices are expected to remain high enough to allow Russia and Colombia to penetrate the Asian market; otherwise, there will be a tight supply in Asia. South African coal exports will grow slightly except for premium coal due to limited production. Similarly, Indonesia will increase its output of which is mostly low-quality type.

Investment in new coal mines is scarce because many financial institutions have cut off funding for coal while the development of new coal reserves is limited by more stringent environmental policies, and there are more social concerns.

⁴ Newcastle HA means the spot market price of Australian FOB Newcastle for coal with Net Calorific Value (NAR) of 5,500 kilocalorie/kilogram.

2. Competition in Thailand

The coal demand from the private sector in Thailand for the first 11 months of 2018 was at 22.5 million tonnes, increasing by 1.6 million tonnes year-on-year, most of which were imports. The total coal imports for the first 11 months of 2018 amounted to 22.1 million tonnes, increasing by 1.6 million tonnes year-on-year. The domestic coal production outputs in the first 11 months of 2018 were 0.4 million tonnes, equally the same year-on-year, due to limited production capacity. The competition was thus in the market of coal imports, and it became fiercer as there were numerous competitors, most of whom are coal importers and traders.

The total amount of coal imports in the first 11 months of 2018 was 23.4 million tonnes, higher than the actual consumption of about 1.3 million tonnes. The increase in import volume is partly lifted by delayed imports in late 2017 due to high prices, which prompted customers to use coal from their stocks. There were more imports on restocking demand and high coal consumption in all industrial sectors. In addition, the plunge in coal prices around year end prompted coal users to stock more coal.

Target customers of coal traders are cement industry, small power producers (SPP), pulp and paper industry, petrochemical industry and small-scale users. In contrast, independent power producers (IPP) usually have long-term purchase agreements with foreign coal producers and are not major customers of coal traders because IPPs rarely buy coal in spot markets.

Coal demand in 2019 is expected to be at the same level as in 2018 due to an economic recession. The competition will be tougher in the coal market as there will be an oversupply of low-quality coal in the Indonesian market. Coal users in Thailand are highly flexible regarding the quality of coal, which allows coal traders to have more options in sourcing coal. However, the coal market is projected to be highly volatile due to policy uncertainty, trade war, economic recession and energy price volatility.

Competitive Strategies

Uncertainty in geopolitics, a U.S.-China trade war, rising interest rates and anxieties over the looming economic slump have contributed to fluctuations in commodity prices, which energy prices are included. The Company has devised a set of competitive strategies to steer its business through the fast-changing market conditions as follows:

1. Market Share

The Company focuses on increasing market share in the segment which is sensitive to quality because it is where a high price is willingly paid to get the required quality of coal which ensures reliable delivery. Since the Company has its own coal reserves, it can secure the production plan and control coal quality to satisfy the needs of customers in this market segment.

Apart from that, the Company aims to increase sales volume in the price-sensitive market because it is where different qualities of coal can be sold. The Company has advantages of owning coal terminals for exclusive cargo loading and spacious stockyard perfect for coal-blending to improve coal quality and reduce costs to meet the market demands and required quality.

The Company reduced sales volume of low-profit-margin coal whose quality was improved by blending with coal bought from external sources.

2. Product Development

The Company purchased coal from external sources for use in the quality improvement of its coal which has a low-profit-margin in order to increase the profit margin and to deliver coal that meets the target market's needs.

3. Market Expansion

The Company expanded coal sales into the Vietnamese and Bangladesh markets. Also, the Company entered into Myanmar in 2018 for the first time to broaden its customer base in the Asian region.

4. Security in Delivery

The Company has its own coal mines and coal terminals, a vast coal stockyard at the terminals and technological applications to monitor coal production and quality from mining to loading coal at the terminals for delivery to customers. All these factors allow the Company to accurately prepare stocks for customers both in terms of quantity and quality, which makes the Company a highly reliable coal producer and distributor.

5. Coal Trading

The Company focused more on coal trading by reselling coal from external sources to cater to the fast-growing demand in the Asian market. Capitalizing on its strength in the marketing channel, the Company traded coal from several sources to expand its customer base and to prepare for the growth of its future coal reserves.

Major Competitors

The Company's major global competitors are major coal producers from Indonesia, Australia, Russia, the U.S., South Africa and Colombia, namely Glencore, Yancoal, PT. Bumi Resources Tbk, PT. Bukit Asam Tbk, PT. Adaro Indonesia Tbk, PT. Kideco Jaya Agung, PT. Berau Coal Energy Tbk, PT. Golden Energy Mines Tbk and SUEK. The Company also have a lot of competitors who are small coal traders and producers.

The Company's competitors in Thailand are coal traders because the majority of coal used in Thailand is imported coal, so the market is easily accessible to new traders. However, major competitors remain the old-time traders, namely SCG Trading Co., Ltd., Lanna Resources Plc., Asia Green Energy Plc., and

Eastern Pearl Co., Ltd. Moreover, there were foreign traders and coal producers from Indonesia who also compete in the market of major buyers.

Pricing Policy

The Company's coal prices are determined based on global coal prices at the time of offering and adjusted to the actual quality of coal but shall not be lower than the Indonesian government's reference coal price. In 2018, the Company increased index-linked sales in order to realize the coal prices in the global market. The fixed price method is used with short-term sales in which delivery occurs shortly after the price negotiation is settled. For coal sold to power plants in Indonesia, the government's reference price shall not exceed USD 70 per tonne for coal with gross calorific value (GAR) of 6,322 kcal/kg. Coal sold to other industries in Indonesia will be based on the reference price set by the Indonesian government, but the actual sales prices depended on the actual quality of coal.

Customer Profiles

The majority of Banpu's customers are major power plants in Japan, South Korea, Taiwan, China, India, the Philippines, Malaysia, Indonesia and Vietnam. The second larger buyers are cement and pulp and paper industries. Most of these companies need coal for their operations all year long. They usually buy coal through bidding contracts, both short-term and long-term, and sometimes from spot markets.

Distribution and Distribution Channel

The Company has delegated BMS Coal Sales Pte. Ltd. (BMSCS), its subsidiary located in Singapore, to operate coal trading and marketing activities for coal

from Indonesia and Australia. BMSCS is also in charge of sourcing coal from external sources for further sales to customers. The majority of sales are direct offers to coal customers. BMSCS is responsible for market search, sales offers, bidding and negotiation with customers as well as coordinating with customers about ship transport and after-sales services, enabling the Company to efficiently focus on customers and market expansion.

Natural Gas Business

Market and Competition

In 2018, the U.S. had a high demand for natural gas, which is a major fuel for power generation in the country. Power generation from natural gas constitutes 30%, which is a little higher than from coal. In fact, the overall natural gas demand has significantly increased, lifted by the growing demand from the power generation business, natural gas exports to Mexico, natural gas exports to the global market in the form of Liquefied Natural Gas (LNG) and substitution of natural gas for coal due to the continued shutdowns of coal-fired power plants in the U.S.

On the supply side, Marcellus and Utica shale plays are the major natural gas reserves at present and in the future. It is projected that about 40% of the U.S. natural gas production capacity will be from the two reserves in the next five years.

Competitive Strategies

On the investment side, the Company has invested only in the upstream business. Natural gas output will be transmitted through transmission pipelines to domestic buyers to satisfy natural gas demand in the U.S. market.



Power Business

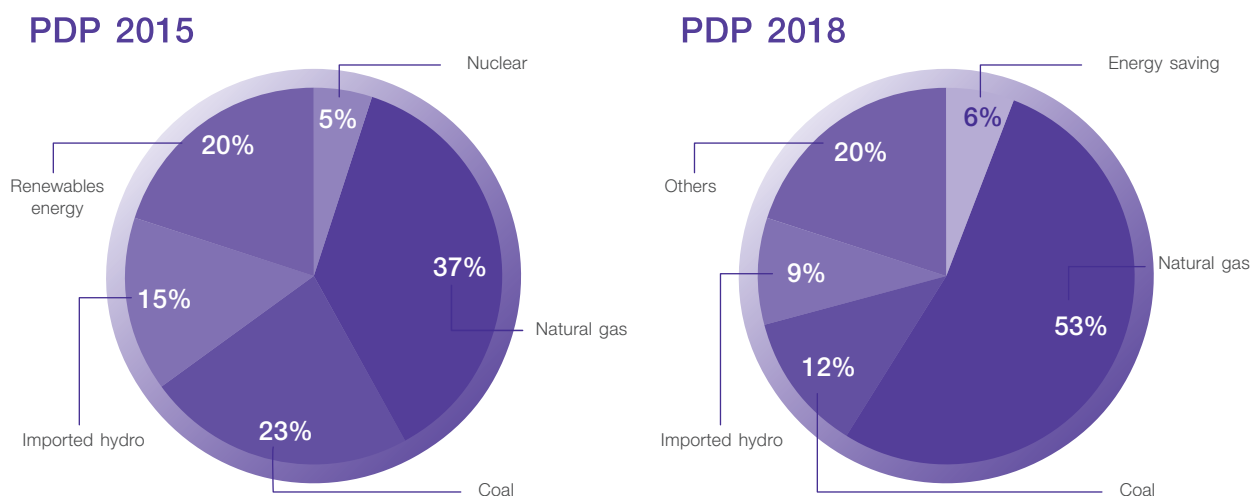
Banpu Power Public Company Limited is a Banpu's subsidiary operating both conventional and renewable power generation businesses across Asia, including in Thailand, Lao PDR, China, Japan and Vietnam.

Market and Competition

1. Market and Competition in Thailand

In 2018, Thailand had a total installed generating capacity of 43,275 MW, increasing 2% from 2017. The demand hit its peak in May at 28,338 MW, 240 MW or 0.8% lower than the peak demand in 2017, which was at 28,578 MW. The Electricity Generation Authority of Thailand (EGAT)'s gross energy generation and purchase in 2018 was at 187,885 GWh, or an 8% increase over the previous year, due to incentives to encourage business activities in public and private sectors. Power generation ratio by energy sources are: natural gas 58%, coal 18%, hydro-power 3%, imports 11%, renewables 10% and oil 0.1%.

Comparison of the National Power Development Plan (PDP 2015) and a New National Power Development Plan 2018-2037 of Thailand (PDP 2018)



Source: Department of Energy Business: DOEB, Ministry of Energy

The progress of the draft of a new national Power Development Plan (PDP) 2018-2037 is that the Energy Policy and Planning Office (EPPO) approved the draft, and it is currently being proposed to the cabinet for approval. Thailand's power generation ratio by energy resources in 2037 is expected to rely on natural gas 53%, reduce coal usage to 12% and import power 9%. In 2037, the total installed generating capacity is expected to be 77,211 MW.

2. Market and Competition in People's Democratic Republic of Laos

Lao PDR is distinct from other Southeast Asian countries as it has no oil and gas, and limited coal reserves; its power generation relies solely on hydro-power. However,

the situation started to change in 2016 when the Hongsa Power Plant, the first coal-fired power plant in the country, commenced its full operations. However, there is no plan for further construction of a coal-fired power plant between 2016 and 2020 due to the scarcity of coal reserves.

In 2018, Lao PDR had 6,983 GWh of its highest generating capacity which increased 27% comparing to 2017. However, Lao PDR remains the major power exporter in the region. Lao PDR has entered into an international power purchase agreement to sell electricity of 9,000 MW to Thailand, 5,000 MW to Vietnam and 200 MW to Cambodia within 2025.

3. Market and Competition in the People's Republic of China

In 2017, the energy industry in China has shown growth in power consumption as follows:

	Units	2018	2017	2016
Growth rate of power consumption in all sectors	%	8.5	6.6	5
Growth rate in generating capacity	%	6.3	7.1	8.2
Total generating capacity	MW	1,906,215	1,793,979	1,677,123

Source: National Energy Administration (NEA) of the People's Republic of China

4. Market and Competition in Japan

The energy industry in Japan has shown growth in power consumption as follows:

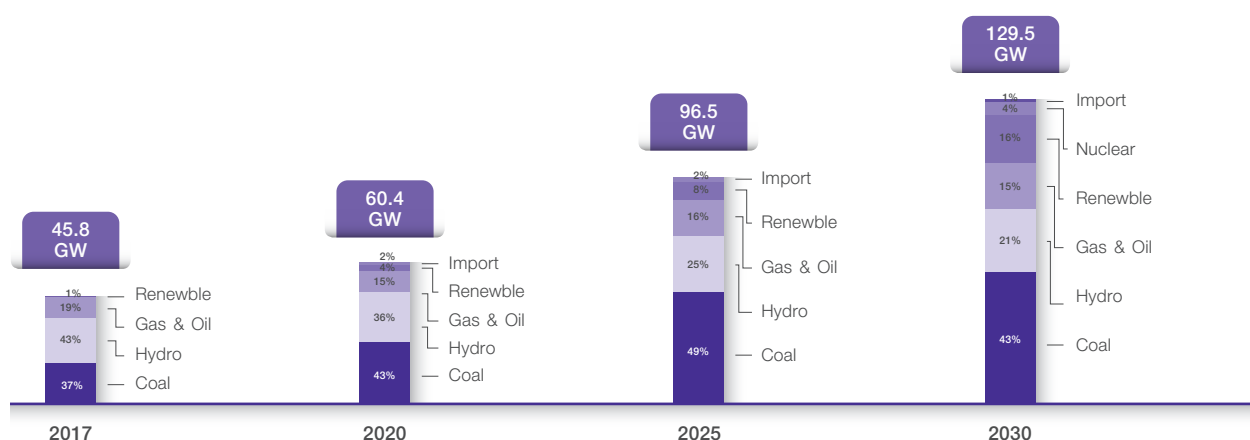
	Units	2018	2017	2016
Growth rate of power consumption in all sectors	%	1.4	1.7	1.2
Growth rate in generating capacity	%	4.9	2.8	4.9
Total generating capacity	MW	288,957	275,480	268,082

Source: Ministry of Economy, Trade and Industry (METI)

5. Market and Competition in the Socialist Republic of Vietnam

Vietnam's National Power Development Plan mentions the usage of coal as a main source of power generation. In 2030, coal will be 43% of the total power generation capacity. There will also be an increase of renewable portfolio, including wind power, solar power and biofuel, from 1% in 2017 to 16% in 2030. The total installed generating capacity in 2030 is expected to be 129.5 GW.

Energy Consumption in Vietnam



Competitive Strategies

1. Competitive Strategies in Thailand

Banpu Power has 50-percent shareholding in BCP Power Limited, a major power producer who sells electricity directly to Electricity Generating Authority of Thailand (EGAT) with the capacity of 1,434 MW and 97-percent dispatch rate in 2018, reflecting the plant's reliability in electricity generation and ability in operational readiness management.

Competitive Strategies

1. Maintaining Efficiency and Operational Readiness of Power Plants

Banpu Power, a subsidiary of Banpu, periodically improves the efficiency of power plants and maintains readiness of equipment according to the maintenance plan to ensure the Availability Factor (AF) and Contracted Available Hours (CAH) of 89%.

2. Seeking Opportunities for Business Expansion

Banpu Power has always been on the lookout for growth opportunities by aligning the plan to expand domestic power business with the national Power Development Plan for 2018-2037 (PDP 2018), which proposes to increase capacity from the Isolated Power Supply (IPS) groups and efficient power-saving policies. The PDP 2018 will result in lower power demand than anticipated and more policies to promote power generation from renewables.

Banpu Power projected that development of new power plants would face fierce competition in project bidding and in applying for electricity sale license. So, the Company has prepared competent and experienced employees from the Business and Project Development Department to monitor the policies of the government and related government agencies and evaluate the Company's competitiveness. This business development team

also prepares for the Company's participation in the government's project which allows private investment such as the Eastern Economic Corridor (EEC) and responds to the government's promotion of the business sector's role in the Independent Power Supply (IPS) project, which constitutes up to 14% of the country's total generating capacity. Currently, the Metropolitan Electricity Authority and Provincial Electricity Authority are preparing for law amendment to allow customers to buy electricity directly from the private sector rather than to buy solely from the Electricity Generating Authority of Thailand.

Major Competitors

- Coal-fired power plants which already achieved commercial operation date do not face direct competition with other producers because Banpu Power entered into long-term power purchase agreement with the Electricity Generating Authority of Thailand.
- Major domestic power producers include Electricity Generating Plc., Ratchaburi Electricity Generating Holding Plc., Global Power Synergy Plc., Glow Energy Plc., B.Grimm Power Plc., and Gulf Power Generation Co., Ltd.
- International power producers and investors

2. Competitive Strategies in the People's Republic of China

Banpu Power's combined heated and power (CHP) plants and solar power plants in China are more highly efficient than average power plants and meet pollution control standard. Hence, they enjoy various supports from the Chinese government such as guaranteed electricity sales to local electricity authorities, privileges to sell steam and heat in permitted zones, and local government subsidies.

Competitive Strategies

1. Cost and Efficiency Management

In 2018, the Chinese government issued a policy to reduce the price of electricity and steam as well as the governments' related policies. Banpu Power assessed the policy's impact on the present prices in sales contracts and adjusted the prices accordingly. For instance, the Zouping CHP Plant had agreed with customers to sell steam at a reference price of CNY 125 per tonne, and if there is any change in the cost of coal, plus or minus, for every CNY 0.01 per KCl (tax and transportation cost inclusive), the price of steam can be raised or lowered for CNY 5 per tonne. This enabled Banpu Power to reduce the higher fuel costs from price fluctuation.

The global coal price affected the domestic prices in China as well as Banpu Power's operating results. However, Banpu Power still maintained its profitability by improving production efficiency and strictly controlling the cost using the strategy to buy and stock coal when coal prices decline, and stock the coal for use when coal prices increase. Banpu Power also has a plan to expand the generating capacity to respond to steam demand which is lifted by local economic growth.

2. Environmental Management

The Chinese government has a strict policy on environment and pollution control which restricts the use of coal as a major fuel in factories. Banpu Power uses highly efficient production processes which comply with current environmental standards with regular maintenance of all equipment and machines. It also has a plan to upgrade pollution control equipment to be able to meet future standards. Apart from that, Banpu Power monitors and assesses environmental impacts to ensure that its business operations are in full compliance with environmental laws, rules, and regulations. It

has considered applying the High Efficiency, Low Emissions (HELE) technology called Ultra-Supercritical technology, in such new project as the Shanxi Lu Guang Power Plant to minimize environmental impacts to meet international standards. Such technology can trap sulfur dioxide, nitrogen oxides, carbon monoxide and other pollutants before being released into the atmosphere.

3. High Adaptability to Change

Banpu Power has a team to monitor changing market scenarios and align business operations to the market conditions or situations in order to benefit from business opportunities or mitigate negative impacts. Banpu Power is prompt to adjust the distribution of power, steam and hot and chilled water according to the factors affecting the demand as follows:

- Banpu Power would produce and distribute electricity, steam and hot water at full capacity during winter to respond to the seasonal demand.
- The Zhengding Combined Heat and Power Plant would produce chilled water for sales during summer to generate more income and reduce the impacts from the seasonal decrease in electricity sales.

4. Service Quality and Stakeholder Relationship Management

Banpu Power emphasizes the quality of products and services, and assures readiness and stability in generation and distribution of electricity and steam to respond to customer's needs at all times, especially the distribution of hot steam in wintertime, as well as maintaining a good relationship with customers on the basis of mutual trust and benefit. This has earned Banpu Power customer's trust and confidence.

Relationship management with local government agencies and communities is on the basis of mutual benefits by providing basic utility services (electricity and steam) to local communities, building trust and equity as well as lending continued support to community. This has brought Banpu Power acceptance from local government agencies and communities as an exemplary local enterprise. Despite a setback from external factors, Banpu Power still enjoyed full support from local governments, for instance, financial subsidies or approval to raise steam prices when coal price increased.

Apart from that, Banpu Power has continuously supported community activities and communicated with communities, leading to a good relationship between the two parties.

5. Seeking Opportunities for Business Expansion

Banpu Power puts greater emphasis on investment in renewable energy to align with the government's policy to promote renewable energy. It also focuses on creating added value by expanding investment into related businesses while considering the costs of different fuels and appropriate technology. For example, the location of the Luannan CHP Plant is in the urban-industrial area, which gives it a strategic advantage to become a sole distributor of steam. Banpu Power is also considering expanding its customer base to new industrial areas to offer service of the roof-top solar power generation system. Apart from that, Banpu Power is conducting a feasibility study for the development of its existing land to develop the project that integrate biomass power plant with combined heat and power plants.

Major Competitors

Domestic and international power producers and investors

3. Competitive Strategies in Lao PDR

Banpu Power owns 40% of the shares in Hongsa Power Company Limited which operates only mine

mouth power plant in Lao PDR. The Hongsa Power Plant has a total capacity of 1,878 MW and a total equity capacity of 751 MW. The power plant sells the majority of electricity solely to Electricity Generating Authority of Thailand under the Independent Power Producer (IPP) scheme and some of its output to Électricité du Laos (EDL).

Competitive Strategies

1. Operation Efficiency and Readiness Monitoring

The Hongsa Power Plant achieved commercial operation dates of all three production units in 2016, with 100-percent dispatch in 2018. This represents the operational stability and the low operation cost, the two important factors for the two countries' electricity system.

2. Managing Relationship with Local Government Agencies and Communities

Banpu Power places importance on community development by promoting community engagement while improving the quality of life of people in the communities. Such development approach materializes into community development initiatives, for example, infrastructure development (water supply, electricity, and roads), prompt construction of houses for relocated people in appropriate areas, vocational training and promotion of local employment, contract for project design and equipment procurement.

3. Cost Management and Efficiency

Banpu Power has improved efficiency and capacity readiness of the Hongsa Power Plant in producing and distributing electricity, thus, contributing to the better Equivalent Availability Factor (EAF) than the past year at 87%. Moreover, the power plant maintained readiness by stocking equipment parts for maintenance and keeping all equipment in full capacity, which ensures smooth power generation.

Major Competitors

For coal-fired power plants which already achieved commercial operation date, there are no direct competitors because Banpu Power has the long-term power purchase agreement with the Electricity Generating Authority of Thailand (EGAT) and Électricité du Laos (EDL).

4. Competitive Strategies in Japan

Banpu Power's investment in solar plant projects in Japan has a total installed equity-based capacity of 37.5 MW from fully-operational plants and a 196.2 MW capacity from under-development power plants. Banpu Power's business expansion to Japan started from solar-powered electricity generation together with feasibility study and preparation for assessment of investment and project development opportunities. It focuses on teamwork and human resource management as well as nurturing relationship business partnership to seek significant opportunities for real growth in Japan's renewable energy business. Government's support and investment incentives from financial institutions enable Banpu Power to quickly expand its business in Japan.

Competitive Strategies

1. Capability in Investment Management

Banpu Power has a strategy to collaborate with partners in seeking new investment opportunities as well as managing financial cost by tapping from several sources, especially from domestic financial institutions, to achieve long-term investment goals.

2. Project Development

Banpu Power closely monitors policy and regulatory changes of the Japanese government related to energy, with a specific team to follow up and study the changes in details as well as impacts on under-development projects to ensure that all projects achieve commercial operation dates as planned.

3. Seeking Opportunities for Business Expansion and Creating Added Value

Since Japan's energy management is governed by clear energy policy, Banpu Power faces low investment risk because retail electricity prices of its power plants are guaranteed under the Feed-in Tariff (FiT) scheme.

The Japanese government will announce a measure to reduce purchase price, Banpu Power thus adapted to change by bootstrapping project management through reduction of construction costs, improvement of major equipment efficiency and seeking financial sources to obtain target return on investment.

Additionally, Banpu Power continually seeks investment opportunities in related businesses by building upon the existing power generation business to create added value, such as energy trading and retail electricity to expand business opportunities with retail customers.

Major Competitors

Domestic and international power producers and investors

5. Competitive Strategies the Socialist Republic of Vietnam

Banpu Power has invested in power business in the Socialist Republic of Vietnam since 2016 under a memorandum of understanding (MoU) signed with Soc Trang Province People's Committee to carry out a feasibility study of investment in a 200-MW renewable power plant. In 2018, Banpu Power was awarded an Investment Registration Certificate (IRC) to set up a subsidiary company in Soc Trang Province, Vietnam. Banpu Power has an experienced team whose understanding of Vietnam's business climate will drive the existing project towards achieving commercial operation date as planned as well as seeking more investment opportunities. The Vietnam project phase 1 with 80 MW capacity is currently under the feasibility study.

Competitive Strategies

1. Managing Relationship with Local Government Agencies and Communities

Banpu Power builds a relationship with local government agencies on the basis of understanding of social and cultural differences. It focuses on becoming a mutually responsible partner with government agencies to sustainably engage in local community development by providing continuous support for community activities.

2. Project Development

Banpu Power is fully aware of major factors contributing to investment decisions. That is why it always conduct preliminary and feasibility studies of every project. Banpu Power seek helps from experts in many fields such as engineering consultants, environmental consultants, legal consultants, financial consultants and accounting and taxation consultants in order to arrive at feasibility options before investing and to ensure compliance with regulations and investment conditions in Vietnam. In addition, the feasibility study helps monitor progress of project development and execution of each construction phase against the plan.

3. Seeking Opportunities for Business Expansion and Creating Added Value

Vietnam has enjoyed continuous growth rate in recent years and is expected to attain 6-7% gross domestic product (GDP) in the next 10 years. Such a high growth rate estimate implies an increase in power demand. Additionally, the government has a clear energy management plan to increase the portfolios of power generation from coal and renewable energy sources. Banpu Power has seen these opportunities and decided to leverage its strengths in conventional and renewable power generation and fuel purchase capacity to seek investment opportunities in Vietnam.

Major Competitors

Domestic and international power producers and investors



Energy Technology Business

Banpu Infinergy Company Limited, a subsidiary of Banpu, is a one-stop service provider of total solar energy solutions with advanced technologies. Banpu

Infinergy provides consultation, system design, installation, inspection and maintenance services for industries and large businesses seeking to cut their electricity costs and play a role in sustainable preservation of our planet through renewable energy.

Market and Competition

Solar power system installation service shows positive signs of growth. The national Power Development Plan 2018-2037 (PDP 2018) promotes consumption of electricity from solar power, and Board of Investment's (BOI) incentives have successfully encouraged many people to install roof-top solar power system. Another factor contributing to the increase of solar power generation is the permission

from the state for the private sector to be part of the energy market under the independent power producer scheme. All these factors attracted more entrepreneurs, both locally and internationally, to enter the solar power generation business with different marketing strategies.

Competitive Strategies

The majority of solar power system providers focuses on the installation of roof-top solar power generation system. In contrast, Banpu Infinergy's marketing strategy is its unique positioning as a one-stop service provider of total solar energy solutions. The Company's service ranges from roof-top system installation service to energy solutions which are stepping stones to building smart cities. Such solutions include design, installation and maintenance of Micro Grid system, Energy Management System (EMS) and Energy Storage System (ESS), which are used for production control, transmission and storage of electricity with maximum efficiency. Furthermore, the Company also provides service on Electric Vehicle (EV) and other accessories such as Smart Pole, Solar Kiosk, on-grid and off-grid system powered by household and solar-powered electricity and solar-powered furniture. All products and services from Banpu Infinergy cater to diverse customer's needs in different locations and are part of Thailand's sustainable stride to using clean energy and to establishing smart cities under Thailand 4.0 policy.

Banpu Infinergy has invested in Sunseap Group Pte Ltd., Singapore's leading integrated clean energy solutions provider. Banpu Infinergy acquired 35.5% of the Sunseap's newly-issued shares worth SGD 118 million (equivalent to USD 87.6 million or THB 2,925

million). This investment has made Banpu Infinergy the largest shareholder of Sunseap Group. It also acquired 47% shares of Durapower Holdings Pte Ltd., an expert company in design and manufacturing of Lithium-Ion Battery for electric vehicle and Energy Storage System (ESS) whose factory is located in China with 80 MWh capacity. Durapower has a plan to expand its business into China, India, ASEAN countries, and Europe. This investment decision has not only gained Banpu Infinergy a greater proportion of solar power generating capacity but also brings in expertise and technology in solar power service and battery to better satisfies the needs of customers in Thailand.

In addition to making a difference as a one-stop service provider of total solar energy solutions, Banpu Infinergy prioritizes providing a wide range of services from system installation to system development to accommodate after-sales services. Such services include generation system inspection which is a real-time assessment allowing the expert engineering and customer service teams to identify problems and promptly fix them. It also offers the INFINERGY Application, which helps customers view the process results of their systems, for instance, generation output, energy-saving result both in real-time and logging modes, CCTV monitoring and system faults alarm. Banpu Infinergy has particularly set up a customer service department to provide information, receive concerns, and answer customers' questions via different channels. In fact, customers can notify the customer service about their problems 24 hours a day so that Banpu Infinergy can timely fix problems with the power generation system.

REVENUE STRUCTURE

For the previous 3 years ended 31 December 2018

Banpu Public Company Limited

Products/Services	Conduct by	% of Shareholding	2018		2017		2016	
			Revenue (USD Million)	%	Revenue (USD Million)	%	Revenue (USD Million)	%
Sales Revenues								
1. Domestic Coal	Banpu	-	-	-	-	-	0.09	0.12
2. Imported Coal	Banpu	-	61.69	100.00	97.20	99.46	77.88	99.33
3. Other Revenues	Banpu	-	-	-	0.53	0.54	0.43	0.55
Total Sales Revenues			61.69	100.00	97.73	100.00	78.40	100.00

Banpu Public Company Limited and its Subsidiaries

Products/Services	Conduct by	% of Shareholding	2018		2017		2016	
			Revenue (USD Million)	%	Revenue (USD Million)	%	Revenue (USD Million)	%
Sales Revenues - Domestic								
1. Domestic Coal in Thailand	Banpu	-	61.69	1.77	97.20	3.38	77.97	3.45
	BMC	99.99	44.36	1.27	86.05	2.99	54.72	2.42
2. Domestic Coal in Indonesia	Indominco	67.13	91.27	2.62	111.33	3.87	107.39	4.75
	Bharinto	67.13	30.77	0.88	19.08	0.66	19.18	0.85
	Trubaindo	67.13	74.96	2.15	51.63	1.79	46.36	2.05
	Jorong	67.13	16.64	0.48	17.00	0.59	14.82	0.66
3. Domestic Coal in Australia	CEY	100.00	522.01	14.99	469.32	16.31	379.16	16.78
4. Other Revenues			165.98	4.77	78.34	2.72	25.00	1.11
Total Sales Revenues - Domestic			1,007.68	28.93	929.95	32.33	724.60	32.07
Sales Revenues - Overseas								
1. Coal - International Trade	Indominco	67.13	775.55	22.28	638.74	22.20	610.02	27.00
	Kitadin	67.13	95.73	2.75	67.31	2.34	9.26	0.41
	Bharinto	67.13	241.53	6.94	183.14	6.37	117.60	5.21
	Trubaindo	67.13	498.37	14.32	411.54	14.31	328.72	14.55
	Jorong	67.13	16.85	0.48	26.07	0.91	16.50	0.73
	CEY	100.00	491.91	14.13	413.18	14.36	281.27	12.45
	BMC	99.99	36.05	1.04	-	-	-	-
2. Power	BIC	78.57	174.04	5.00	169.75	5.90	156.60	6.93
3. Gas	BNAC*	100.00	143.73	4.13	36.96	1.28	14.64	0.65
Total Sales Revenues - Overseas			2,473.76	71.07	1,946.69	67.67	1,534.61	67.93
Total Sales revenues			3,481.44	100.00	2,876.64	100.00	2,259.21	100.00
Participating Profit (Loss) from Investment in Associated Companies (Equity Method)			263.66		204.66		118.37	
Total Revenues			3,745.10		3,081.30		2,377.58	

Notes : 1. Other revenues consist of other services.

2. The company did not realize sales revenue from its power business in Thailand as its shareholding is not more than 50%.

* BNAC : Banpu North America Corporation.

RISK MANAGEMENT AND RISK FACTORS



Banpu and its group of companies emphasize the importance of risk management in order to manage risks that may affect business goals and objectives to be a leading integrated energy solutions company in Asia-Pacific. Banpu Group makes an effort to reduce the likelihood of risks or to mitigate their associated consequences to gain business opportunities that create added value for the Company. Business risk management is the responsibility of all executive levels and also under the supervision of committees such as the Risk Management Committee (RMC), which convenes on a quarterly basis to monitor and implement a risk management plan. The Financial

Management Committee (FMC) convenes on a monthly basis to manage financial risks. Also, the monthly meeting of the Commodity Risk Management Committee is aimed at managing the risk from volatility in coal and gas prices, which is a key factor affecting the Company's profitability. In addition, the review of the organizational risk management is reported to the Audit Committee and the Board of Directors on a quarterly basis. In 2018, the Company revised Risk Appetite Policy to align with the strategic plan and corporate culture. As it was used as a risk management framework. Moreover, the Company developed tools such as Key Risk Indicator to improve the efficiency of risk management.

1. Strategic Risks

1.1 Risks in Strategic Planning and Implementation

Amid a changing economic landscape, the US-China trade war, imbalance in energy demand and supply, legal and regulatory changes, rapidly changing development and disruptive technology trends as well as the higher expectations of investors and stakeholders, the Company has established systems and processes to manage the risks in strategic planning. The Company annually reviews its strategy to devise and review its direction and business strategy to appropriately respond to current and future changes and uncertainties. It also holds a monthly meeting to assess the situation, trend and scenarios; including comparing information from credible institutions and sources and developing tools for a systematic forecast of economic scenarios to be used in making a business decision and future planning.

1.2 Risk in Human Resource (HR) Management and Development to Accommodate Future Growth

To accommodate future growth, the Company not only improved the recruiting and HR development processes but also reviewed the organizational structure and analyzed the workforce and HR development plans to align with its long-term strategies of business expansion. Apart from this, the Company implemented a succession plan by developing employees' knowledge and skills to prepare them for their future senior management positions.

The Company has formulated Employee Learning and Development Policy and allocated a budget of no less than 5% of the total budget for employee compensation. There is also Banpu Learning and Development Framework, which offers a clear guideline for competency-based workforce development at all levels so that the employees at different levels of responsibility

can respond to the needs of business expansion with a wide range of versatile potentials. Other than on the job training, the framework covers various forms of training, e.g., in-house and external training, e-learning and knowledge sharing with the management.

In 2018, Banpu changed its corporate culture from 'Banpu Spirit' to 'Banpu Heart' to better align with its current vision. Banpu people are to uphold the new corporate culture in their work to ensure alignment with the Company's future business direction.

1.3 Corporate Reputation Risk

Banpu places top priority on the management of reputation risk since an unfavorable reputation on the Company's prestige and image could have a tremendous and rapid effect whose cost is immeasurable in both the short and long terms. The Company focuses on its Sustainable Development Policy combining appropriate business strategy, transparency, and fairness in business practices, workplace safety and responsibilities to the environment, communities and society, on-going employee capacity development, creating sustainable value for stakeholders, as well as building good relationships with all partners. For example, the Company expressed its intention to campaign against corruption as part of the Private Sector Collective Action Against Anti-Corruption (CAC) and passed the verification by CAC. This aimed to ensure the stakeholders with the Company's determination against all forms of corruption. It has also cooperated with external parties, both in the public and private sectors, to set the standard for transparent business practices. Moreover, Banpu has carried on its social development mission by supporting projects that benefit the society, environment and youth capacity development such as Banpu Champions for Change that collaborated with Change Fusion in 2018 to create the SE (Social Enterprise) School, the first online learning platform in Thailand

specially designed for those who are passionate to run a social enterprise and Power Green camp—the envi-science youth camp.

Moreover, the Company has implemented effective communication and branding strategies to convey timely and accurate information to all stakeholders such as quarterly analyst meeting which is aligned with corporate direction, on the Company's performance for investors and analysts and direct communication with all domestic and international investors via the Investor Relations Department. The Company maintains effective and ceaseless communication of its Corporate Social Responsibility (CSR) operations and good community relations. Additionally, the Company periodically conducts community and stakeholders' satisfaction surveys, customer satisfaction survey as well as a survey on employee opinion toward the organization to gain information for the improvement of the Company's business.

1.4 Risks from the Inability to Increase Coal Reserve for Commercial Purpose

As of 31 December 2018, the Company has a total amount of 815.1 million tonnes of coal reserves in Indonesia, Australia, and China. The coal reserves by countries are, as follows: Indonesia 354 million tonnes, Australia 309.3 million tonnes, and China 151.8 million tonnes. The Company has a plan in place to assess and estimate the quantities of coal reserves when certain commercial factors significantly change and show a tendency to affect the existing reserves. Such commercial factors include coal price trend, cost factors and development of coal production technology. The Company also has employed various strategies to increase the coal reserves by exploring the mine areas and improving mining plan, purchasing and blending coals from nearby areas to meet the customers' quality requirements, coal trading, and

studying the acquisition plans for new mines to help lift coal reserves or to extend the mine life. In 2018, the Company acquired the PT. Nusa Persada Resources (NPR) mine in Indonesia with a coal reserve of 77.4 million tonnes, which is scheduled to commence operation in 2022.

1.5 Risks from Investing in New Business

In managing the risks, Banpu has strived to ensure that its new investments create value to the Company no less than what had been estimated prior to the acquisition. In doing so, the Company has set the investment decision-making process in which the Investment Committee, comprising executive officers and experts, carefully considers and provides opinions on the alignment of new investments with the Company's growth strategies, the return on investment against the Company's criteria and project's risk assessment. The Committee is also in charge of regular monitoring of investment performance and changes in the factors affecting the target rate of return to ensure a fast and efficient response to problems. In addition, Banpu periodically monitors and analyzes its investment portfolio.

Banpu also emphasizes the management to achieve the synergy between the Company and the new entities via resource planning, staff capacity building and appropriate restructuring to facilitate change management, which will, in turn, ensure a smooth investment, sustainable growth and secure investment return according to the strategic plan.

In 2018, the Company further invested in the renewable energy sector according to Banpu Greener & Smarter Strategy with environmental commitment to respond to energy demand of consumers, communities and society. This aligned in alignment with the Banpu's promise "Our Way in Energy." The new investments include a 200 MW wind farm project in Soc Trang

province, Vietnam and acquisition of Durapower Holdings Pte. Ltd. in Singapore in preparation for Banpu's future expansion into the energy storage system business.

2. Financial Risks

2.1 Exchange Rate Risk

The Company follows risk mitigation plans to reduce impacts associated with fluctuating exchange rates at both the corporate and group levels in Thailand, Indonesia, China and Australia by balancing cash flow from foreign revenues and expenses, adjusting its foreign currency forward contracts based on its estimated revenues, expenses, loan payments and other financial instruments as appropriate.

As of 31 December 2018, 29% of the Company's denominated debt was in Thai Baht; 63% in US dollars; 7% in Australian Dollar, and 1% in Chinese Yuan Renminbi. The Company also raised capital in US dollars or converted to other foreign currencies to accommodate overseas investments.

2.2 Taxation Risks

To mitigate taxation risks, Banpu and its group of companies pay taxes within the period of time specified by law. The Company has created tax guidelines and prepared complete documents for settling tax payment. The investment structure is regularly reviewed. Additionally, all executives in each country are assigned to closely monitor changes in rules and policies of the country, both at the central and local government levels. This includes hiring local legal consulting firms to provide advice on practices toward legal compliance.

In case there are taxation disputes with the government offices, the Company would provide such offices with

accurate tax information relating to its business. If necessary, the Company would also hire expert tax consultants to offer opinions and handle the disputes.

2.3 Risk from Volatility in Coal and Gas Prices

Volatile coal and gas prices in the current business scenario have an impact on the Company's operating results; therefore, the Company has delegated the Commodity Risk Management Committee (CRMC) to manage the risk. The CRMC analyses coal and gas price trends and mitigate the potential adverse impact by using financial derivative tools – coal swap, and gas oil swap. The Company also closely monitors and assesses the global market situation to seek the most opportune time to settle customer sales contracts, taking into account the appropriate proportion of coal sold on an index-linked basis to that sold on a fixed-price basis to the market situation.

3. Operating Risks

3.1 Risks in Coal Business

3.1.1 Risks in Coal Delivery

To ensure punctual delivery of coal to customers with the right quality and quantity as set forth in the agreement, in 2018 the Company managed its delivery risks as follows:

- Develop Tugboat Monitoring System (TMS Phase II) by installing Geographic Positioning System (GPS) trackers on tugboats, to enable real-time monitoring on the status of tugboats with higher accuracy and efficiency.
- Deploy digital technology in monitoring operation in the mine and control room at Trubaindo mine, which helped improve operation and reporting efficiency.

- Improve storage methods for coal inventory and reclaim system at Bontang Coal Terminal (BoCT) to increase storage capacity and improve coal blending quality to meet customer's demands and more varied sales plans. Different types of coal are evaluated for quality in order to identify the right quantity for dozing into the reclaim conveyor for the best quality blended coal.

3.1.2 Risk from Rising Production Cost

Production cost is a significant factor affecting the Company's operating results. Hence, Banpu places importance on managing the risk from production cost to ensure it can achieve target operating results and increase profits. In 2018, the Company managed this risk as follows:

- Study the use of Auger Mining instead of open-pit mining to increase coal quantity at a lower cost.
- Improve In-Pit Crushing and Conveying (IPCC) system in the eastern part of Indominco mine to reduce congestion on conveying systems and extend conveyor belt's life, which helps increase machine availability that maximize the conveyour's capability. This is achieved by integrated planning between mine planning, contractor's coal transport plan, maintenance plan and power transmission plan.
- Study dust suppression on haul roads by installing spraying device on the coal truck to replace water transport contractor.
- Initiate the project to monitor the water trucks using GPS tracking devices installed on the trucks to better keep track of truck performance and improve the contractor's management.
- Monitor and analyze monthly barge operation to improve barge planning and contractor's management. Barge planning is performed and

regularly reviewed to ensure an adequate supply of barges to meet sales plan.

- Continuously execute the Step Change Program, an integrated program to increase efficiency and reduce cost, at mines in Indonesia and Australia to seek improvement for the highest operational efficiency.

3.1.3 Risk from Contractors' Operations

Since the Company's mining operations and coal transportation rely heavily on contractors' operations, there is a possible risk of delays from various problems, such as machinery installation delay, poor maintenance, ineffective operation planning or labor problems both in terms of efficiency and quantity. To address such risks, the Company closely monitors contractors' performances through a Contractor Management System (CMS) and evaluate their qualifications. The results will then be considered before signing or renewing a contract, which helps reduce the risk from hiring inefficient subcontractors. Moreover, the Company also sets up its own excavation and transportation company. In 2018, the Company increased the number of machinery and equipment to reduce the risk from contractors' operations and raise bargaining power from other contractors.

3.2 Risks in Power Business

3.2.1 Risk from Power Buyer

The Company's BLCP Power Plant and Hongsa Power Plant (HPC) are investments under the Independent Power Producer (IPP) scheme. The BLCP Power Plant's electricity is supplied solely to the Electricity Generating Authority of Thailand (EGAT) under a long-term Power Purchase Agreement (PPA). Similarly, the Hongsa Power

Plant entered into a long-term PPA with EGAT and Électricité du Laos (EDL). The agreements guarantee stable electricity prices as they stipulate that the pricing structure may be adjusted according to the changes in fuel prices, Thai Baht exchange rates, and inflation rate. Consequently, the Company's power plants face very low risk in power purchase.

Meanwhile, the Company's power business in China is faced with the risk from power and steam purchase since the country does not have long-term buying contract system as Thailand and Laos PDR. However, the Company's combined heat and power plants in China are high-efficiency power plants that enjoy government support and are guaranteed sole distribution of steam and heat in specially promoted areas and are allowed to sell electricity to local electricity authorities. They also receive good support from the local governments. All these factors contribute greatly to effective purchase risk management.

Additionally, the Chinese government policy to increase energy efficiency and environment conservation policy have improved related regulations on power business operations in China. The Company manages this risk using different measures such as boosting energy efficiency in power plants and control environmental impacts in compliance with the Chinese government's policies. In 2018, Banpu's Zhengding power plant, a combined heat power plant, was acknowledged and supported by the Chinese government as a clean energy power plant with impressive economic value.

3.2.2 Risk in Coal Supply

The BLCP Power Plant entered into a long-term contract to purchase coal from major and reliable

suppliers, with clearly specified amount and quality of coal, to ensure sufficient supply for electricity generation in accordance with the PPA signed with EGAT. Accordingly, the risk associated with the failure to access good-quality coal is low. Still, under certain circumstances, it may be necessary for BLCP to procure coal outside of the said contract. For example, the supplier may be unable to deliver coal as planned due to an event of force majeure. In such cases, BLCP may purchase coal from other suppliers in the coal market. To date, the amount of coal purchased outside of the long-term contract never exceeded 5% of yearly coal demand each year, which is relatively low and has no significant impact on its operating results. Moreover, the BLCP Power Plant has closely and regularly monitored coal production and coal prices to mitigate the risks in coal supply.

HPC has been granted the license to develop and operate a lignite mine in the concession area as a part to project development. Before the launch of the project, a feasibility study was conducted to assess the quantity, quality, production and coal transportation plan for the entire project period. Therefore, the risks in accessing quality coal are low and the cost can be controlled corresponding to the plant's generation. The Company has also prepared a coal reserve plan to cope with operational disruptions due to uncontrollable factors, e.g., poor climate conditions, natural disasters, transport delays and accidents.

The Company's combined-heat power plants in China were affected by soaring coal prices driven by strict policy on coal mine safety, forcing many coal mines to shut down. In addition, the policy to reduce coal production and limit coal imports has sent 2018 average coal prices soaring to a 3% increase from 2017. The Company has

managed the risks by closely monitoring coal prices and improving its procurement plan according to its cost and operation plan. To reduce the risk, the Company also entered into an agreement to sell electricity to some clients, which allows electricity and steam's pricing structure to be adjusted to the actual fuel costs at that time.

3.2.3 Risk in Power Generation Operations

There were potential risks that the Hongsa Power Plant may fail to achieve its operations as planned caused by problems with machinery. The Company has managed the risk by closely monitoring the operations, focusing on investigating for the root cause to achieve reliable operation. Besides, the Company has prepared adequate critical spare parts for the power plant and organized staff's capacity building programs and knowledge sharing among the companies in its group. In 2018, the Hongsa Power Plant was able to run smooth operations with significantly higher efficiency than in 2017.

3.2.4 Risks from the Construction and Management of Power Plants

The Company has managed the risks from the construction and management of power plant projects by closely monitoring the projects' progress and constantly coordinating with contractors to ensure that project quality is in accordance with the contractors' agreements. In 2018, two solar farms in Japan achieved commercial operation date (COD) with a total generation capacity of 37 MW (total equity-based generation capacity of 24.5 MW). Therefore, the Company has a total installed power generation capacity of 58.5 MW (total equity-based generation capacity of 37.42 MW) in Japan at the end 2018.

The Company also expanded the capacity of Luannan CHP Power Plant Phase 2 in China while continuing the construction of the Shanxi Lu Guang Power Plant, which the Company owns 30%, is scheduled to commence commercial operations by the end of 2019 and mid-2020.

3.2.5 Risks from Solar Power Generation

The major factors affecting solar power generation are the intensity of the sun's radiation, which depends on weather conditions and leakage during generation. The Company addresses these risks by using statistics of intensity of the sun's radiation to estimate the minimum amount of electricity the plant can generate and compare it with the actual amount of electricity output. The Company also uses advanced technologies for solar power plants and carries out regular maintenance to ensure minimum leakage, which is lower than the Company's predefined acceptable rate.

Natural disasters also affected the Company's solar power plants. In September 2018, Japan was hit by more monsoon storms than in 2017 causing the generation capacity to drop. An earthquake in Hokkaido also caused a blackout and halted power transmission from the Mukawa Power Plant. Fortunately, the power generation at the Company's power plants was not affected because preventive measures for natural disasters had been put into place.

3.3 Risks in Shale Gas Business

3.3.1 Risk from Natural Gas Price Volatility

The Company has diversified into the shale gas production with a total investment of USD 522 million in the Marcellus Shale located in Northeast Pennsylvania, U.S.A. Throughout 2018, the volatility of natural gas prices was a major factor affecting the Company's performance.

Meanwhile, the prices of natural gas had greatly fluctuated with the lowest price at USD 2.55 per MMBtu and the highest price at USD 4.84 per MMBtu. The average price in 2018 was USD 3.06 per MMBtu, a bit higher than in 2017. To manage the volatility, the Company employed a financial derivative called Gas Collar to sell natural gas in the future market at approximately 70% of the total natural gas production, resulting in the effective management of cash flow stability.

3.3.2 Risks from Gas Producers' Operations

As the Company's investment in natural gas business has been conducted through an investment fund, the Company's role in the investment is mainly about the approval of the budget and annual operation plan over the assets owned by the fund both as a producer and investor. The Company thus faces the risk from the gas producer's performance. However, the Company managed these risks by focusing on the selection of good gas assets and reliable producers as well as protecting the assets owned as a producer with risk insurance. Apart from that, the Company, as a joint venture partner, regularly reviews monthly performance and maintains a good relationship with stakeholders which partly mitigates the operational risks.

In 2018, the Company made a cash flow forecast and anticipated a greater cash flow and revenue than the set annual budget due to an increase in revenue ratio from the assets it owns as a producer and rising natural gas prices as mentioned earlier.

3.4 Risk in Solar Rooftop Power Generation Business

3.4.1 Competitive Risk

Lower technology prices and easier market entry resulted in wider market options. The Company, therefore, needs to create value for customers

and offers unique total solutions by utilizing high-quality products of international standards and providing 24-hour after sales service. The Company also builds on sustainable energy technology, for instance, Energy Management System (EMS), Energy Storage System (ESS), and increase energy efficiency that is personalized to customer needs.

3.4.2 Risk from Engineering, Procurement, and Construction (EPC) Contractors

For convenient and immediate operation, the Company's business depends on many Engineering, Procurement, and Construction (EPC) contractors. The Company has sent a working group to closely communicate with the contractors and monitor their progress to ensure that they can deliver quality work. This enables the Company to identify problems beforehand and advise on the alignment of the work standard with the Company's policy.

3.5 Occupational Health, Safety and Environmental Risks

3.5.1 Occupation Health and Safety Risks and Business Continuity Management

The Company emphasizes the importance of occupational health and safety management throughout the supply chain to prevent occupational health and safety risks. In 2018, the Company still stressed the 3-Zeros policy, which includes:

Zero Incident: Prevention of unsafe incidents.

Zero Repeat: Prevention of recurrence of incidents.

Zero Compromise: Strict adherence to safety rules and standards of the Company and host countries without compromise. The Company assigns roles and responsibilities to all departments in effective

implementation of occupational health and safety (OHS) policy in achieving OHS goals. Apart from that, the Company has integrated OHS management system with safety culture which results in 3 mechanisms driving the safety culture:

- Occupational Health and Safety Management System
- Occupational Health and Safety Awareness and Behavior
- Occupational Health and Safety Competency

In 2018, the Company organized a workshop on Safety Leadership Accountability for high-ranking executives to come up with a mutual agreement on the role and responsibility about occupational health and safety, to set annual and strategic plans for each country to achieve the 3-Zeros goals. Progress on the OHS implementation is monitored through various meetings and Quality Assurance Review (QAR).

Apart from that, the Company has continuously applied a Business Continuity Management System (BCMS) as mitigation against such risk factors as natural and man-made incidents that might impact the Company's operations. The results of risk assessment are strategic inputs for devising Business Continuity Plan (BCP) to ensure that the Company's business operations will not be interrupted because of possible incidents such as fire, flood, earthquake, epidemics, protest or riot. The Company has prepared the necessary resources and annual rehearsal to respond to emergencies at operational, nationwide and management levels. In 2018, the Bangkok office rehearsed an emergency plan to respond to the situation that might cause a national-leveled impact. The rehearsal was organized by the national-leveled Incident Management Team (IMT),

who prepared an educational video to explain the activation process at various levels to educate the Company's employees from every country office.

3.5.2 Environmental Risk

The Company complies with environmental standards and strives to maximize the effectiveness of resource utilization so as to preserve natural resources and to control direct and indirect environmental impacts such as climate change, land utilization, water resources utilization and biodiversity.

Climate Change

The Company closely monitors environmental changes related to its business operations throughout the value chain in order to formulate policy and investment schemes in response to those changes, particularly climate change, which has become greater in terms of frequency and severity. The society hence expects the use of alternative energy with lower greenhouse gas (GHG) emissions, which will help reduce the impact of climate change. The Company's production activities, including coal mining and power and heat generation, rely on energy resources which inevitably releases GHG into the atmosphere. Realizing its responsibility in reducing the GHG emissions, the Company formulated corporate policies and defined goals in GHG management in 2010 to enhance energy consumption efficiency and promote the use of cleaner technologies. The Company has set a five-year GHG emissions goal from 2016 to 2020 compared to the baseline in 2012 – the year the Company included the operating results of the Australian business unit. The target is to reduce GHG emissions per production unit by 25% in coal business and 15% in power business. Furthermore, the Company has closely monitored

the laws and regulations related to greenhouse gas emissions to accommodate changing business practices, including the Paris Agreement, which is the outcome of the Conference of Parties (COP), other agreements resulting from the COP, and the Company's policy on energy and reduction of greenhouse gas emissions in the countries where the Company operates.

The Company has devised a climate change strategy and practice addressing four operational areas, namely mitigation of GHG emissions, adaptation to climate change, being a part of a low-carbon society and participation in the climate change community. Guidelines, time frames and responsible parties for each particular area were clearly defined to ensure the most effective implementation of all strategies according to the strategic plan. In 2018, the Company set the internal carbon pricing as information for deciding whether to invest in new projects and as a tool to achieve the 2020 target of GHG emission, which is in alignment with the Greener & Smarter strategy. Regarding the investment plan, the Company invests in renewables and other alternative energy sources in order to reduce GHG emissions and to better respond to the demands of a low-carbon society through the one-stop service of total solar energy solutions provided by Banpu Infinergy Company Limited in Thailand as an example.

Environmental Compliance

The Company prioritizes compliance with environmental laws and regulations of all operations. For instance, the environmental quality standards regulations and environmental impact reduction measures, both of which are addressed in the environmental impact report. In 2018, the Company's environmental compliance performance remained high and continued to improve. Banpu focuses on managing major risks as follows:

- **Soil Erosion Control:** The Company takes preventive measures against possible impacts in the first place. Slope ratios are calculated for the appropriate ones and vegetation and trees are planted around mine pits to secure the topsoil.
- **Water Management:** The Company has a project to reduce the quantity of water used in its production and various water treatment processes, such as settling basins and constructed wetlands, which are attuned to fit the locations, limitations and water quality of each operation area. The quality of water discharged from mines to public waterways is determined by the pH value and the turbidity as well as heavy metal compounds before discharge to the natural environment to ensure that the quality of discharge water meets legal standards of every country the Company has business operations. The Company invested in the construction of a water treatment plant at the Newstan mine in Australia to treat underground water before discharge to supplement community use.
- **Acid Mine Drainage Management:** As for the pH value, the Company implements Acid Mine Drainage measures to prevent water acidity by treating water that becomes acidic due to mining processes at mine sites, covering all stages of mining from mine exploration to production planning, land management, and rehabilitation. A Successive Alkalinity Production (SAP) system for acidic water treatment has been implemented by filling lime and stone dust into the acidic water body and by passive treatment using wetland to treat water before discharge to the natural environment. Additionally, the Company constantly monitor pH value and level of heavy metal compounds in discharge water. Furthermore, treated water can be reused in many ways within the operation sites, such as spraying for dust-control, coal-washing and mine rehabilitation.

- **Cooling Water Management:** The cooling water used in the Company's power plants is designed to be a semi-closed cooling system to reduce water exchange with external sources and reduce discharge to the external environment, which helps conserve water. Outgoing waterways are designed for water to flow and be exposed to the air for as long as possible in order to lower the temperature to the level specified by law.

- **Air Quality Management:** The quality of air exiting to the atmosphere is determined by the quantities of sulfur dioxide, nitrogen oxides and particulate matter. At its power plants in Thailand, Lao PDR and China, the Company has installed various treatment and disposal technologies to reduce sulfur dioxide and nitrogen oxides, including the Low NOx burners, the circulating fluidized bed (CFB), the electrostatic precipitators (ESP) used for trapping fly ash and the flue gas desulphurization (FGD) system, both semi-dry and wet, the selective non-catalytic reduction (SNCR) and selective catalytic reduction (SCR). A continuous emission monitoring system (CEMS) was installed in chimneys and in the communities surrounding the plants to ensure that ambient air quality meets the standards required by law. In particular, the Company has improved its air treatment system at the power plants in China to meet the stricter air quality standards and to reduce urban air pollution. The Company has set its five-year plan 2013-2018 with a budget of approximately USD 43 million, which could reduce air pollution levels to meet air quality standards set by the Chinese government.

- **Dust Management:** Dust is naturally generated by mining activities such as pit opening, overburden removal, coal quality improvement

and coal transportation. The Company has implemented several measures appropriate to each specific operation area, for example, planting trees as a wind-blocking barrier in high-risk areas as well as reducing the vehicle speed limit in mining areas to reduce dust and for safety reason and spraying roads and coal stockpiles with water. Dust levels in mining areas and nearby communities are also regularly measured to ensure effective control of dust.

- **Hazardous Waste Management:** The Company has appropriate measures to ensure the proper management of waste to prevent environmental impact. The management of hazardous wastes is in compliance with local laws. In some cases, the Company may sell the waste such as used lubricants, automobile batteries and fly ash, to government authorized buyers for recycling. As for fly ash from coal-fired power generation, the Company sells it to buyers to be recycled as building material. The Company also separates fly ash according to size in order to meet the market needs and to increase the sales price.

Effective Resource Utilization

Effective resource utilization plays a pivotal role in environmental conservation and cost reduction. The Company focuses on the four areas of resource management, as follows:

1. **Climate Change:** The Company is committed to reducing greenhouse gas emissions by implementing an energy conservation project and conducting a feasibility study to replace the use of diesel with alternative fuels. In addition, the Company also discloses its carbon emissions information through its Carbon Disclosure Project (CDP) and sustainability report annually.

2. Fuel Reduction in Power and Steam Production:

The Company has deployed High Efficiency-Low Emissions (HELE) technologies in the Shanxi Lu Guang Power Plant in China. Moreover, improvements were also made on machinery conditions in the Zouping Power Plant, as well as the recycling of toxic gas from steel production process in customer's factories, which caused air pollution, as an alternative fuel for power generation in place of coal.

3. Land Use and Biodiversity: Recognizing the importance of effective land management and land use, the Company has carefully formulated its mining plan to minimize impacts on the geography, biodiversity and ecological system and developed mine closure plans before mining. In order to effectively manage biodiversity, PT. Indo Tambangraya Megah Tbk (ITM), a Banpu's subsidiary in Indonesia, in collaboration with Purwodadi Botanical Garden initiated a project to study and preserve biodiversity at the Bharinto mine located on Kalimantan since 2010. From 2012 to 2013, the study was expanded to the Indominco mine, which has made good progress in the study of biodiversity. The study was later expanded to other areas. The findings obtained from this study will be used to construct a model for future land and biodiversity rehabilitation. In 2017, the Company declared the Biodiversity Policy, with the aim of creating a net positive impact in all areas after mine closure. In 2018, the Company aimed to assess the biodiversity value of the biodiversity rich areas of Bharinto, Indominco and Trubaindo mines. The Company has various preventive measures, such as avoidance, rehabilitation of mining areas, offset the area outside the mine and close monitoring of operations and impact assessment to achieve the Company's environmental goals. In 2019,

the Company will be expanding the biodiversity assessment program to an underground mine in Australia.

4. Water Resource Utilization: The Company places a high priority on the preservation of water resources and has carried out many projects to reduce water use in production processes, recycle water and prevent surface waters from being contaminated by wastewater. Apart from this, the treated wastewater from underground mines is distributed to supplement community use. To enhance water management efficiency, the Company declared the Water Policy, to set the water management scope and targets as well as the standards for data collection and reporting on water resource utilization. There is also a plan for the evaluation of water footprints in the next phase in addition to disclosing the data on water use and water management through the Carbon Disclosure Project (CDP).

3.6 Risk from Social and Community Impact

The Company believes that "an industry will be strong only when it is developed in tandem with social and environmental responsibility". Accordingly, apart from emphasizing preventive measures to minimize impact on the communities and society such as environmental and safety impacts, the Company also promotes community development activities that stress "engagement" between stakeholders, the Company, communities and the government sector. The UN Sustainable Development Goals (SDGs) have been adopted in devising community development plans and activities aiming to lay the foundation and prepare the communities for future growth in various dimensions so that they become strong, sustainable and self-reliant. A social and community risk management has been carried out as follows:

- The Company has formulated a Standard Practice Manual: Community Development Work, which includes mitigation of risk from social and community impact. The manual provides community development officers a clear practice guideline to be applied in all operational areas. This guideline is regularly updated to appropriately respond to changing situations.

- The Company has also allocated sufficient Community Development Officers (CDO) at each mine site to work closely with the communities in improving their quality of life. These officers also act as mediators between the Company and communities to build mutual understanding. The CDOs can also assess the sensitivities or detect harmful incidents at an early stage allowing them to find timely solutions or mitigation measures.

- The Company places importance on community engagement in every stage of development, starting from drawing up a community development plan which meet community needs and are consistent with the government's development plan. A Community Consultative Committee (CCC), consisting of representatives from the local government, local communities, and the Company, work on planning, monitoring progress and solving problems for the optimal benefits for the society and the betterment of the local people. This is also a means to prevent or reduce potential risks.

- Community development projects are carried out to meet each community's needs, stressing community engagement and capability-building so that the community can become an independent and sustainable community. The projects supported by the Company cover six areas of development: 1) economy and income generation, 2) education, 3) basic infrastructure, 4) hygiene,

sanitation, and primary health care, 5) environmental conservation, and 6) social and cultural promotion and community relations. These projects have contributed to the better quality of life of the locals in the communities surrounding mining sites and business units, leading to satisfaction and a good relationship with the Company.

- Close inter-departmental collaboration enables the Company to jointly plan, monitor and evaluate risks against community and society. The Company can also prevent and mitigate such potential risks arising from the Company's operations, especially the ones that relate to the environment, safety and product transportation.

- The Community Development Division can be an effective communication channel between the Company and communities and related external organizations such as local administration organizations, government sector and media. This enables the Company to receive immediate alerts for the impacts, and coordinate with involved departments to find a prompt response.

- The Company has cooperated with contractors in Indonesia on community development work. Many of the major contractors have carried out community development operations, so the Company work with them from the planning process, budget allocation and staff allocation, to exchange of knowledge, expertise, and information. The cooperation enhances the efficiency and benefits wider local people while reducing redundancies of social development work in the communities.

- Follow-up assessments by all levels of management, including site visits, are regularly conducted, allowing the management to track the

progress of their work. This is also an opportunity for the management to meet with community leaders and members and get suggestions for efficiency improvement to ensure that the Company has run careful operations with a clear working plan and well-defined risk management that causes no adverse impacts but benefits, satisfying both the communities and the society.

- Stakeholder satisfaction surveys on community development programs in Indonesia are conducted every year to assess satisfaction and to identify concerns and potential risks as well as to elicit suggestions from the communities and related parties. The results of the surveys are used to set benchmarks for improvement to ensure that the Company's operations benefit and satisfy all stakeholders.

4. Risks in Compliance with Applicable Laws and Regulations

Recognizing the adverse consequence of compliance risk to the Company's operation and reputation, Banpu is committed to compliance with laws and regulations relevant to its operations both in Thailand and abroad. Moreover, the Company has developed processes and tools to manage the risks arising from the changes in regulations and policies in every host country it has invested. The executives in each country are responsible for monitoring changes in both local and national regulations and policies, and communicating with governmental and private organizations, communities and other stakeholders about the changes. The Company also hires local consulting firms to help interpret local laws and provide suggestions on legal compliance. A compliance unit regularly monitors the Company's operations to ensure full compliance with relevant laws and regulations.

• Risks from Policy and Regulatory Changes in the Countries Where the Company Has Invested

The overseas investment brings with it the possibility of risks associated with any regulatory change in the country of investment. In 2018, the countries where regulations, rules and policies were substantially changed include Australia, China, Indonesia and Japan. The Company managed these risks as follows:

People's Republic of China

- On 22 December 2016, the Chinese government announced a three-year action plan on air pollution control for 2018 to 2020 (Fight for Blue Sky) to control and reduce pollution in 82 cities across China. The regions of Beijing, Tianjin, Hebei, Shandong and Henan will be required to reduce coal consumption by 10%, while the Yangtze Delta Region will have to cut coal use by 5%. The newly-announced plan also restricts that coal-fired power plants whose fuel consumption rates are equal to or greater than 65 tonnes per hours reduce energy consumption and improve production efficiency. The Company has mitigated this risk by reviewing its business direction and strategy in China to adapt to the new law by increasing production efficiency and pursuing investment opportunities in clean energy business such as natural gas.
- On 30 December 2016, the Chinese government announced the 13th Five-Year Plan for Economic and Social Development of the People's Republic of China as follows:
 1. Set target to reduce 800 million tonnes of coal capacity from ineffective coal mines by 2020 and increase 500 million tonnes coal capacity from effective coal mines by an approval of new coal mines opening to replace the closed mines to maintain coal market equilibrium.

2. Reduce the total number of coal mines to 6,000 by 2020.

3. Target coal production by 2020 to be at 3,900 million tonnes, over 80% of which will come from mines with a minimum annual capacity of 1.2 million tonnes, and less than 10% will come from mines with an annual capacity of lower than 300,000 tonnes.

4. Stop approving new coal mines from 2016 to 2018.

5. Approve new coal mines with a minimum annual capacity of 1.2 million tonnes after 2018.

6. Promote imports of high quality coal, especially coke, and limit imports of high-sulfur coal with low heating value.

7. Promote the exports of coal.

Since April 2018, the Chinese government has decreased the coal import to balance the demand and supply and maintain the profitability for domestic coal producers. Apart from that, the government added a number of monitoring and safety measures for coal mines, thus, raising coal prices and benefiting coal companies in China.

- In 2015, the Chinese government launched the electricity system reform by announcing the Power of Transmission and Distribution Pricing Reform that limits monopolies and increases competition by cutting costs and enhancing quality, resulting in lower electricity price that is fair to both business and individual customers. However, in 2018, this policy did not have a significant impact on the Company's power plants; the Company managed to enter into the power purchase agreements. The Company was also able to sell the surplus capacity to the competitive markets in the form of power tariff and dispatch.

- In April 2018, the Chinese government announced a policy to restrict coal imports by cancelling coal delivery to several ports in southern and eastern provinces. The Company did not suffer much from the policy because there was demand for coal from power plants in the south as well as from the coal shortage in the market which led to a price hike. Nevertheless, the Company mitigated the risk from coal delivery cancellation in particular ports by using other nearby ports.

- On 30 August 2018, the Hebei provincial administration office announced the cut in the standard electricity prices by asking power plants on provincial electricity grid to decrease the benchmark prices used in pricing formula by CNY 0.0568 per unit for power plants connected with the northern grid and by CNY 0.054 per unit for power plants connected with the southern grid. The price cut was effective on 1 September 2018 affecting the purchasing price for Luannan and Zhengding combined-heat and power plants. The two power plants responded to the price cut by planning to improve production efficiency and to control production costs.

Republic of Indonesia

- On 5 January 2018, the Ministry of Energy and Natural Resources proclaimed Law No. 23K/2018 about Domestic Market Obligation (DMO) in 2018, which required that coal producers sell at least 25% of estimated and planned output according to Rencana Kerja dan Anggaran Biaya (RKAB) license. Those who fail to meet the requirement will face a penalty; their production quotas shall be deducted from the RKAB license in the following year and their export quota shall be cut. The Company strictly complied with the law by

selling more coal in the domestic market and buying quotas from domestic producers whose DMO has exceeded the minimum limit.

- In March 2018, the Ministry of Energy and Natural Resources proclaimed Law No. 1395/2018 and No. 1410/2018 about selling price of coal for power generation for the public interest at USD 70 per tonne for the pre-specified type of coal. The price was subject to change according to the set formula. The restricted sales period was valid from 12 March 2018 until 31 December 2018 for up to 100 million tonnes of coal per year. The Company adjusted the sales portfolio to make a profit in other markets.

Japan

- On 1 April 2017, the Ministry of Economy, Trade and Industry (METI) declared an addendum about the reduction of the period of Feed-in Tariff (FiT) agreements. Under-development projects which were granted on-grid transmission dates since 1 September 2016 shall achieve the Commercial Operation Date (COD) within three years (Three-year Rules) starting from 1 April 2017. The projects that could not fulfill the agreement will have to use another COD on 30 March 2020 which will result in a shorter period of Feed-in Tariff agreement because of the project delay.
- On 5 December 2017, METI announced additional amendment on the Feed-in Tariff (FiT) agreements for under-development solar projects with a capacity exceeding 10 KW which meet the following conditions:
 - Referring to the announcement on 1 April 2017, projects under such conditions will have their Feed-in-Tariff lowered to JPY 21 per unit unless they meet the following requirements:

1. Projects whose “construction plans” were approved by related authorities before 5 December 2018 or
2. Projects which commenced construction before 5 December 2018 or whose “construction plans” are approved by related authorities before 30 September 2019 and will commence construction by 31 October 2019. However, the relevant projects must apply submission for Grid Connection within 31 August 2019 and get approval within 30 September 2019 to keep the current FiT price.

In addition, such projects need to achieve Commercial Operation Date before 30 September 2020 otherwise their FiT period will commence from 30 September 2020, which means they suffer a shorter period of Feed-in-Tariff agreement because of the project delay.

The Company had studied the details of the amended laws and assessed the risk against three relevant projects and kept a close watch on the progress of those projects to file the application for approval in time to be eligible for the exception clause.

The projects have to submit the grid connection application by 31 August 2019 and get approval by 30 September 2019 to maintain the Feed-in-Tariff rate. Moreover, the projects have to achieve Commercial Operation Dates (COD) by 30 September 2020; otherwise, they will suffer a shorter period of Feed-in-Tariff agreement because of the project delay. The Company has closely monitored the projects on their submission

of the grid connection application and their progress to be eligible for the exception in order to mitigate the risk facing the projects under development.

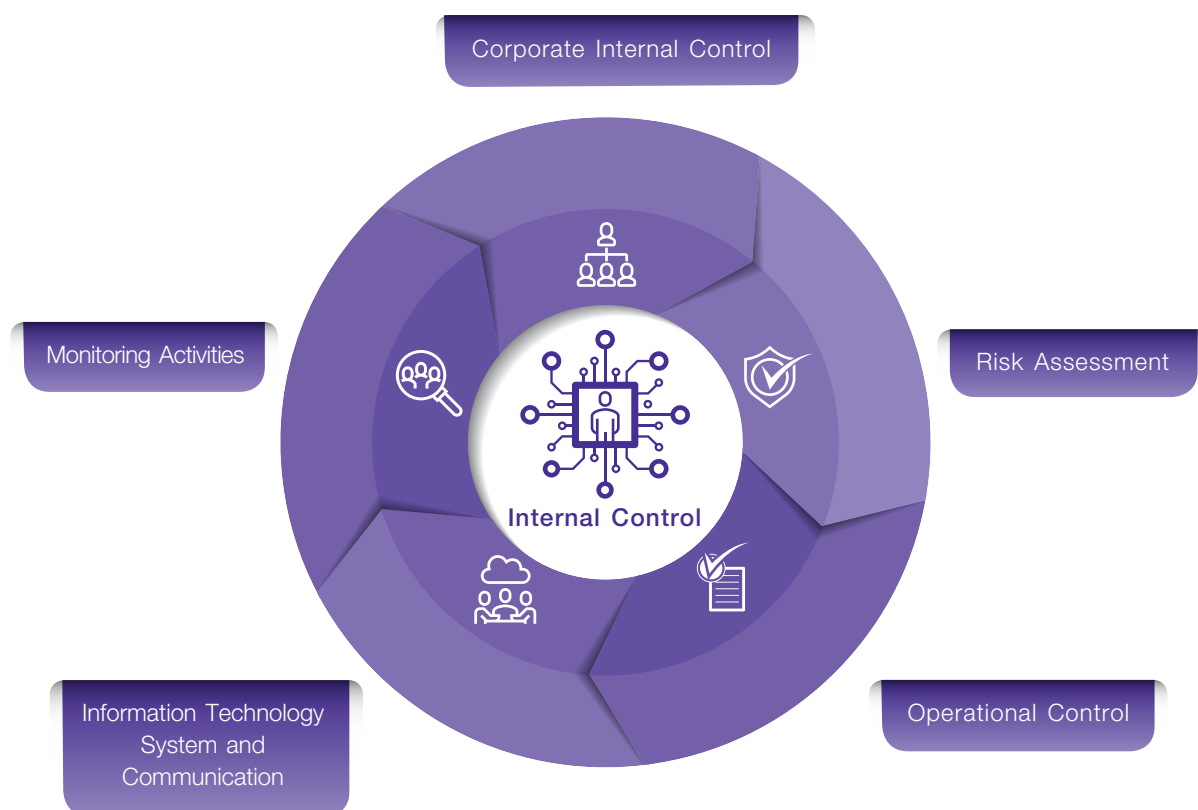
- The Japanese government announced a policy change from FiT scheme throughout a project's lifetime to bidding scheme for projects that were approved after 1 April 2017. The change might affect the investment return for new projects under the bidding scheme. However, the Company mitigated the risk by finding ways to gain such competitive edge as financial cost-cutting or co-development of projects with business partners.

5. Emerging Risks

Emerging risks are risks that have never been in existence, or the Company has not yet encountered, but may cause adverse effects as unexpected future changes may occur, such as political, legal, social, technological, physical environmental or natural changes. In some situations, the impacts of changes

cannot be foreseen, or risks cannot be precisely identified. The Company's risk assessment highlighted three areas of emerging risks over the long term: disruptive energy technology, digital transformation that impacts the technology landscape and consumer behaviors (Mega Trends) and climate change, which may lead to changes in laws and regulations, for instance, the 24th Conference of Parties to the United Nations Framework Convention on Climate Change (COP 24). The Company managed such risks by collecting information and reports on events that can become emerging risks from various sources, such as the World Economic Forum, to forecast future scenarios and adapt its strategic plan to accommodate changes. In 2018, the Company adapted its corporate strategy by focusing on renewable energy development through the integration of modern technologies into power generation to respond to changes in the global environment, including higher demand for clean energy and increased growth in renewable energy consumption. The Company also invested in wind-powered electricity in Vietnam and power storage business in Singapore, namely, Durapower Holdings Pte. Ltd. to diversify into energy storage business in the future.

INTERNAL CONTROL



Banpu places great importance on an efficient and effective internal control system in accordance with international internal control standards of the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2013). The Company has also applied the Three Lines of Defense model as part of risk management, internal control and regular company-wide results monitoring to ensure efficiency and effectiveness of internal control, the reliability of financial statements and other reports, as well as legal and regulatory compliance. This enables the Company to achieve its mission and strategic goals, which will drive sustainable growth under the Board of Directors and the management's good governance based on the principles of corporate governance and transparency.

At the Board of Directors' Meeting on 31 January 2019, the Board evaluated the sufficiency of the internal control system based on the Security Exchange Commission's evaluation form prepared by the management and reviewed by the Audit Committee. The overall evaluation results revealed that the Company has sufficient, appropriate and efficient

internal control system and risk management that meets international standards covering the organizational level to activity level. This assures that the Company is able to achieve its predefined goals. The internal control system consists of five key components, which can be summarized as follows:

1. Corporate Internal Control

To achieve its business goals, Banpu promotes an efficient and effective internal control environment under the principle of good governance and the Code of Conduct. The Company has established an appropriate organizational structure to accomplish the following outcomes:

1. Internal checks and balances
2. A clear chain of command
3. Authorization levels in accordance with executive ranks to ensure effective management and operations
4. Clearly defined responsibilities in major operational units to enable checks and balances
5. Formulation and periodic review of important policies and practices in response to changes in the internal and external environment

In 2018, the Company revamped its corporate culture as “Banpu Heart,” which comprises being “Passionate, Innovative and Committed,” and communicated with employees to ensure that everyone will move forward together by strengthening from within to attain the goal of being a leading integrated energy solutions company in Asia-Pacific.

The Company’s human resources management policy stresses achieving recruitment and human resources management standards, which are aligned with the corporate culture. The compensation system is designed to provide appropriate compensation linked to performance. In addition, the Company prioritizes capability development for its employees, regarding their technical skills, hard skills and soft skills, in order to equip them with essential knowledge and skills for their effective operations. Additionally, the Company has a learning roadmap specifically developed to respond to each business unit’s

objectives and has created individual development plans as well as job rotation and succession plans.

With a commitment to integrity and transparency, Banpu adheres to good corporate governance and the Code of Conduct. Moreover, the Company has Anti-Corruption Policy and practices as well as a Whistleblower Hotline. The Company was recertified as a member of Private Sector Collection Action Coalition Against Corruption (CAC) on 7 June 2018.

2. Risk Assessment

The Company places top priority on the management of risks and the preparation for changes caused by both internal and external factors that affect the operations at the department, business unit and corporate levels. The Risk Management Committee is responsible for devising a policy and risk management methods, overseeing and monitoring the overall management of critical risks. The management and all employees also take part in the assessment and close monitoring of risks caused by internal and external factors in all areas, namely strategy, operation, finance, regulatory compliance, information technology and corruption. Moreover, there are the identification of potential risk and the evaluation of the potential impact of the risk. The risk management team is set up to regularly monitor the implementation progress of risk mitigation plan and measures, and submit a report on risk management situations reviewed by the Audit Committee to the Risk Management Committee. The report is quarterly submitted to the Board of Directors.

In 2018, The Company revised its risk management policy and formulated the Charter of the Risk Management Committee and determined risk appetite to improve efficiency and respond to the complexity and disruption in business models, technologies, as well as laws and regulations.

3. Operational Control

Banpu has been operating its business under a sound and effective system of internal control. The Company has put into place internal control procedures to oversee business investments based on the corporate structure to ensure alignment with policies, practices, and strategic directions. The operational control activities are as follows:

1. Formulation of policies, regulations and practices in explicit writing
2. Management, supervision and monitoring of operations to ensure compliance with the Company's action plans, rules, regulations and practices as well as external compliance
3. The clear roles and delegation of authorities with an effective checks and balances system
4. Establishing a clear policy on related parties transaction based on the maximum benefits for the Company on a similar basis to the transactions at arm's length
5. Identification of Key Performance Indicators (KPI) with alignments to the Company's goals
6. Safeguarding of assets to prevent misuse of the assets for personal purposes
7. Establishing an appropriate and effective IT control system
8. Regular knowledge sharing and training about internal control

Aside from this, the Company has improved procedures to align with the Greener & Smarter strategy aiming to move forward to being a leading integrated energy solutions company in Asia-Pacific. The Company highlights environmentally-sound business and deployment of cutting-edge technologies

to increase efficiency such as Digital Transformation Project, Carbon Policy, and Operational Excellence Standard.

4. Information Technology System and Communication

The Company has developed an effective and secure information technology (IT) system in compliance with applicable laws to enable sustainable business expansion. It has aligned its IT Master Plan with digital technology and business demands by controlling the acquisition, development and implementation according to the IT Service Delivery Model. The Architecture Review Board and Enterprise Architecture under the supervision of Information Technology (IT) Department are responsible for monitoring enterprise architecture and technology across Banpu Group to ensure transparency, flexibility and alignment with the Greener & Smarter strategy.

The Company has devised a long-term Banpu Digital Transformation (BDX) plan to integrate digital technology into the work process and an IT general control system. It places great importance on the safety of the IT system along with the implementation of the BDX plan. In 2018, the Company hired the third party to conduct Digital Resilience Assessment (DRA) to assess cybersecurity risks and readiness to respond to emerging threats and revised Corporate IT Policy to ensure adequate preparation toward changes. In addition, the Company adapted the assessment procedure and improved flexibility to harness the potential of digital technology and integrate it into business in a timely manner. For example, such a highly flexible technology as Cloud Computing is used to save installation time, improve work process and reduce IT and maintenance complexity.

Apart from that, the Company emphasizes the communication of important messages via website and international connection via Google Collaboration Platform, including emails, sites, drive, sheets, forms and Hangouts as well as Electronic Document Management System, to facilitate prompt and effective information exchange within and outside of the organization. Information security is ensured by clearly defining access rights to information according to duty and use. The Company also provides various effective channels for internal communication, such as emails, PR activities and meetings, to enhance collaboration and concerted efforts to achieve the Company's goals. For external parties, the Company's Investors Relations and Corporate Communications are responsible for information disclosure and providing equally accessible information to all stakeholders.

In 2018, Banpu unveiled the company's new brand promise "Our Way in Energy" to fulfill its vision of the Asian energy company at the heart of innovation, technology and sustainability. Accompanying the new brand promise are the redesigned logo and the new corporate identity that represent its position as the integrated energy solutions company in all 10 countries in which it operates. The revamped identity will reflect the company as always up-to-date, dynamic and constantly evolving and developing products and services to serve the needs of the business sector, society and communities.

5. Monitoring Activities

Banpu has implemented a monitoring system both at the management and operational levels. There are regular reviews and monitoring of performance by department heads and division managers, and executive meetings are held regularly to monitor whether the performance meets the predefined goals. Global Internal Audit and Compliance Department's responsibilities can be divided into two parts:

- **Global Internal Audit Department**

is responsible for auditing and assessing the efficiency and effectiveness as well as sufficiency of the Company's internal audit system and performance in compliance with the corporate regulations and standards. It emphasizes risk-based auditing, and advises on the improvement of work processes and monitoring the performance to ensure appropriate and timely corrective actions are taken.

- **Corporate Compliance Department**

is responsible for auditing and monitoring external compliance with applicable laws and regulations, and reporting audit and monitoring results to the management and the Audit Committee on a regular basis.

SUSTAINABLE DEVELOPMENT

Sustainable Development Policy

At Banpu, we have a strong belief in the norm that **an industry would be vigorous only when it is developed in tandem with social and environmental responsibility**. We are dedicated to conduct our business with good corporate governance and management of economics, environmental, and social risks and opportunities. In every location, we put sustainable development framework into practice through the effective implementation of international best-in-class standards to create competitiveness and value creation to all stakeholders, as follows:

Competitiveness

People

Respect for employees' human rights by fair treatment,
Build strong corporate culture and employee development,
Enhance leadership and technical competency.

Operational Excellence

Focus on the flexible and efficient business process along the supply chain, with innovation and continuous improvement, provide superior products and services to customers and enhance customer relationship management and seek for new business opportunities.

Value creation to stakeholders

Compliance

Adhere to good corporate governance and comply to stipulated laws and regulations, including international standards.

Occupational Health and Safety

Care for occupational health and safety of our employees and business partners by the alignment of 3 safety principles; Zero incident, Zero repeat and Zero compromise, to eliminate fatalities, injuries and occupational illness.

Environment

Balance business development alongside environmental protection, study and evaluate environmental impact before project implement as preventive measure in every projects, reduce or optimize resource utilization, provide pollution prevention at sources and proper environment management along supply chain.

Community

Create sustainable values to our host community through community engagement, tax contribution, local employment and other programs toward stakeholders' acceptance.

In implementing this policy, we establish measurable indicators to monitor and review, in order to ensure that our Sustainable Development policy would be practically achieved.



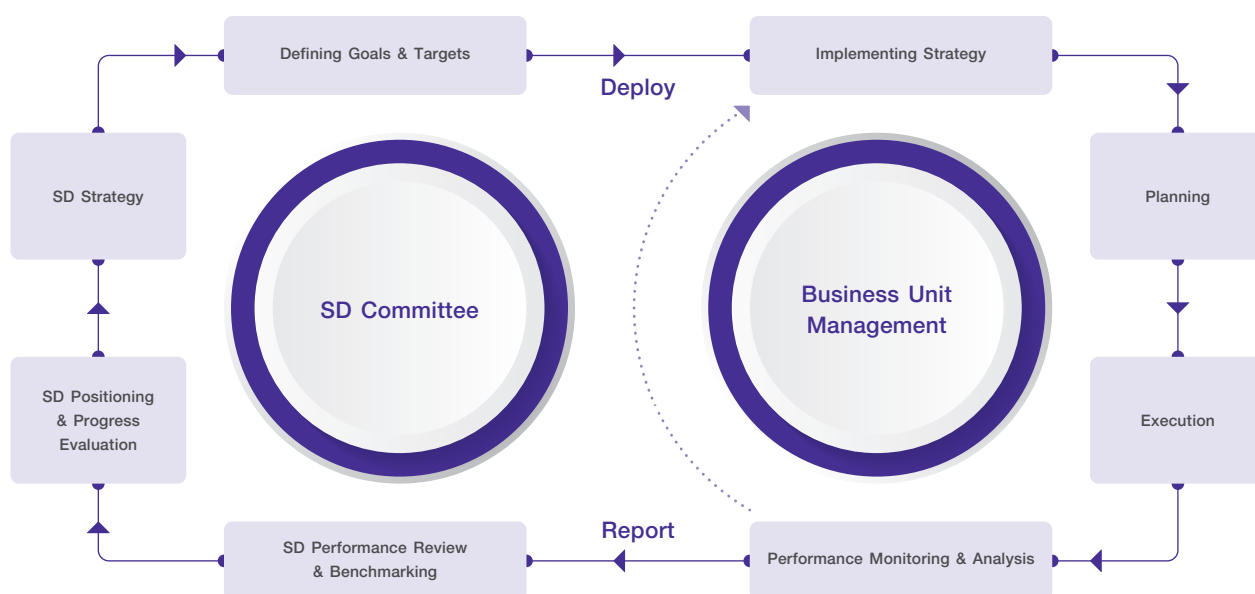
Sustainability Strategies

With a vision to be **“The Asian energy company at the heart of innovation, technology and sustainability”**, Banpu endeavors to create trustworthiness and sustainable value for stakeholders on the basis of social and global responsibility. It incorporates local and international standards in setting sustainable development strategies; for instance, UN's Sustainable Development Goals (SDGs) and UN Global Compact, which are used as guidelines for determining sustainable development issues. Aside from this, UN Guiding Principle on Business & Human Rights and Universal Declaration

on Human Rights are used as policy inputs for setting up a human resources management policy and a human rights policy.

Banpu's sustainability issues are not only limited to the Company's operations but also cover all business partners throughout the value chain. The Company stresses value creation for business development as well as incubating innovation with synergy. All business units are in full alignment in terms of sustainable development and maintaining a balance between enhancing a competitive edge and creating value for all stakeholders.

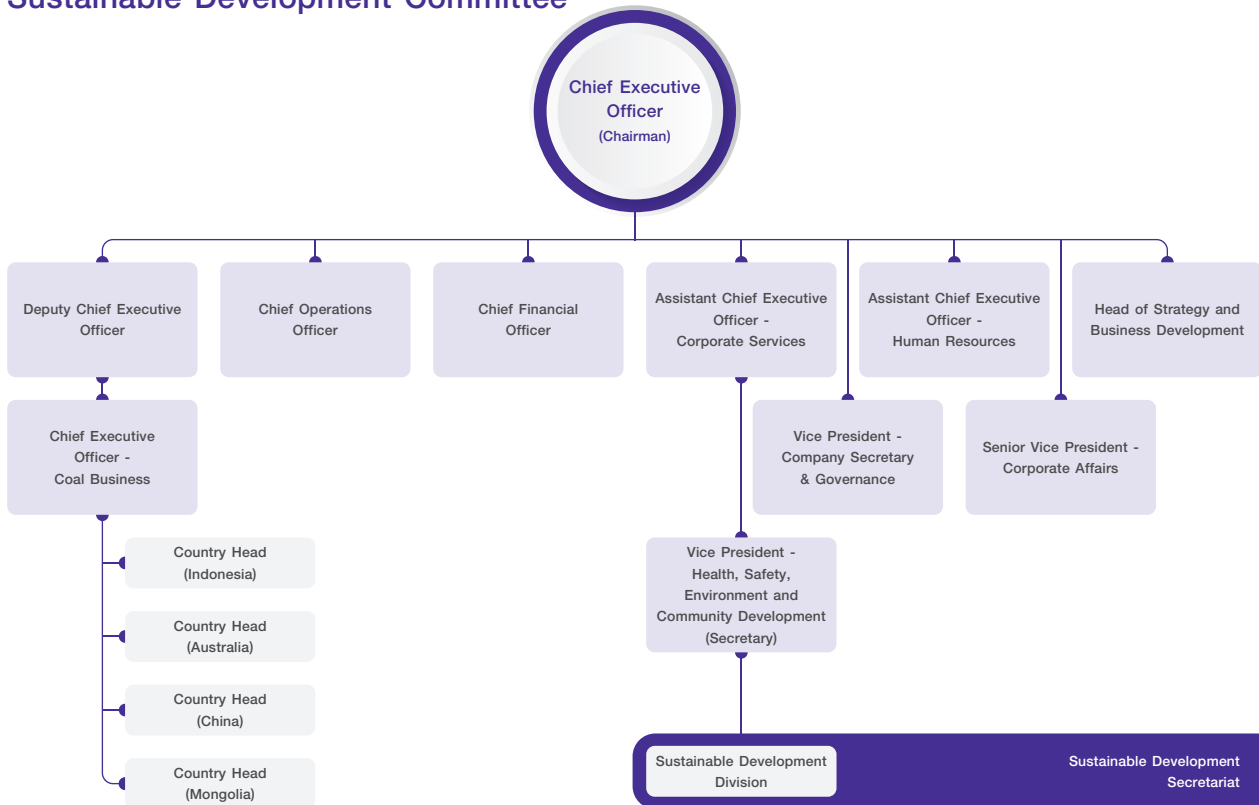
Managing Sustainable Development



Banpu drives sustainable development by integrating sustainability management into operations management strategies. By doing so, each unit assesses economic, social and environmental risks, which have possible impacts on the Company's sustainability and stakeholders. The risk assessment report is then submitted to the Risk Management Committee, the Audit Committee and the Board of Directors, respectively. The Board of Directors reviews the report to define corporate strategies

and provides suggestions on the management of those risks to the Chief Executive Officer, who is in charge of implementing the strategies. Additionally, the sustainability issues are incorporated in the Key Performance Indicators (KPIs) of the Chief Executive Officer and senior management. The compensation of business unit management will then be evaluated according to the KPIs.

Sustainable Development Committee



At Banpu, sustainability management is under the supervision of the Sustainability Development Committee chaired by the CEO. Members are top executives and heads of business units in all the countries where Banpu has operations. The SD Committee has the following duties and roles:

- Monitor and evaluate sustainable development performance in the past year.
- Devise and review a policy or management system standards to enhance competitive advantage and ensure that the Company's business and social and environmental responsibility grow in tandem.

To ensure smooth sustainability management, the Sustainable Development Committee meeting is held biannually to review and evaluate the sustainability performance of each business unit according to the sustainability management plan, as well as to

consider the stakeholder analysis and material issues. The analysis, together with the Board's suggestions, are considered to devise additional policies, management standards or practices to enhance sustainability and maximize stakeholder's value in the following year.

Human Rights Policy

Banpu prioritizes respect for human rights and has incorporated the policy into its sustainable development strategy. The Company respects human rights principles both locally and internationally. Observing UN Guiding Principle on Business & Human Rights, and the Universal Declaration on Human Rights, the Company strives to find measures to prevent human rights violation and mitigate the impacts caused by the Company's operations. These practices are undertaken as part of fostering the corporate shared value.

Tax Management Approach

Being a good corporate citizen in every country where it operates is the Company's top concern and is considered as one of the sustainable development strategies. In addition to compliance with applicable laws and regulations of each country, the Company demonstrates its commitment to transparency through disclosure of tax payments. Moreover, all business transactions between Banpu's subsidiaries are based on transparency and fairness for the benefit of the host countries and all stakeholders.

Sustainability Reporting

The Company discloses sustainability performance data to stakeholders through Sustainability Report since 2011 to ensure transparency in sustainability management. SD reports are accessible via the Company's website. The preparation of the reports strictly follow the Global Reporting Initiative (GRI) Sustainability Reporting Standards.

Having continuously improved the quality of SD reporting, Banpu received Best Sustainability Report Awards from joining Sustainability Report Award program hosted by Thailand's Securities and Exchange Commission (SEC), the CSR Club of the Thai Listed Companies Association and Thaiphath Institute.

Global Recognition for Sustainability

In 2018, Banpu has been recognized as a member of Dow Jones Sustainability Indices (DJSI) for the fifth consecutive years.

Banpu receives another Gold Class 2019 in Coal & Consumable Fuels sector from the sustainability ranking by Robeco Sustainable Asset Management (RobecoSAM).

National Recognition for Sustainability

The Company was granted SET Sustainability Award of Honor 2018 from the Stock Exchange of Thailand.

The Company was included in Thailand Sustainability Investment (THSI) list announced by the Stock Exchange of Thailand for the fourth consecutive year.



HUMAN RESOURCES MANAGEMENT

Banpu has Always Adhered to the Following
Three Human Resources Management Principles



Equitability

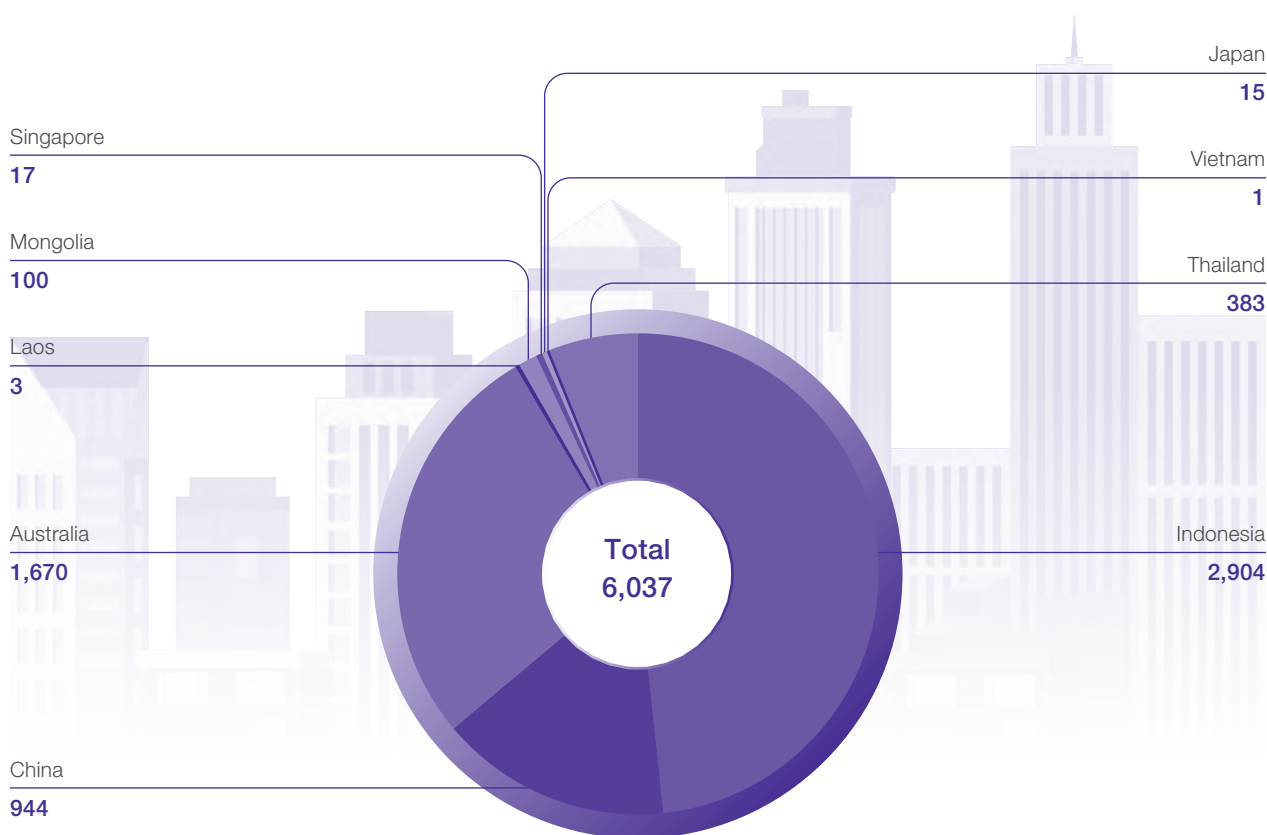


Performance Base



Competency Base

Since Banpu's operations are based in 10 countries, the Company has prioritized diversity of workforce regarding race, language, culture, knowledge, experience, ability and country to foster collaborative work environment, strengthen workforce collaboration and sustainably drive the Company's innovation. The number of the Company's and its subsidiaries' employees as of 31 December 2018 is as follows:



(Unit: People)

Banpu continued to thrive in 2018, driven by the joined forces of its three core group of businesses, namely the Energy Resources, Energy Generation and Energy Technology. The Company is ready to align its businesses to the changing scenarios; therefore, it has also aligned human resources management to the changes in the Company to maximize employee potential under the concept “Banpu Working Mobility”. The Company promotes upskilling its employees by encouraging them to build new skills and create a clear career path as well as increase their mobility skills to prepare them for new businesses, i.e., by supporting cross-sectional transfer both in Thailand and abroad. Important human resources strategies deployed in 2018 are as follows:

1. Global Human Resource Information System (HRIS) Project

All aspects of employee information need to be collected using the same standard and stored in the database that is easily accessible to facilitate prompt analysis and management. The database also needs to be designed as a single source of information to enable workflows. In 2018, the Company officially launched the project to develop a Human Resource Information System (HRIS) with the management and employees from all host countries and expected to complete the system testing and launch the system by 2019.

2. Succession Planning and High Potential Management

Succession planning and high potential management is one of the strategies to improve the capacity of corporate human resources planning and management in order to ensure smooth transition management and respond to business expansion.

In 2018, Banpu’s Succession Planning Committee selected successors for the Company’s high-level executives and closely monitored their potential development. The Company has been collaborating with consultancy firms to utilize the successors’ in-depth information regarding competency and personality

to expand their duties and responsibilities with increasing challenges to prepare them for future critical positions.

3. Effective Organization Structuring

In 2018, Banpu and its subsidiaries reviewed the organizational structure and restructured many units to align them with more diverse business directions. Many sections have been restructured to have a shorter line of command, and new units were added to drive changes in nature of work under the concept of “Transformation.” The Company has been promoting operational excellence and encouraging cross-functional collaboration such as offering new positions for the new business in Indonesia, restructuring the organization by establishing a specific unit in Australia to improve production efficiency, developing the organizational structure in China to strengthen the strategic plan and new business development as well as restructuring the organization in Japan to respond to diverse business operations.

4. Banpu Leadership Development

Leadership and employee capacity development is one of the important policies that the Company has continuously promoted in order to facilitate business expansion and enhance competitive advantage.



To offer a development program that suits each level of employees and is best aligned with the business direction, in 2018, Banpu worked with consultancy firms and leading leadership development and management training institutes from Thailand and abroad to design and develop Leadership Development Program for the management and employees. The Company designed an innovative training program using such a tool as Learning Application Project (LAP), which can efficiently apply to the business requirements.



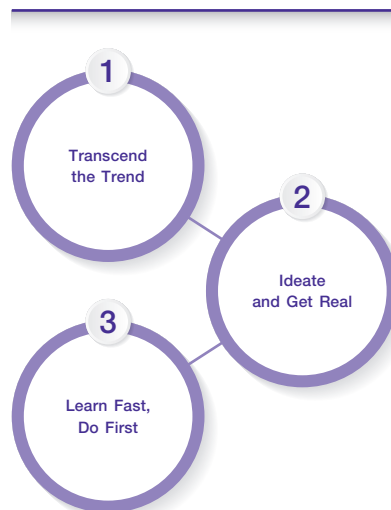
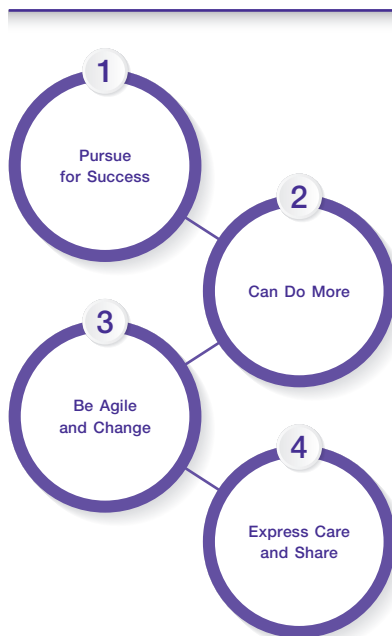
The Company also stresses the importance of preparing employees with a new set of skills under the concept of “Digital Transformation”. Accordingly, it has established the Digital Academy to enhance employee potential so that employees can mobilize the Company to become a leading integrated energy solutions company in Asia-Pacific.

5. Fostering the corporate culture, “Banpu Heart”

Banpu made a great success in fostering “Banpu Spirit”, a corporate culture which all management and employees had adhered to for the last 14 years since 2004. In 2018, the Company decoded “Banpu Spirit” and elevated and transformed its corporate culture to “Banpu Heart” to align with the Company’s revamped vision which is ‘the Asian energy company at the heart of innovation, technology and sustainability’. “Banpu Heart” consists of the following three shared corporate values; Passionate, Innovative and Committed.

Banpu Heart

Passionate Striving for the Future Innovative New Ideas, New Solutions Committed Success is the Only Option





In 2018 - Banpu strengthened corporate culture by unveiling **“Banpu Heart”** to Banpu Group’s companies in Thailand and abroad and carried out a wide range of activities to create a true understanding of the new corporate culture as follows:

- Organized “Banpu Young @ Heart” with the aim of creating an understanding of the new corporate culture **“Banpu Heart”**. In this event, innovations were employed for communication.
- Launched the corporate culture **“Banpu Heart”** to employees in China, Indonesia, Singapore, Australia, Japan and Mongolia to create an understanding of the new corporate culture, which is to be upheld and practiced by the management and all employees of Banpu.
- Banpu annually conducts a corporate culture and employee engagement survey. In 2018, the Company piloted its survey on the new corporate culture **“Banpu Heart”** in Thailand. The overall scores are high even though the communication just started for a few months, reflecting that employees are open to the new corporate culture and ready to align themselves to the Company’s business directions.

Apart from that, over the past years, Banpu has underlined the importance of a shared value “Innovative” through activities that promote creative thinking and ideas to encourage its employees to be more creative and innovative at work. This is the concept behind “Banpu Innovation Convention,” which has been organized for six consecutive years at the Bangkok Head Office in Thailand. At the convention, the best 11 innovative projects selected in the first round got the opportunity to showcase their innovations, including two teams from Thailand, four from Indonesia, four from China, and the other one from Australia.



CORPORATE GOVERNANCE

Corporate Governance Policy

The Board of Directors of Banpu Public Company Limited announced the implementation of the Corporate Governance Policy to directors, executives and staff at all levels in 2002. The Board annually reviews the policy to ensure compliance with business contexts, laws, regulations, rules and guidelines of related agencies. The Corporate Governance and Nomination Committee is delegated to conduct a preliminary review of the policy and submit the results to the Board.

In 2014, the Board of Directors approved a new edition of the Corporate Governance Policy and the Code of Conduct in order to stay current and adaptive to changing scenario as well as to comply with the Stock Exchange of Thailand (SET)'s regulatory changes. In 2018, the Board of Directors agreed to reconsider and review the Corporate Governance Policy and the Code of Conduct to comply with the Securities and Exchange Commission (SEC)'s Corporate Governance Code 2017 to achieve business goals and to maintain ethical standards for the benefits of all stakeholders.

The Company monitored and evaluated the effectiveness of implementation of the Corporate Governance Policy and the Code of Conduct in the organization based on the results of 2018 Corporate Culture and Employee Engagement Survey using "Committed" as an indicator. The respondents were classified according to the level of work and work location, and the results were satisfying.

Formulation of Corporate Governance Policy

The Board of Directors formulated the Corporate Governance Policy in writing as guidelines for the directors, executives, and staff to comply with. In 2018, the Board of Directors approved the review of the Corporate Governance Policy and the Code of Conduct in compliance with SEC's Corporate Governance Code 2017, which comprises 8 principles as follows:

- **Principle 1** Establish Clear Leadership Role and Responsibilities of the Board
- **Principle 2** Define Objectives that Promote Sustainable Value Creation
- **Principle 3** Strengthen Board Effectiveness
- **Principle 4** Ensure Effective CEO and People Management
- **Principle 5** Nurture Innovation and Responsible Business
- **Principle 6** Strengthen Effective Risk Management and Internal Control
- **Principle 7** Ensure Disclosure and Financial Integrity
- **Principle 8** Ensure Engagement and Communication with Shareholders



Communication of Corporate Governance Policy

Committed to compliance with the Policy and Practices on Corporate Governance and the Code of Conduct, in 2018, the Company set out action plans to promote corporate culture and corporate governance attitudes. The plans aim at educating and raising awareness among employees at all levels about the Corporate Governance Policy and the Code of Conduct through a wide range of activities as follows:

1. The Company regularly organizes an orientation session on the principles of good corporate governance for new employees.
2. The Company hosted an activity in a theme CG: Light the Way, aiming to communicate about corporate governance best practices and inculcate directors, executives and staff with an awareness to comply with the Code of Conduct with the belief that anyone can be a role model in corporate governance.
3. The Company communicated about corporate governance best practices to be followed by all employees and promoted two-way communication between the Company and employees so that they have a right understanding and comply with the expected ethical standards. In 2018, the Company introduced communication via Line App to increase access and to be a channel for employees to voice their opinions.
4. The Company published articles on corporate governance trends and directions in Thailand and ASEAN countries in the column "Corporate Governance" in Banpu Insight – a quarterly internal newsletter distributed to Banpu's companies in every country it has business operations. The topics presented were:
 - What is Open Data?
 - Banpu CG Communication – CG Light the Way
 - Banpu and Anti-Corruption
 - Committed – Banpu's commitment to ethical standards
5. The Company organized CG Day – an activity to raise awareness among employees about the importance of the Code of Conduct and commitment to integrity. In 2018, the Company presented the concept of "CG Light the Way." Corporate Governance Department and Banpu Change Leader (BCL) jointly hosted a special activity "Familing Your Story" to provide an opportunity for Banpu employees to present their ideas via a video clip about the new corporate culture "Banpu Heart," which consists of three attributes, namely Passionate, Innovative, and Committed.

Awards and Recognitions on Corporate Governance

Due to its commitment to corporate governance and creating equitable value for all stakeholders, in 2018, Banpu received the following awards and recognitions from both national and international institutions.

- In 2018, the Company was recertified as a member of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC). This is the second renewal of a 3-year certificate from the CAC, reflecting the Company's commitment to tackle all forms of corruption and Corporate Governance Policy and practices.
- The Company was listed on the 2018 Dow Jones Sustainability Indices (DJSI) for the 5th consecutive year, affirming the Company's leadership in creating sustainable growth and long-term values for shareholders.

- The Company was listed as one of the 142 companies with Excellence CG Scoring from the survey on corporate governance of Thai listed companies by the Securities and Exchange Commission (SEC), the Thai Institute of Directors Association (IOD) and the Stock Exchange of Thailand (SET).
- The Company received the SET Sustainability Awards 2018 in the category “SET Sustainability Awards of Honor,” for the second consecutive year from the Stock Exchange of Thailand.
- The Company was listed as part of Thailand Sustainability Investment (THSI) for the fourth consecutive year from the Stock Exchange of Thailand, confirming the Company’s commitment to sustainable growth and creation of long-term shareholder value.

Principle 1

Establish Clear Leadership Role and Responsibilities of the Board

Leadership Role and Responsibilities of the Board of Directors

Since 2009, the Board of Directors has explicitly formulated duties and responsibilities to the Board in “The Practices for the Board of Directors B.E. 2552, Banpu Public Company Limited”, which was amended in 2011, 2012, 2014, and 2017, respectively. The amendments were carried out in accordance with changing business circumstance, regulations, rules, and corporate governance guidelines. The Practices of the Board of Directors specifies compositions and rules about the Board, general qualifications of directors, qualifications of independent directors, expertise, terms of office and retirement, roles and responsibilities, and the Board of Directors’ meeting and voting.

The Board of Directors has a pivotal role in overseeing the formulation of the Company’s vision and mission, which are the Company’s goals to achieve a sustainable business. The Board monitors and supervises the Company’s operation to ensure goal achievement. The Board also reviews the Company’s vision and mission at least once every five years to ensure that the Company adheres to the predetermined business goals for sustainable development.

To determine the vision and mission of the Company, the Board of Directors and the Management have collaboratively devised a long-term strategic plan and business directions every five years for more than 20 years. The Board appoints and entrusts a CEO with clearly defined authorities and responsibilities to take charge of business management, development, and implementation of strategies. The CEO cascades management authorities to senior management in business units in Thailand in accordance with the delegations of authority.

Apart from that, the Board of Directors prioritizes business operations that maximize shareholders’ substantial benefits, with adherence to the principles of good corporate governance. Thus, the Board of Directors has aligned the Corporate Governance Policy and the Code of Conduct with the Company’s vision, mission, business credo, values, principles and recommendations to ensure clarity and convenience for directors, executives and staff. Employees are clearly advised about what they should and should not do, about standards of practice that the Company expects and adheres to in all operations concerning employees, shareholders, customers, partners, creditors, competitors and society at large, all of which concretely comply with the Corporate Governance Policy.

Banpu entrusts directors, executives, and all staff with a duty and a responsibility to acknowledge, understand

and comply with the Company's policies and guidelines as set forth in the Code of Conduct. All employees must sign an acknowledgement of and comply with the Corporate Governance Policy and the Code of Conduct. Promotional materials and activities are created to improve awareness and understanding among employees both domestically and abroad. The Company also assigns management in each area of operations to ensure that employees under their supervision know, understand and strictly comply with the policies and guidelines. The employees at all levels must act as good exemplars.

In addition to the standard practices stipulated in the Code of Conduct, the management and employees collaboratively determined the "Banpu Heart" to nurture shared values and good corporate culture for all levels of employees both in Thailand and abroad.

Principle 2

Define Objectives that Promote Sustainable Value Creation

Define and monitor a strategic approach to sustainability

Based on the Board of Directors' guidance and suggestions, the Management formulated and presented to the Board the business direction, a long-term strategic plan, an action plan and budget and an annual manpower planning. The Board will openly share opinions and discuss with the Management to reach a mutual agreement before approval.

In 2018, the Board of Directors and the Management collaboratively worked on strategic plans and business directions for the years 2019-2020, in the 7th Board meeting in July and the 9th Board meeting in September 2018, to accommodate the rapidly changing business environment. Risk assessment and mitigation plans were carried out in preparation for future scenarios.

The Board of Directors devised business strategies and a strategic plan for the next five years based on the sustainable development plan, focusing on the creation of competitive advantage and stakeholder value as well as adaptability to changes in business and industry. Supervision of the plan implementation is a regular agenda of the Board's monthly meetings. In July 2018, the Board of Directors delegated the Management to review if the Company's annual plan and strategic plans were successfully implemented. The Board will provide suggestions or comments on any improvement where necessary.

Principle 3

Strengthen Board Effectiveness

Balancing of Power by Non-executive Directors

The Board of Directors ensures that the proportion of its existing directors is appropriate to the Company's size. At present, Banpu's Board of Directors consists of 12 members. One of them is an executive director; seven are non-executive directors, and four are independent directors, which accounts for 33% of the Board.

In 2018, the Corporate Governance and Nomination Committee reconsidered the composition of the Board with regards to the proportion of non-executive directors and independent directors, and concluded that the proportion of non-executive directors was appropriate.

Consolidation or Separation of Office

The Board of Directors requires that its Chairman and CEO be different persons. Their roles, responsibilities and authorities are clearly separated to achieve a balance between management and good corporate governance.

The Board of Directors' Meeting

The Board of Directors convenes at least once a month on the last Thursday of each month. Any additional meeting may be held if necessary. At the meeting, there are clear meeting agenda items. A complete set of supporting documents is sent to the Board of Directors at least seven days in advance of the meeting to allow the Board an opportunity to properly review the agenda before the meeting. Adding an agenda item after documents are distributed to the Board is allowed only when it is extremely necessary and justified, and when the item has been approved by the Chairman of the Board. Each meeting lasts approximately three and a half hours. During the meeting, all directors may openly voice their opinions. The Chairman of the Board must summarize views and board resolutions. If a director has a conflict of interest in an issue being discussed by the Board, the director must leave the room when the matter is considered.

Minutes of all the meetings are recorded in written form and after approval are signed by the Chairman of the Board and the Company Secretary. Records of the meetings are kept as hard copies and scanned electronic files, to facilitate quick reference for directors or related persons. These also include other documents attached with particular agenda. All are kept secure for reference for at least five years with a safeguard system to prevent any alteration and other risks of catastrophe.

In 2018, the Board of Directors and Sub-Committees meetings are shown in details as follows:

Meeting of Non-Executive Directors

On 17 November 2018 during 10.00 am -12.00 pm, 10 non-executive directors convened a meeting on the following agenda:

1. Director Nomination to Replace Retired Director
2. Senior Management Succession Plan
3. CEO Performance

Name	Title	Terms of Office	2018 Meeting Attendance					2018 Annual General Meeting of Shareholders (AGM)
			The Boards of Directors	Non-executive Directors	The Audit Committee	The Corporate Governance and Nomination Committee	The Compensation Committee	
			Total 12 meetings	Total 1 meeting	Total 10 meetings	Total 4 meetings	Total 9 meetings	
1. Mr. Chanin Vongkusolkrit	Chairman	April 2016 - AGM 2019	12/12	1/1	–	–	–	1/1
2. Mr. Rutt Phanijsaphand	Vice Chairman/ Independent Director	April 201 - AGM 2020	12/12	1/1	10/10	–	9/9	1/1
3. Mr. Teerana Bhongmakapat	Independent Director	April 201 - AGM 2019	12/12	1/1	10/10	–	9/9	1/1
4. Mr. Suthad Setboonsarng	Independent Director	April 2017 - AGM 2020	12/12	1/1	9/10	–	–	1/1
5. Mr. Metee Auapinyakul	Director	April 2017 - AGM 2020	11/12	1/1	–	–	–	1/1

Name	Title	Terms of Office	2018 Meeting Attendance					2018 Annual General Meeting of Shareholders (AGM)
			The Boards of Directors	Non-executive Directors	The Audit Committee	The Corporate Governance and Nomination Committee	The Compensation Committee	
			Total 12 meetings	Total 1 meeting	Total 10 meetings	Total 4 meetings	Total 9 meetings	
6. Mr. Ongart Auapinyakul	Director	April 2017 - AGM 2021	10/12	1/1	–	–	–	1/1
7. Mr. Rawi Corsiri	Director	April 2016 - AGM 2019	12/12	1/1	–	4/4	–	1/1
8. Mr. Verajet Vongkusolkrit	Director	April 2017 - AGM 2021	12/12	1/1	–	4/4	–	1/1
9. Mr. Bantoeng Vongkusolkrit	Director	April 2017 - AGM 2021	10/12	1/1	–	–	9/9	1/1
10. Mr. Sudiarso Prasertio	Independent Director	April 2016 - AGM 2019	9/12	0/1	–	2/4	–	1/1
11. Ms. Somruedee Chaimongkol	Director	April 2017 - AGM 2021	12/12	–	–	–	–	1/1
12. Mr. Anon Sirisaengtaksin	Director	April 2017 - AGM 2020	12/12	1/1	–	4/4	–	1/1

The Board of Directors' Report

The Board of Directors is responsible for Banpu's and its subsidiaries' consolidated financial statements and the financial information that appears in Banpu's Annual Report. The financial statements are prepared under the Generally Accepted Accounting Principles (GAAP) in Thailand, where an appropriate accounting policy has been selected and implemented. The Audit Committee and auditors jointly review the accounting policy to ensure it remains practical. While preparing the financial statements, the Board of Directors insists that the working team carefully exercise its discretion, and that important information is adequately disclosed in the notes to the financial statements.

The Board entrusted the Audit Committee with a responsibility to oversee the quality of financial statements and the internal control system, and to ensure that any opinions of the Audit Committee on these issues have been included in its report, which is also included in the Banpu's Annual Report.

The Board of Directors considered that the financial statements of the Company and its subsidiaries as of 31 December 2018 are accurate, complete, adequate and reliable.

Sub-committees

The Board structure of the company as of 31 December 2018, consisted of the Board of Directors and the executive officers. The Board of Directors consists of independent directors, non-executive directors and executive directors. There are four independent directors out of a total of 12 directors.

The Board set up three sub-committees; namely, the Audit Committee, the Corporate Governance and Nomination Committee and the Compensation Committee. The term of office of these committees is three years, from April 2016 to the date of the Annual Shareholder's Meeting in 2019.

1. The Audit Committee

The Audit Committee consists of three independent directors whose duties are to review the accuracy and reliability of the Company's financial statements, the sufficiency of internal control and risk management system, financial derivative transactions, commodity hedging and compliance with rules, laws and related regulations. The Audit Committee is also responsible for selecting an auditor and determining the remuneration. The Audit Committee is required to review connected transactions and potential conflict of interest to ensure that all are accurate complete and transparent. In addition, the Committee has to review key risk management measures, operational plans and results, budgets and manpower plan of the Global Internal Audit Department.

In 2018, the Audit Committee convened 10 times, all of which were quorate with agenda items covered.

2. The Corporate Governance and Nomination Committee

The Corporate Governance and Nomination Committee consists of four directors. Among these, three are non-executive directors and one is an independent director. The Committee has two major duties:

1. To review the Corporate Governance Policy and the Code of Conduct and to monitor compliance with the policy and practices within Banpu's Code of Conduct.
2. The Committee also nominates directors and the Chief Executive Officer, reviews a succession plan in order to nominate appropriate persons to fill the management positions (for department head level and higher) and submits recommendations to the Board of Directors for approval or for submission to the shareholders' meeting on a case-by-case basis.

Additionally, the Corporate Governance and Nomination Committee also suggests the Board of Directors the method used to evaluate the directors, jointly completes the evaluation and monitors improvements following the evaluation. In 2013, the Committee began using an evaluation form to evaluate the annual performance of three sub-committees, starting with 2012 performance onward. In 2014, the Committee started using the individual director self-assessment in performance evaluation.

In 2018, the Corporate Governance and Nomination Committee convened 4 times, all of which were quorate and with all agenda items covered.

3. The Compensation Committee

The Compensation Committee consists of three members: all are non-executive officers, and one is independent director who acts as the Chairman. The Committee is responsible for providing opinions regarding compensation management to the Board of Directors for approval or for submission to the shareholders' meeting, on a case-by-case basis.

In 2018, the Compensation Committee convened 9 times, all of which were quorate and with all agenda items covered.

Directors and Nomination of Directors and the Chief Executive Officer

The Independent Directors

The Independent Directors who account for 33% of the Company's Board of Directors, are as follows:

1. Mr. Rutt Phanijphand
2. Mr. Teerana Bhongmakapat
3. Mr. Suthad Setboonsarng
4. Mr. Sudiarso Prasatio

Independent directors are regarded as an important mechanism of good corporate governance. For the

benefit of the Company and shareholders, there should be sufficient independent directors to balance the decision-making process of the Board and to share opinions independently under no external influences. Independent Director serves a maximum of three terms or 9 years.

Banpu has defined the qualifications of Independent Directors in the stricter sense than that stipulated in the regulation of Securities and Exchange Commission and the Stock Exchange of Thailand Re: Proportion of Shareholding, which determines the qualifications of Independent Directors, as follows:

1. holding shares not exceeding 0.5 percent (legally not exceeding 1 percent) of the total number of shares with voting rights of Banpu, its parent company, subsidiary companies, associate companies, major shareholders or controlling persons, including shares held by related persons of such independent director;
2. neither being nor used to be an executive director, employee, staff, advisor who receives salary, or controlling person of Banpu, its parent company, subsidiary companies, associate companies, same-level subsidiary companies, major shareholder or controlling person, unless the foregoing status has ended not less than two years prior to the date of filing an application with the Office. Such prohibited conditions shall not include the case where the independent director used to be a government official or an advisor of a government unit which is a major shareholder or controlling person of Banpu;
3. not being a person related by blood or legal registration as father, mother, spouse, sibling and child, including the spouse of child, executive, major shareholder, controlling person, or person to be nominated as an executive or controlling person of Banpu or its subsidiary company;
4. neither having nor used to have a business relationship with Banpu, its parent company, subsidiary companies, associate companies, major shareholders or controlling persons, in the manner which may interfere with his independent judgment, and neither being nor used to be a significant shareholder or controlling person of any person having a business relationship with Banpu, its parent company, subsidiary companies, associate companies, major shareholders or controlling persons, unless the foregoing relationship has ended not less than two years prior to the date of filing an application with the Office.
5. neither being nor used to be an auditor of Banpu, its parent company, subsidiary companies, associate companies, major shareholders or controlling persons, and not being a significant shareholder, controlling person, or partner of an

The term 'business relationship' under the first paragraph includes any normal business transaction, rental or lease of immovable property, transaction relating to assets or services or granting or receipt of financial assistance through receiving or extending loans, guarantee, providing assets as collateral and any other similar actions, which results in Banpu or his counterparty being subject to indebtedness payable to the other party in the amount of 3% or more of the net tangible assets of Banpu, or THB 20 million or more, whichever is lower. The amount of such indebtedness shall be calculated according to the method for calculation of the value of connected transactions under the Notification of the Capital Market Supervisory Board governing rules on connected transactions *mutatis mutandis*. The consideration of such indebtedness shall include indebtedness occurred during the period of one year prior to the date on which the business relationship with the person commences;

audit firm which employs auditors of Banpu, its parent company, subsidiary companies, associate companies, major shareholder or controlling person, unless the foregoing relationship has ended not less than two years prior to the date of filing an application with the Office;

6. neither being nor used to be a provider of any professional services including those as legal advisor or financial advisor who receives service fees exceeding two million Baht per year from Banpu, its parent company, subsidiary companies, associate companies, major shareholders or controlling persons, and not being a significant shareholder, controlling person or partner of the provider of professional services, unless the foregoing relationship has ended not less than two years prior to the date of filing an application with the Office;
7. not being a director appointed as a representative of directors of Banpu, major shareholders or shareholders who are related to a major shareholder;
8. not undertaking any business in the same nature and in competition to the business of Banpu or its subsidiary companies or not being a significant partner in a partnership or being an executive director, employee, staff, advisor who receives salary or holding shares exceeding one per cent of the total number of shares with voting rights of other company which undertakes business in the same nature, and in competition to the business of Banpu or its subsidiary companies;
9. not having any other characteristics which may cause the inability to express independent opinions with regards to Banpu's business operations.

After being appointed as an independent director with the qualifications under 1. - 9. of the first paragraph, the independent director may be assigned by the

Board of Directors to take part in the business decision of Banpu, its parent company, subsidiary companies, associate companies, same-level subsidiary companies, major shareholders or controlling persons, provided that such decision shall be in the form of collective decision.

The provisions in 2., 4., 5., and 6. of the first paragraph relating to the consideration of qualifications of Banpu's independent directors during the two-year period prior to the date of filing an application with the Office was applied to applications filed with the Office from 1 July 2010 onwards.

In the case where the person appointed by Banpu as an independent director has, or used to have a business relationship or provide professional services exceeding the value specified under 4. or 6. the person shall be granted an exemption from such prohibition only if it has provided the opinion of the company's board of directors indicating that, by taking into account the provision in Section 89/7, the appointment of such person does not affect performing of duty and expressing of independent opinions. The following information shall be disclosed in the notice calling the shareholders meeting under the agenda for the appointment of independent directors:

- A. The business relationship or professional service which make such person's qualifications not in compliance with the prescribed rules;
- B. The reason and the necessity for maintaining or appointing such person as an independent director;
- C. The opinion of Banpu's Board of Directors for proposing the appointment of such a person as an independent director.

For the purpose of 5. and 6. of the first paragraph, the term "partner" shall mean a person assigned by an audit firm or a provider of professional service to sign on the

audit report or the professional service report (as the case may be) on behalf of such juristic person.

Regulations Governing Directors Holding Positions in Other Companies

To ensure that directors will be able to dedicate adequate time to perform duties to the Company, it is required that directors not hold positions in more than five listed companies. (Banpu Public Company Limited's Code of Conduct Section 5.1 Clause (5) General Qualifications of Directors).

Voting Procedure in the Board of Directors' Meeting

The Company set the procedure of the Board of Directors' meeting voting as follows "no less than half of all directors must attend the meeting to form a quorum, and to agree on a resolution there must be no less than 2/3 of all directors." (Practices for the Board of Directors of Banpu Public Company Limited, on Board of Directors, section 8.5).

Performance Evaluation of the Boards of Directors

The Company requires that the Board of Directors, sub-committees and individual directors are evaluated for their performance, with criteria, procedures, and evaluation results shown in the annual report and the report of the Corporate Governance and Nomination Committee. The overall evaluation results are illustrated below:

Performance Evaluation of the Boards and Directors

The evaluation form for the Board of Directors consists of five major categories as follows:

1. The structure and composition of the Board
2. Roles, duties and responsibilities of the Board
3. Nomination of directors
4. Remuneration of directors
5. Board meeting and performance of the Board

Performance Evaluation of Sub-committees

The evaluation form for the three Sub-committees, namely the Audit Committee, the Compensation Committee, and the Corporate Governance and Nomination Committee, consists of items in four major categories as follows:

1. Qualifications of the Directors
2. Duties and responsibilities of the Directors
3. Duties and responsibilities of each sub-committee according to the Charter
4. Meeting and reporting

Performance Evaluation of the individual directors

The evaluation form for each individual director consists of items in seven major categories as follows:

1. Structure and composition of the Board
2. Roles, duties, and responsibilities of the Board
3. Ethics and corporate governance
4. Development of Directors
5. Relationship with the Management
6. The Board of Directors' meeting
7. Overall performance of directors

Performance Evaluation of the Board	Average	Evaluation
Board of Director	4.73 from 5	Very Good
Individual Directors	4.75 from 5	Very Good

Performance Evaluation of Sub-committees	Average	Evaluation
The Audit Committee	5 from 5	Very Good
The Corporate Governance and Nomination Committee	4.95 from 5	Very Good
The Compensation Committee	4.8 from 5	Very Good

Nomination of Directors and Senior Executive Officers

The Corporate Governance and Nomination Committee is responsible for the nomination of directors whose terms expire or terminated for other reasons. The nomination procedure is as follows:

1. Review the structure and the composition of the Board in order to strengthen the Board of Directors as a whole.
2. Review general and specific qualifications, qualifications of independent directors and set additional criteria for candidate screening and nomination, regarding the conditions and requirements of the Company and in compliance with SET's rules and regulations. After the screening process, the Corporate Governance and Nomination Committee will nominate the candidate to be approved by the Board of Directors and the Annual General Meeting of Shareholders (AGM).

The Corporate Governance and Nomination Committee is responsible for nominating candidates to replace the directors whose terms expired by rotation or to fill vacancies. The Committee nominates the candidates and informs the retail shareholders via the

Company's website to propose qualified candidates within the specified duration of time and under stated conditions. All the candidates will then undergo a nomination process, in which knowledge, capability, experience, general qualifications and specific qualifications contributive for board composition and skills mix are considered. There must be twice as many nominated candidates as there are vacancies, and the nomination must be approved by the Board. The Shareholder's meeting will approve the appointment of directors with a minimum of 50 percent of the voting rights of the total shareholders attending the meeting and having the right to vote. The voting is carried out for each individual director.

For the nomination of executives, the Corporate Governance and Nomination Committee semi-annually monitors a succession plan covering the CEO, COO and senior management to ensure that the Company will have competent management with proper expertise and experiences to fill important positions in the future.

Corporate Governance of Subsidiaries and Affiliates

The Company has managed its subsidiaries and devised business procedures to ensure effective and capable operations, as follows:

Investment Policies by Banpu and Its Subsidiaries

1. The Management shall study and assess preliminary findings of the Investment Committee before reporting the results and investment outlook summary to the Board of Directors. The Board then considers and approves the project for funding, development and expansion as well as subsidiaries' policies. The Board of Directors also has the authority to approve the establishment of subsidiaries, as well as their dissolution as necessary to ensure that Banpu's operations and portfolio can be most efficiently managed.
2. The Board of Directors considers and approves investments that meet the criteria set by the SEC, such as connected transactions and decisions that involve receipts or sales of assets.
3. The subsidiaries shall submit reports on their performance and operations, particularly of their major businesses. They shall also conduct sensitivity analysis and evaluate it against set goals or benchmarks. These management reviews provide a basis for policy formulation and business model improvement to embrace continued growth and development so that the Company's subsidiaries grow in a sustainable manner.

Internal Control Policy and Central Management Policy

The Board of Directors and the Management allow the Global Internal Audit Department to work independently by submitting an internal audit report directly to the Audit Committee. The Department is also required to report on the progress of internal audit to the Board of Directors on a quarterly basis.

Management within each subsidiary is determined based on the Company's investment share. The Board of Directors appoints an executive to serve as a director in each subsidiary to ensure that the business

direction is in alignment with Banpu's policies, and strategies. Director selection is decided based on knowledge, relevant capabilities to the subsidiary, work location (in case of a foreign subsidiary) and health and readiness of the director. Director positions in Banpu's subsidiaries are reviewed at least once a year.

Budget Policy

Investment budget preparation and implementation must be in accordance with the budget regulations of each subsidiary and consistent with Banpu's budget rules. Budget preparation and review must be completed within the deadline, and the corresponding information must be submitted according to Banpu's standard operation. The project investments, which exceed the approved budget, by 10% and costs more than THB 1,500 million must be approved by the Board of Directors.

Anti-Corruption

The Company has always upheld the principles of good corporate governance in its management, stressing transparency, integrity and accountability. It also underlines effective operations, as well as responsibilities to society, the environment and all stakeholders. There is a specific department in the organization which has a clear mission to supervise and monitor business operations to make them comply with laws and corporate governance principles.

The Company set up the Corporate Compliance Department to manage risks from operations that may infringe rules and regulations and to oversee the compliance with laws of all business units' operations based on their activities. Each unit is required to file a Regulatory Compliance Checklists, to be reviewed by the Corporate Compliance Department, who will compile a report semi-annually. All business units must review updates about rules and regulations to be fully responsive to changes.

The Risk Management Department is responsible for assessing risks in all businesses, strategies and annual action plans. In 2018, the department assessed the risk of corruption, which may occur in the work process and prepared preventive measures and solutions. There are quarterly reviews of risks, which are reported to the Board of Directors at least twice a year.

The Company expressed its intent to campaign against corruption as part of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC), which it has joined since 2010. In 2013, the Company was certified as a CAC member.

In 2018, the Company submitted evaluation results along with Self Evaluation Form to CAC for consideration and approval for the renewal of its membership and was recertified as a member of CAC on 17 May 2018.

Reporting of Interests of Directors and Executives

In compliance with Clause 89/1/4 of the Securities and Exchange Act (No. 4) B.E. 2551 and with Notification of Capital Market Supervisory Board TorChor 2/2552 on Reporting of Interests of Directors, Executives and Related Persons, members of the Board of Directors are required to report the number of shares owned by themselves, their spouses and minor children who are not sui juris to the Board meeting after they are appointed as Board members. Subsequently, if any Board members, their spouses and minor children who are not sui juris buy or sell the Company's shares, they are required to report such transactions to the next Board meeting.

Shareholding of the Board of Directors and Management as of 31 December 2018 (For further details on Shareholding of the Board of Directors and Management, see the table on page 142.

Principle 4

Ensure Effective CEO and People Management

Succession Planning Policy

The Board of Directors has devised a succession plan for the CEO and senior executives to ensure that the Company has knowledgeable and capable executives to fill key positions in the future. The CEO is invited to report to the succession plan to the Corporate Governance and Nomination Committee twice a year and report to the Board once a year.

Orientation for New Directors and Enhancement of Business Knowledge and Perspective for Directors

The Board organizes an orientation session for new directors so that they are aware of what Banpu expects from them. Through orientation, the directors learn about their roles and responsibilities, Banpu's Corporate Governance Policy and practices as well as Banpu's business and operations. These activities are carried out to prepare them thoroughly for their role as Banpu directors. In addition, the Board of Directors has the policy to expand all directors' horizons on such topics as corporate governance, industrial outlook, businesses, new technology and innovations to improve the Board's performance. In 2018, directors attended seminars and trainings as shown in the table on page 30.

Principle 5

Nurture Innovation and Responsible Business

The Company focuses on balanced value creation throughout the supply chain, placing importance on both corporate governance and management of risks and opportunities. International standards are integrated with sustainable development strategies

covering economic, social and environmental aspects for improvement of the Company's competitiveness and creation of added values for all stakeholders through 2-level management system as follows:

- **Strategic Integration of Sustainability:** The Board of Directors considers sustainability risk issues and suggests appropriate mitigation for the CEO to implement.
- **Operational Integration of Sustainability:** The Sustainable Development Committee oversees, monitors and evaluates sustainability performance as well as determines and reviews policies that supports sustainable development.

The Company requires that sustainability indicators are part of short-term and long-term performance goals for both management and staff. Sustainability is integrated with the corporate culture and has been inculcated in all Banpu members in all countries where it has business operations. Management processes and business performance are regularly disclosed to stakeholders through appropriate channels.

In addition, the Company announced the Innovation Policy in response to the new vision which shall drive all Banpu's businesses by focusing on innovative development and become a core part of the Company's growth. Implementation of the Innovation Policy is as follows:

- Establish an infrastructure that allows and supports all staff to propose ideas for improvement of the Company's processes and technologies.
- Support activities on innovation to continuously enhance the Company's productivity.
- Cultivate an innovative culture in the Company by creating motivations and work conditions which are supportive of creative and innovative processes.
- Develop specific training programs or projects for enhancement of creative thinking skills by putting in innovation topics as part of the programs.

- Create infrastructure and promote innovation creation as well as focusing on future trends and development of products, services, processes or tools which could promptly and effectively respond to future demands.

Roles of Stakeholders

Committed to maintaining fairness for all stakeholders, Banpu incorporates policies on stakeholders into the Corporate Governance Policy and promotes collaboration with stakeholders. Based on such principles, the Code of Conduct provides guidelines for the directors, executives, and staff to follow based on fair and equitable mutual benefit. Important guidelines pertain to conflicts of interest, responsibility to shareholders, and policies on treatment of staff, customers, trading partners, creditors, competitors, and the society in general. It is considered the duty and responsibility that directors, executives and all staff shall acknowledge, understand, and strictly comply with the guidelines, in order to ensure and maintain confidence that all stakeholders are well treated and have their rights protected.

In addition, Banpu has created a channel to receive complaints and grievances regarding corporate governance and business ethics, which reaches out to and covers all groups of stakeholders. Information can be found on the Company's website under the Corporate Governance section, with the contact address; GNCSecretariat@banpu.co.th, and/or GNCchairman@banpu.co.th, which is regularly monitored and reported to the Corporate Governance and Nomination Committee on a quarterly basis and the Board of Directors on an annual basis. In addition, in 2015, Banpu announced and implemented the Whistleblower Policy to protect those filing grievances and to foster a culture of transparency. In 2017, the whistleblower channel was provided to encourage anonymous complaint filing. In 2018, the Company

approved an additional complaint channel through which the complaint is directly submitted to the Chairman of the Corporate Governance and Nomination Committee.

Apart from that, the Company announced the practices on refraining from receiving gifts and other benefits from stakeholders and informed all stakeholders through the Company's website as well as requiring registration of gifts in the database system for which the Board members, executives, staff and subsidiaries are required to understand and comply with, in accordance with the Anti-Corruption Policy. The Company stipulated the practices on giving and receiving bribery, gifts and business entertainment in its Code of Conduct as follows:

No. 3.4 Giving and Receiving Bribery

1. Executives and staff are prohibited from demanding or receiving any benefits from trading parties, contractors, suppliers, advisors and those with whom the Company is conducting business with.
2. Executives and staff are strictly prohibited from offering any benefit to government officers, customers, labor unions or any other external parties in an attempt to persuade them to commit a fraudulent action.

No. 3.5 Gifts, Gratuities and Business Entertainment

1. Executives and staff should refrain from giving gifts or gratuities to, or receiving them, from, any trading partner or others with whom the Company is doing business with gifts given or received during festive occasions are excluded from this requirement provided that they have an appropriate value and are not related to any business commitment.
2. Executives and staff should refrain from giving or receiving unusually lavish entertainment to or from those with whom the Company is doing business with.

Employees

Recognizing that human capital is a pivotal factor for success, Banpu has put in its Code of Conduct, a policy and practices towards employees to ensure fair treatment to employees of all nationalities and languages, including gaining equal access to career opportunity, remunerations, appointments, transfers, capacity-building and safe workplace environment for their lives and properties. Banpu has conducted adequate and appropriate Health, Safety and Environmental (HSE) measures to prevent loss from an accident and work-related illness and injury.

The Company announced the HR Philosophy in the management and development of human resources, which is based on three principles;

1. Equitability
2. Performance Based
3. Competency Based

To deal with business changes and the global economy, the Company takes responsibility in developing employees to embrace changes with adaptability, flexibility, mobility, positive creativity, and professionalism beyond the chain of command. In summary, Banpu focuses on creating "professional employees" who are equitably treated and provided with equal opportunities, regardless of nationality, race, religion, language and gender. The Company strictly adheres to a shared vision and goals for all operations, creating harmonious collaboration among all members who are bonded together with the corporate culture "Banpu Heart".

The Company maintains a remuneration policy that is fair to the employees and consistent with the Company's performance both in short and long terms and in all forms of compensation, including salary, welfare and other benefits. Human resources

management is fair and inclusively provides opportunities for learning and development to the full capacity of each employee. With goals set at maintaining transparency as well as building a workforce that is able to steadily and sustainably progress into the future, the Company has set up a Job Evaluation Committee and the Organization Development Committee, and has given full support to the Compensation Committee and the Corporate Governance and Nomination Committee.

Customers

Banpu strives to seek methods that efficiently and effectively respond to the needs of its customers. This has been stipulated as a policy and practices toward customers in the Code of Conduct that it will strictly adhere to the commitment made with customers. The Company is committed to delivering quality goods and services that meet customer expectations at a fair price, providing accurate and enough information in a timely fashion and complying with conditions given to customers. The Company has established a grievance process to allow customers to file complaints about quality, volume, safety of goods and services. It also advises on how to effectively use its goods and services for customers' best interests. The customers' information is kept strictly confidential and will never be exploited.

Trading Partners/Creditors

Banpu has a policy to equitably and fairly treat its trading partners and/or creditors by taking into consideration the Company's best interests. This is pursued on the basis of a mutual benefit for both parties where conflicts of interest shall be avoided, and contractual obligations shall be complied with.

Competitors

The Company set forth in the Code of Conduct a policy and practices to treat competitors in a way that complies with international practices and within a legal framework for business competition. Banpu will not fraudulently infringe upon or seek to obtain trade secrets of any competitors. The Company is also committed to fair business conduct by following the guidelines indicated in its Code of Conduct. In 2018, Banpu had no disputes with competitors.

Community and Society

Banpu has a policy to conduct businesses that are beneficial to the economy and the society while maintaining a balance between business growth and community, social and environmental development. The Company is also committed to being a good citizen and full compliance with the relevant laws and regulations. Banpu has endeavored to improve the quality of society, either through the Company's activities or collaboration with the government, the community or non-governmental organizations.

Additionally, the Sustainable Development Policy has been implemented, with the Company's standard being benchmarked against the global standard for activities such as greenhouse gas reporting and the formulation of best practice guidelines to effectively achieve safety, health and environmental standards. Also included in such guidelines are risk management resulting from the Company's operations which may affect employees, business partners, the environment and the communities in which the Company conducts its business.

In support of the above policy, the Company has carried out various Corporate Social Responsibility (CSR) activities. Over the past three decades of its business operation, Banpu has always allocated part of its earnings to CSR activities both at the local and corporate levels, including CSR projects in those countries where Banpu has operations.

The Company believes that “learning is the power of change and development,” and a foundation for “People” development, particularly for younger generations, who will be the major driving force behind social and national development in the future. In addition, the Company has raised awareness about corporate social responsibility among its workforce at all levels with a sustainable community and society as its ultimate goal.

Communication Channels with Banpu

Stakeholders may submit their opinions through the following channels:

Headquarters:

27th Floor, Thanapoom Tower
1550 New Petchburi Road, Makkasan, Ratchathewi
Bangkok 10400

Telephone: +66 2694 6600

Website: www.banpu.com

Company Secretary:

Telephone: +66 2694 6859

Email: bod_sec@banpu.co.th

Investor Relations:

Telephone: +66 2694 6747

Email: investor_relations@banpu.co.th

Corporate Communications:

Telephone: +66 2694 6923

Email: cc@banpu.co.th

Principle 6

Strengthen Effective Risk Management and Internal Control

Risk Management Policy

The Board of Directors has established a comprehensive risk management system covering risk factors related to vision, goals, business strategies, finance, production and other operations. The Board assess the potential of risks and their impact, and ensures that there are people responsible for the risks. In addition, the Board determines measures for reporting, monitoring and evaluating risk management. The Risk Management Committee is set up at the management level to regularly submit risk management plan and performance to the Audit Committee and periodically report them to the Board. The Committee reviews the risk management system and evaluates the performance at least once a year and when the risk level changes.

Internal Control Policy

The Board of Directors has set up an internal control system that covers all aspects of Banpu's business, ranging from finance and compliance to related laws rules and regulations. The Board has also established a sufficient and an effective checks and balances mechanism to protect shareholders' equities and Banpu's assets. Moreover, the Board has determined authorization levels and responsibilities of the executives and employees under checks and balances mechanism, while the operational regulations are explicitly written. The Global Internal Audit Department works independently and reports directly to the Audit Committee, who audits operating results of all business and support units to ensure regulatory compliance.

Principle 7

Ensure Disclosure and Financial Integrity

Conflict of Interest

Banpu considers that it is important to prohibit directors, executives and staff from using their positions for personal gains. As stipulated in the Code of Conduct, directors, executives and staff are to avoid connected transactions that could lead to a conflict of interest with the Company. If necessary, the transactions are to be carried out at arm's length, and directors or staff having an interest in the transactions must not be involved in the approval process. If any transaction is considered connected under the SET's notification, rules, procedures and the disclosure of connected information of listed companies must be strictly complied with.

The Board of Directors also stipulated that directors, executives or staff shall be prohibited from either using any opportunity or information acquired from their position for personal benefits, or to compete with the Company or related business, or using insider information to sell or buy shares. If an executive or staff involved in a special project of which the information has not yet been disclosed to the public; or that it is under negotiation where the project's information has to be kept confidential, as it could affect stock prices, the executive or staff is to sign a confidentiality agreement until the information is disclosed to the SET and the SEC.

In 2017, Banpu announced the Market Sensitive Information Policy and practices on the management of confidential information which potentially affects the stock exchange. It is the duty of directors, executives, staff, consultants and subsidiary companies to understand and follow the policy and practices as follows:

1. Establish an internal control system to prevent the leak of confidential information.
2. Cultivate a culture of information safety through constant communication to raise awareness of relevant persons of their duty to keep confidential.
3. Limit the number of persons who have access to confidential information based on a need-to-know to basis. Set up an information access control system for contract parties and service persons.
4. Exercise extreme caution receiving and sending information to and from third parties, being aware of one's duties in using and controlling confidential information.
5. Establish an appropriate information technology and control system.

Disclosure of Information to Investors

The Board of Directors oversees disclosure of information and its transparency to ensure that both financial and non-financial information relating to the Company's business and operating results is revealed in a complete, accurate, adequate, regular and timely manner. In addition, the information must reflect the Company's actual performance and its true financial status, as well as its business future while strictly complying with the laws, rules, and regulations relating to information disclosure of both the SEC and the SET. Aside from disclosing information as required by the SET and the SEC, Banpu also communicates with shareholders and investors through other channels. The Investor Relations Department directly communicates with shareholders, investors and securities analysts both domestically and abroad, while the Corporate Communications Department disseminates corporate information to shareholders, investors and the public through the local and international press.

In 2018, Banpu offered the following activities to disclose information to international investors, institutional investors, small investors, securities analysts and press:

No.	Information Disclosure and Presentation	Time(s)
1.	International Road Show	2
2.	Local Road Show	4
3.	Quarterly and Annual Analyst Meeting	4
4.	Opportunity Day for listed companies to release quarterly performance to investors	4
5.	Company visits by domestic and international investors	43
6.	Information provision to investors via conference call	9
7.	Interviews with executive officers	9
8.	Press conference on the company's performance	2
9.	Press release on the Company's performance and business strategies	7
10.	Activities for the press and public relations on Corporate Social Responsibility (CSR)	14
11.	Site visits and information provided for shareholders and analysts	1
12.	Exhibitions	1

The Company's information and news are also made available and equally accessible to all stakeholders on the Company's website: www.banpu.com. Interested parties may contact or make inquiries to the Company's Investor Relations via telephone: +66 2694 6747 or e-mail: investor_relations@banpu.co.th.

Supervision on the Uses of Internal Information

Banpu places great importance on information disclosure and transparency and has formulated policies on information disclosure, transparency in financial statements and corresponding policy implementation in the Company's Corporate Governance Policy. This is to ensure that financial and non-financial information about the businesses and the performance of the Company is disclosed to shareholders, investors, securities analysts, and the general public in an accurate, complete, sufficient, reliable and timely manner.

The Board of Directors is determined to ensure strict compliance with laws and regulations regarding

information disclosure and transparency. Sales or purchases of shares by any director or executive are duly reported to the SEC. Changes in securities holding of directors or executives are also subject to be reported to the Board of Directors' meeting on a monthly basis.

To supervise the use of the Company's internal information, the Company stipulated preventive measures against leakage of internal information as practiced in the Code of Conduct under the section "Conflict of Interests and Keeping Confidential Corporate Information."

It is the responsibility of the Company's directors, executives and staff to keep corporate information strictly confidential, especially the internal information which has not been disclosed to the public or any data or information that may affect the business of the Company or its share prices. The Directors shall follow guidelines stated in Board of Directors' Practice B.E. 2552 and the Code of Conduct as follows:

1. Directors shall not use the information they receive from their directorship or employment for personal benefit or for conducting business or other activities in competition with the Company.
2. Directors, executives and staff in possession of Company information which is not publicly known and which may influence the share prices (“inside information”) must refrain from dealing in the share of the Company. Inside information shall not be given to any third party for the purpose of their dealing in the shares of the Company.
3. Confidential business information shall not be disclosed to any third party especially to competitors even after a director, executive or staff member has left the Company.

Apart from that, the Company stipulated in the Corporate Governance Policy that directors, executives and staff must not exploit their relationship with the Company for personal gains, refrain from doing business that competes with the Company and avoid any transactions related to oneself, which may lead to a conflict of interest with the Company. If necessary, the transactions are to be carried out at arm’s length with fairness and transparency, and directors or staff having an interest in the transactions must not be involved in the approval process. If any transaction is considered connected under the SET’s notification, all rules, procedures and the disclosure of connected information of listed companies must be strictly complied with. Apart from that, the Board of Directors’ Code of Conduct stipulated a guideline of practice for directors in the case of gaining information not yet disclosed to the public and requires directors and executive offices to report securities ownership in the Board of Directors’ meetings on a monthly basis.

Regarding the development of an internal control system, the Company has deployed the Information

Technology (IT) system to supervise the use of Company information. Systems are in place to prevent access to information from third parties and to limit the staff’s information access level according to their individual responsibility. In the case where an executive or staff participates in a special task using information which has yet to be publicly disclosed, is still under negotiation, or may be subject to internal control given its possible impact on the Company’s share prices, such executive and staff must sign a Confidentiality Agreement with the Company. The Agreement shall remain in effect until the information is disclosed to the SET and the SEC.

The internal information usage control is stated in the Company’s rules under the “Disciplinary Action” section. Applying to all levels of staff, the rule states that any employee who fails to comply or violates the set disciplinary requirements is considered to have breached Company rules, and is subject to disciplinary actions and punishments according to the nature of the offense. Regarding information use, it is stated that anyone “disclosing the Company’s confidential information with an intention to destroy its reputation, credibility or products, resulting in a financial loss or a loss in a business opportunity to Banpu,” may be subject to severe punishment up to dismissal.

Principle 8

Ensure Engagement and Communication with Shareholders

Shareholder’s Rights

The Board of Directors emphasizes the importance of shareholders’ rights and their equality. This has been clearly specified in the Corporate Governance Policy, that shareholders are entitled to receive share certificates, transfer shares and acquire adequate

information in a timely fashion and in a format conducive for decision making. Shareholders are also entitled to attend a meeting, cast their votes at shareholders' meetings to deliberate Banpu's important policies, elect and remove directors, approve appointments of auditors and receive their shares of profit.

At each shareholders' meeting, the Board of Directors facilitates shareholders by providing adequate, clear and comprehensive information in a timely fashion. The Board encourages shareholders to attend the meeting and cast their votes, or to appoint an individual or an independent director as their proxy, to cast votes on their behalf in case they could not attend. In addition, shareholders are allowed to equally express opinions, seek explanations or pose questions.

The 2018 Annual General Meeting of Shareholders (AGM) was convened on 3 April 2018, at 13.00 hours at the Royal Paragon Hall 3, 5th Floor of Siam Paragon, No.991, Siam Paragon Shopping Center, Rama I Road, Pathumwan, Bangkok 10330. All 12 directors attended the Meeting. Banpu assigned the Thailand Securities Depository Co., Ltd., its share registrar, to send invitation letters to shareholders in advance, as well as posted it on the Company's website at www.banpu.com/AGM_EGM/ 30 days prior to the meeting date. The minutes of the 2018 AGM was also posted on the Company's website 14 days after the meeting took place so that the shareholders could propose amendments if they found the minutes to be inaccurate, within the 30-day period after the minutes were posted.

The Company informed the SET to notify the minority shareholders of the opportunities to propose agenda items to be included in the AGM and to nominate candidates to be considered for the director positions in December 2018. The procedures and methods for considering proposals were clearly stated on the

Company's website: www.banpu.com/AGM_EGM/). In the 2018 AGM, no shareholder proposed any additional agenda item or nominated candidates for director positions.

Equitable Treatment of Shareholders

Shareholders' Meeting

The Board of Directors has a policy to engage shareholders in a decision-making process and to ensure that shareholders receive comprehensive and adequate information in a timely fashion for such a process. As such, Banpu sent out an invitation letter for the meeting together with supporting documents for each agenda to shareholders prior to the meeting. Opinions from the Board of Directors also accompany each agenda item. The meeting is attended by 12 directors, including the Chairman of the Audit Committee, the Chairman of the Corporate Governance and Nomination Committee and the Chairman of the Compensation Committee. senior executives, the auditors and independent observers from a law firm also attend the meeting.

The Chairman of the meeting allows every shareholder to examine the Company's operations and to present questions in each of the agenda items. The Chairman also encourages shareholders to voice their opinions and make inquiries about the Company's operations. In addition, the Board of Directors completes the minutes of the meeting and releases them on the Company's website 14 days after the meeting, so that shareholders can review the minutes, and if necessary, propose amendments within 30 days.

Shareholders' Meeting Date

The 2018 Annual General Meeting of Shareholders (AGM) was convened on 3 April 2018 at 13.00 hours at the Royal Paragon Hall 3, 5th Floor of Siam Paragon, No. 991, Siam Paragon Shopping Center, Rama I Road, Pathumwan, Bangkok 10330. The 2018 AGM was

attended by all 12 directors, 711 shareholders and 2,011 proxies, bringing the total to 2,722 persons, representing 2,280,148,668 shares. This accounted for 44.17% of all 5,161,925,515 shares.

Site Visits and Information Provided to Shareholders

To improve the shareholders' understanding of its businesses and allow them to monitor its operations, Banpu has regularly arranged for shareholders to visit Banpu's operation sites and meet with the executives. 80 shareholders visited the BLP Power Plant in Rayong Province, Thailand on Wednesday 18 May 2018.

Compliance with Other Corporate Governance Principles

Banpu has adhered to the Stock Exchange of Thailand Principles of Good Corporate Governance for Listed Companies 2012, except for some cases, with details and reasons, as follows:

1. The Chairman of the Board should be an independent director.

The Company's practice: The Chairman of the Board is a non-executive director whose roles and duties are clearly defined by the Board of Directors. The emphasis is placed on the balanced benefits for the Company, shareholders and all stakeholders.

2. The Nomination Committee should consist entirely of independent directors.

The Company's practice: Currently, the Corporate Governance and Nomination Committee consists of four members, namely one independent director and three non-executive members. The Chairman of the Committee is a non-executive member. However, the Board of Directors clearly delegated in the Charter of the Board the roles and duties

of the members of the Corporate Governance and Nomination Committee, covering all aspects of corporate governance and nomination.

3. The Board should appoint an external consultant to facilitate a board assessment, and suggest performance issues on a board assessment at least once every three years, and assessment results should be disclosed in the annual report.

The Company's practice: Banpu has annual performance assessments of the Board of Directors as a whole, assessment of sub-committees and individual assessment of each director. The Corporate Governance and Nomination Committee considered the issue and decided not to appoint an external consultant to facilitate the development of assessment approaches and suggest issues on a board assessment.

4. In 2018, the Board of Directors has considered and improved the Company's Corporate Governance Policy, the Code of Conduct, Practices of the Board of Directors and Charters of Sub-committees based on the Corporate Governance Code for Listed Companies 2017 by the Securities and Exchange Commission.

Report of the Corporate Governance and Nomination Committee

The Corporate Governance and Nomination Committee consists of Mr. Ravi Corsiri, the Chairman, Mr. Sudiarso Prasertio, Mr. Verajet Vongkusolkrit and Mr. Anon Sirisaengtaksin. The Committee independently performs duties to the full extent as entrusted by the Board of Directors, in compliance with principles and guidelines of the Corporate Governance and Nomination Committee and the SEC's Corporate Governance Code (CG Code) 2017.

In 2018, the Corporate Governance and Nomination Committee convened four meetings with full attendance. The Corporate Governance and Nomination Committee summarized its performance in 2018 as follows:

The Corporate Governance Mission

1. Amendment of the Corporate Governance Policy and the Code of Conduct

To achieve business goals and maintain ethical standards for the benefits of stakeholders, shareholders, the Company and society, in 2018, the Board of Directors of Banpu Public Company Limited approved the amendment of the Corporate Governance Policy and the Code of Conduct to comply with the SEC's Corporate Governance Code (CG Code) 2017.

2. Promotion of Corporate Culture and Positive Attitude toward Corporate Governance

The Corporate Governance and Nomination Committee monitored the implementation of the communication plan to promote corporate culture and positive attitude towards corporate governance through a wide range of activities in 2018, which yielded satisfactory results.

3. Receiving Complaints regarding Corporate Governance

Banpu has created a communication channel for receiving complaints regarding corporate governance, covering all groups of stakeholders, via the Company's website under the Corporate Governance section. Complaints can be sent directly to the Secretary of the Corporate Governance and Nomination Committee at GNCSecretariat@banpu.co.th and/or GNCchairman@banpu.co.th, who will regularly report the complaints and grievances to the Corporate Governance and Nomination Committee

on a quarterly basis and submit a summarized report to the Board of Directors on an annual basis. In 2018, there were 2 complaints from stakeholders which were appropriately responded. The Corporate Governance and Nomination Committee also provided an additional complaint channel which allows direct submission of complaints to the Chairman of the Corporate Governance and Nomination Committee.

4. Performance Evaluation of Boards and Directors

The Corporate Governance and Nomination Committee has reviewed and subsequently approved the appropriateness of the approach and evaluation documents used in the annual performance evaluation of the Board. The documents include the evaluation form for the Board, the form for the Sub-Committee, and the form for individual directors.

The Corporate Governance and Nomination Committee reported the annual evaluation results to the Board of Directors' meeting. Overall, the Board of Directors' performance was satisfactory with a score of 4.73 out of 5. Specifically, each topic received a score in the 'good to excellent' range (between 4.6 and 5.0). The Board acknowledged the evaluation results and suggestions, and directors also exchanged views in the Board of Directors' Meeting on ways to enhance their performance to best benefit the Company.

The evaluation results of the three sub-committees, namely, the Audit Committee, the Compensation Committee, and the Corporate Governance and Nomination Committee received "very good" score range with an average score of 4.92 out of 5. Each sub-committee submitted its annual self-evaluation report to the Board of Directors as part of their annual performance report.

Apart from that, each individual director performed a self-assessment. The annual evaluation of each director's individual performance earned an average score of 4.75 out of 5. The directors acknowledged the results and suggestions and found the individual performance evaluation satisfactory. They exchanged views on how to enhance their performance to best benefit the Company.

Mission on the Nomination of Directors and Succession Plans for Senior Executive Officers

Nomination of Directors Whose Terms of Office Expired in 2018

The Corporate Governance and Nomination Committee reviewed the qualifications and appropriateness of the directors who have served their 3-year term and proposed to the Board of Directors to re-nominate their names to the 2018 Annual General Meeting of Shareholders for consideration and approval. In the 2018 AGM, four directors re-elected by the shareholders were as follows:

1. Mr. Bantoeng Vongkusolkrit
2. Mr. Ongart Auapinyakul
3. Mr. Verajet Vongkusolkrit
4. Ms. Somruedee Chaimongkol

After the Corporate Governance and Nomination Committee had reviewed the qualifications and appropriateness of the four directors whose terms of office expired, they agreed that the directors have appropriate qualifications and impressive performance. The Committee then proposed their names to be nominated to the 2018 Annual General Meeting of Shareholders for consideration and approval of reelection according to the nomination process, of which has been completed.

Succession Plan for Senior Executive Officers

In 2018, the Corporate Governance and Nomination Committee received a progress report on the succession plan for senior executive officers twice and reported the succession plan to the Board of Directors once.



Mr. Rawi Corsiri

Chairman of the Corporate Governance
and Nomination Committee

Report of the Audit Committee

The Audit Committee of Banpu Public Company Limited consists of three independent directors, who are competent and have relevant experiences in accounting, finance, business management and economics, namely Mr. Teerana Bhongmakapat, as Chairman of the Audit Committee, Mr. Rutt Phanijphand and Mr. Suthad Setboonsarng, as committee members. Ms. Wiyada Wiboonsirichai, Senior Vice President of Global Internal Audit and Compliance, is the Secretary of the Audit Committee. The Audit Committee independently performs roles and responsibilities entrusted by the Board of Directors according to best practice guideline for the Audit Committee and in compliance with the regulations of the Stock Exchange of Thailand. The Audit Committee stresses good corporate governance as well as efficient risk management, adequate and appropriate internal control and effective internal auditing in order to create sustainable value for the organization based on the Three Lines of Defense model. The Audit Committee has been continuously promoting compliance with Anti-Corruption Policy and practices. On 7 June 2018, Banpu was recertified as a member of Private Sector Collective Action Coalition Against Corruption (CAC). Global Internal Audit Department reviewed Banpu's Anti-Corruption practices and assured that Banpu had seriously and efficiently implemented such practices.

In 2018, the Audit Committee convened 10 times at which a quorum was established with the participation of the executives, Global Internal Audit and the external auditors in the related agenda. The Audit Committee also held a private meeting with the external auditors without the presence of the management. The results of the Audit Committee meetings were regularly reported to the Board of Directors. The Audit Committee's main activities can be summarized as follows:

1. Review of Financial Information

The Audit Committee reviewed Banpu's quarterly financial information and the 2018 financial statements on key matters, including related party transactions, the transactions with a possible conflict of interest and the appropriateness of accounting policies. The Committee also reviewed key matters, significant changes in accounting, accounting estimates, the disclosure of notes to the financial statements and the external auditor's observations from the review and audit of the financial statements. Sufficient explications from auditors, management and related persons were applied to assure that the financial statement reporting and disclosure of notes to the financial statements were prepared in accordance with Thai Financial Reporting Standards (TFRS), which is in accordance with International Financial Reporting Standards (IFRS). Based on the auditors' unqualified opinion, the Audit Committee agreed that the Company's financial statements are accurate, reliable and in compliance with the applicable laws and the Generally Accepted Accounting Principles. Additionally, disclosure of information is sufficient and timely for the benefit of investors and users of the financial statements.

2. Review of Internal Control and Internal Audit

The Audit Committee reviewed the internal control system by considering a report on internal audit results and their follow-up of Banpu Group on a quarterly basis. The aspects reviewed include operations, use of resources, safeguard of assets, compliance, anti-corruption and reliability of financial report, including the

internal control adequacy assessment based on the assessment standard of Security Exchange Commission. The Audit Committee is confident that Banpu has sufficient and appropriate internal control for business operations. In 2018, the Company improved internal control and corporate governance to be more prudent and appropriate to foster “Banpu Heart,” the corporate culture which comprises Passionate, Innovative and Committed, to steer the Company toward its goal of being a leading integrated energy solutions company in Asia-Pacific.

The Audit Committee supervised the operation of the Global Internal Audit and Compliance unit by reviewing and approving the strategy and annual audit plan of Global Internal Audit department, which are in line with the Company’s strategic plan. The Committee provided suggestions as well as monitored internal audit’s operation to completion as planned by focusing on internal auditing, preventive consultation and prompt corrective action of significant issues. Apart from that, the Committee promoted the improvement of internal audit performance and supported smart audit using information technology together with data analytics and monitoring to enhance efficiency and effectiveness. This is also to prepare for business expansion and disruption by maintaining an adequate and appropriate system of internal control. The Audit Committee assured that the Company has an internal audit system which is independent and in accordance with international standards and that internal auditing covers all units and important procedures in line with the Company’s key risks.

3. Review of Compliance

The Audit Committee reviewed compliance of Banpu Group’s businesses with applicable laws and regulations. The Company has established a Compliance Management System to assure, monitor and report compliance issues to the Audit Committee. The Corporate Compliance Department is responsible for assuring and monitoring compliance with applicable laws and regulations and reporting the results to the management and the Audit Committee on a regular basis. Moreover, the Company reported risk management and internal audit results covering key compliance risks. The overall results revealed that there were no significant compliance issues or problems found.

In 2018, the Company had undergone a significant restructuring, emphasizing independence and improvement of supervision efficiency, by merging Corporate Compliance Department with Global Internal Audit Department as Global Internal Audit and Compliance Unit, which is led by Senior Vice President-Global Internal Audit and Compliance. This new unit focuses on a proactive strategy and close collaboration with other units globally by monitoring law and regulatory changes in the countries the Company has invested which may have a significant impact on the Company’s business. This organizational change has improved the efficiency of compliance operation, which reflects the Company’s commitment to be responsible for the environment, society and communities.

4. Good Corporate Governance

The Audit Committee reviewed compliance with the Code of Conduct as well as efficiency and effectiveness of corporate governance executed by the Board members, management and employees. In the opinion of

the Audit Committee, the Board members and the management are a role model for corporate governance, supporting the implementation of anti-corruption policy and promoting every employee to strictly adhere to the Company's Corporate Governance policy. The Audit Committee also reviewed related party transactions or the transactions that may cause conflicts of interests between Banpu, its subsidiaries and other related parties, agreeing that those transactions were fair and reasonable and were carried out for the Group's benefit in accordance with the SEC's and SET's rules and regulations. To combat corruption, the Company has established whistleblower channels to receive complaints or grievances of corruption and unethical business practices and ensured that the complaint handling process is fair to all parties and that there is appropriate protection for whistleblowers and the alleged.

5. Oversight of Risk Management

The Audit Committee reviewed the efficiency and effectiveness of risk management process and closely monitored key risks that impact to the Company's business operations which cover coal industry, power industry and directions of new businesses such as oil and gas, renewable energy and new energy technologies. The Audit Committee reviewed the enterprise risk management on a quarterly basis. The Company has risk assessment and monitoring procedures to monitor the situations that can influence the patterns of business operation and management at all levels and in all major investment projects. The business progress and situation that affect the operations are reported. Preventive measures are put into place, emphasizing systematic and sustainable management which timely responds to rapidly changing business environment and trends.

In 2018, the Company reviewed its risk management policy, formulated the Risk Management Committee Charter and developed risk appetite framework and key risk indicators to improve effectiveness and concretely respond to changes in business plan. Strategic challenges facing the global energy industry, disruptive technology and changes in environmental policies forced the Company to reduce dependency on carbon and coal industry. The Company has diversified into renewable or environmental-friendly energy business and brought in digital to the organization, elevating technology in management, production processes and development of new products and businesses. These changes are aligned with Banpu's Greener and Smarter strategy. The Company's overall risks had been gradually decreasing over the past year. Energy prices particularly crude oil prices wildly fluctuated; however, coal prices remained high and stable. Regarding strategic risks, the Company has made impressive progress in Diversification Strategy by expanding into natural gas and renewable energy businesses, which will benefit the Company in the long run. The Audit Committee acknowledged the satisfying progress of natural gas business and coal trading. The Committee also prioritized the risks and uncertainties concerning laws and regulations in the host countries, environmental issues and safety including cybersecurity, operating results, finance, human resources and so forth.

6. Appointment of Auditors and Audit Fees for 2019

The Audit Committee considered the selection of auditors based on Banpu's evaluation criteria, including their experience, knowledge, expertise, independence and proposed audit fees compared to workload and the Company's business. The Committee also reviewed the auditors' qualifications to ensure that they meet

the Stock Exchange of Thailand's requirements. The Audit Committee proposed the appointment of auditors to the Board of Directors for consideration and for a further proposal to shareholders for approval. The following individuals of PricewaterhouseCoopers ABAS Ltd. (PwC) were nominated:

1. Ms. Amornrat Permpoonwattanasuk, CPA, License No. 4599; and/or
2. Mr. Pongthavee Ratanakoses, CPA, License No. 7795; and/or
3. Mr. Vichien Khingmontri, CPA, License No. 3977;

For the year 2019, the total audit fee for Banpu was proposed at THB 2,505,838. The Audit Committee also acknowledged the total estimated annual and quarterly audit fees of Banpu and its subsidiaries for the amount of THB 80,540,087.

In summary, in 2018, the Audit Committee performed its duties and responsibilities set forth in the Audit Committee Charter with accuracy, independence and prudence for the equitable benefit of the stakeholders. The Audit Committee maintained its opinion that Banpu's financial report is accurate and reliable with sufficient disclosure of information. Banpu is committed to a sound corporate governance policy; has an appropriate risk management system, complies with applicable laws and regulations, has an adequate and effective internal control and internal audit; and is able to properly respond to all changes influenced by both internal and external factors.

20 February 2019

On behalf of the Audit Committee



Mr. Teerana Bhongmakapat

Chairman of the Audit Committee
Banpu Public Company Limited

CORPORATE SOCIAL RESPONSIBILITY

CSR After-Process and Environmental Activities

Thailand

In 2018, Banpu continued CSR after-process activities to enhance education development, the environment conservation, youth capacity and community well-being. All programs and activities were carried out under the integrated concept to foster continuous “learning”, aiming to drive change and sustainable social, economic and environmental development, both in the formal and non-formal settings, as Banpu believes that “Learning is the Power of Change and Development”.

Educational Development

Banpu Education for Sustainability

In 2018, Banpu continued its 15th year of the “Banpu Education for Sustainability” project with the aim of developing education, the pillar of sustainability for the country. The Company has supported integrated learning in three dimensions, namely development of schools to become sustainable community learning centers, teacher capacity building and promotion of students’ learning for six schools in Lamphun, Lampang and Phayao – the provinces where Banpu used to have operations.

In early 2018, Banpu hosted a workshop entitled “Designing a thinking process for sustainable school development”, which was attended by 35 teacher representatives. Based on an innovative training approach, the workshop was aimed at stimulating thinking process and introducing thinking strategies to the teachers to mobilize the brainstorming with all stakeholders, namely teachers, students, parents and community members. The outcome was a school development plan which is agreed by all parties and suits each school’s policy. Banpu acts as an education ally who helps create knowledge connections, allocate essential resources and facilitate the projects according to the school development plan. The development projects are, for example, the professional skills development project; the IT support system development project; the music, sports, local performing arts promotion project; the project to



develop teachers into a professional learner, the project to drive moral school to support community development. These projects were designed to produce concrete outcomes and truly respond to development goals.

Banpu has been supporting the improvement of English communication skills for teachers and students

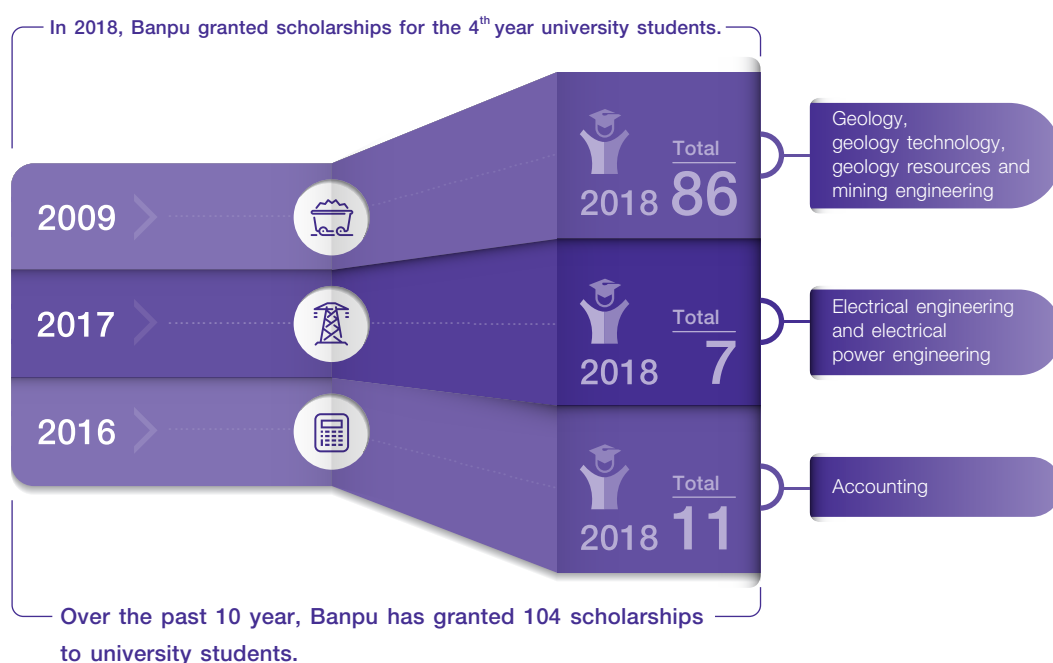
at Banpu-sponsored schools through the provision of native speakers for 7 consecutive years. Besides, the Company organized the career guidance activity “Career Day: Opening Doors into the Professional World and Planning for the Future” for Grade 9 and 10 students at all six Banpu-sponsored schools. The activity is aimed to open up the students’ career horizons by introducing different career options and emerging careers from innovation and technology disruption. The students also got to learn key skills for each career so that they can advance their interest or ability to achieve their career goals.

Banpu’s support for learning and teaching activities over the past 15 years is worth up to THB 40 million. The “Banpu Education for Sustainability” project has contributed to student’s academic achievement as well as ethics, life skills and vocational skills, all of which are necessary for young people to grow as valuable resources for their own communities. Teachers are also equipped with knowledge and ability to facilitate exciting and effective teaching and learning. The schools have improved their audio-visual equipment and teaching and learning system, organized activities to develop students’ skills and enhanced learning achievement. The educational standard was lifted, transforming the schools into community learning centers. The schools were also recognized as exemplary schools, model schools or pilot schools in many aspects.

Scholarships

In 2018, Banpu granted scholarships for the 4th year university students to support education in various areas as follows:

- Scholarships for geology, geology technology, geology resources and mining engineering students from Chiang Mai University, Khon Kaen University, Chulalongkorn University and Prince of Songkla University
- Two scholarships for electrical engineering and electrical power engineering students at King Mongkut’s Institute of Technology Ladkrabang



- Three scholarships for accounting students at Chiang Mai University and Prince of Songkla University

Over the past 10 years, Banpu has granted 104 scholarships to university students.

Sponsorship for Schools in Southern Border Provinces

In 2018, Banpu provided financial support of THB 1.5 million to 10 schools in the specially-targeted development zone through the Office of the Basic Education Commission to renovate and develop the schools affected by the unrest. For 12 consecutive years, Banpu has sponsored 121 schools in the five southern provinces, namely Narathiwat, Pattani, Yala, Songkhla and Satun.



CONNEXT ED Project

In mid-2016, Banpu joined the CONNEXT ED Project (the Public-Private Partnerships in Education and Leadership Development Project) to mobilize and elevate education standard. Banpu has collaborated with 12 school partners in 3 provinces: 5 schools in Khon Kaen, 3 schools in Maha Sarakham and 4 schools in Roi Et, to build capacity for school directors and teachers to reform teaching and learning to become more effective, modern and student-centered. In 2018, Banpu carried out the following activities:

1. 15 Banpu volunteer staff worked with its school partners in developing teaching and learning development plans and facilitated the school projects.
2. The Company hosted two workshops for 12 school directors on “Leadership” and “Coaching” to improve and update their managerial and administrative skills.
3. The Company organized 15 training workshops for primary school teachers of all grades, by adopting the curriculum of Chulalongkorn University Demonstration School on the subjects of Thai, English, Mathematics and Science. These workshops endowed participating teachers with new pedagogical and active learning skills and techniques and uses of diverse teaching materials, empowering teachers

to teach more effectively while enhancing students' motivation to learn and achieve better results. Moreover, the teachers worked together to create teaching plans for all the four subjects under the supervision of Chulalongkorn University Demonstration School, ensuring quality teaching of the same standard.

4. The Company founded the "Community of Practices" to provide a channel for school management and teachers to access information and share knowledge as well as teaching and learning experiences.
5. The Company organized the "Professional Learning Community" activity to provide a platform for the sharing of knowledge and experiences in teaching and learning development with the aim of improving teacher capacity to similar levels.

Light and Learn: Solar Project for Education

In 2018, Banpu Infinergy Company Limited, a subsidiary of Banpu, carried out the second year of the "Light and Learn" project by installing solar power systems and providing learning equipment such as satellites and televisions for the Mae Fah Luang Hill Tribe Community Learning Center in Tha Song Yang, Tak Province. The project aims to provide electricity access to the needy schools to facilitate teaching and learning as well as provide access to information and resources, which will improve the knowledge and capacity of the students in remote areas. It is also hoped that the students will be able to apply their knowledge and capacity to their future career and live a sustainable life while empowering hill tribe communities. In 2018, Banpu Infinergy installed solar panel systems for 13 schools worth more than THB 1.2 million in total. To date, Banpu Infinergy has sponsored 37 schools under this project.



Apart from that, the Company extended its expertise on solar innovation to open up education opportunities by installing a 150-kW solar power generating system for Mechai Pattana School in Lam Plai Mat district, Buriram and a 100-kW solar power generating system for Don Bosco Institute of Technology in Bangkok. The schools are promoted to be a model for the use of clean energy in academic activities and vocational training. The students also get hands-on learning on solar power generation and from working with Banpu engineers. This helps educate young people and raise their awareness of alternative energy and environmental conservation to get them motivated to join forces in creating sustainable development for the country and securing a clean energy future.

Environmental Development

Power Green Camp 13: "Managing Biodiversity and Creatively Increasing its Economic Value"

Banpu collaborated with the Faculty of Environment and Resource Studies, Mahidol University in hosting the "Power Green Camp" for the 13th consecutive year. The camp aims to enhance knowledge and understanding of environmental science and natural resources as well as encourage the students to systematically apply scientific knowledge to solve environmental problems. Moreover, it is also hoped to raise environmental awareness among young people and build youth leaders



and an environmental youth network. The target group of the “Power Green Camp” is Grades 10 and 11 students majoring in Science from all over Thailand.

The Power Green Camp’s activities have been organized based on the concept of Envi-Science: Learning Through Actions with the aim of developing a thinking process for students through theoretical learning and practice in the envi-science laboratory. Students also join a field trip to study about the environment and natural resources so that they can have hands-on experience and relate what they have learned through different activities. In addition, for the past three years, Banpu has selected the students who have an outstanding performance during the camp to visit countries where Banpu has business operations and learn more about sustainable environmental management.

In 2018, “Power Green Camp 13” was organized under the theme “Managing Biodiversity and Creatively Increasing its Economic Value”, providing an opportunity for 70 students to learn about the concept of biodiversity management and creating added economic value both theoretically and practically through workshops. The Camp also inspired students on environmental conservation through innovative science learning by integrating envi-science knowledge with artistic skills such as taking photos of biodiversity of flora and fauna, scientific illustration and nature drawing. Students also



visited the model communities in Nakhon Pathom and Kanchanaburi provinces to study the approaches to conserve biodiversity while creating added value for local products and produce. At the end of the camp, the students created their envi-science projects by applying what they have learned, which received financial support from Banpu worth THB 30,000 in total.

Apart from that, Banpu awarded three young participants of the Power Green Camp 12, held in October 2017, an excursion to Japan to study the “Balancing Economics, Community and Biodiversity” approach. Packed with exciting environmental activities, this trip was such an opportunity for these young people to broaden their knowledge and experience and to study Japanese work processes which can be applied in Thailand for sustainable development.

Over the past 12 years, 910 students have participated in Banpu’s Power Green Camp. Among these, 160 participants were trained to be environmental youth leaders to serve as facilitators at the camps and help expand the environmental network.



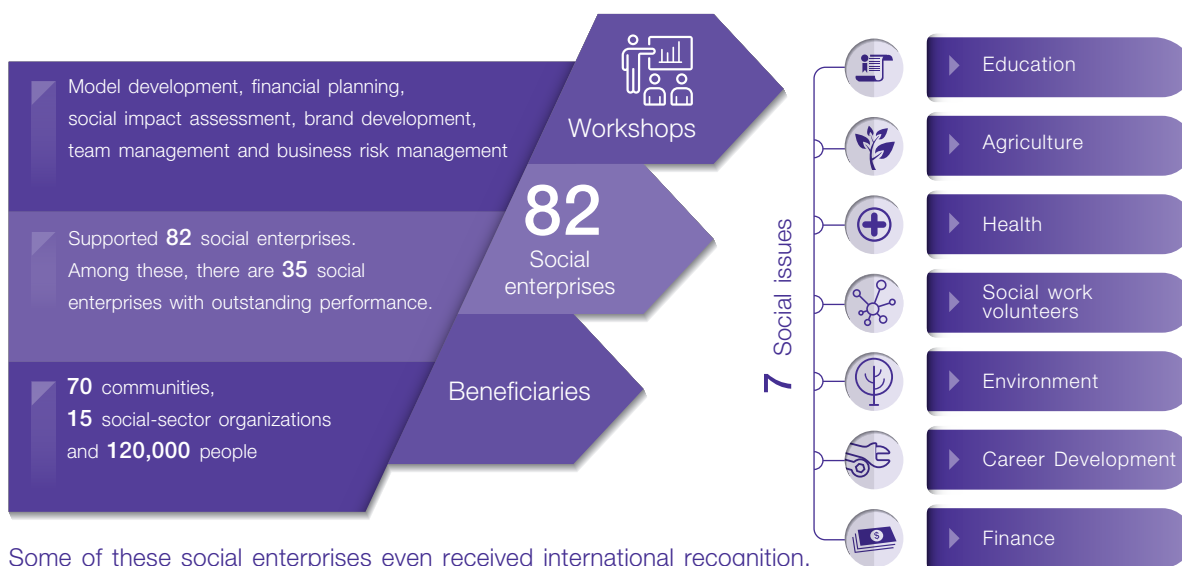
Youth Capacity Development

Banpu Champions for Change 8

In 2018, “Banpu Champions for Change” continued into its 8th year to promote the development of the new generation and network of social entrepreneurs and support “Social Enterprise” focusing on the connection between business, society and the environment via business management and social enterprise ethics. The project this year extended its performance on learning via SE.School (Social Enterprise School), the first online learning platform in Thailand for those interested in becoming a social entrepreneurs. 20 applicants from the first round were selected to attend a workshop on developing business ideas and models. In 2018, there were many outstanding social enterprise participants who can solve social problems, for instance, career and community development, waste management, finance and social service. The judging committee selected only 10 social enterprise plans with clear solutions or development directions for social and environmental challenges while being commercially viable. Each of



Social Impact from Banpu Champions for Change during the Past 8 Years



them received THB 80,000 seed capital to execute their business for three months. After that, five projects that had top performance, good progress and positive social impacts received THB 250,000 to continue their plans for another six months.

Apart from that, “Impact Day” was hosted under the concept “Launch Pad for Young People” for the 2nd consecutive year for the social enterprises of Banpu Champions for Change and its network. This activity provided an area for the general public and those interested in social enterprise and students to learn more about social enterprise directly from the experts.

Throughout the past eight years, “Banpu Champions for Change” has provided consultancy and organized a wide variety of training and activities such as business model development, financial planning, social impact assessment, brand development, team management and business risk management. The project has provided financial and skill supports to 82 social enterprises to start up their business based on their ideas and interests. Among these, 35 social enterprises with outstanding performance were

supported to enhance their potential and develop into sustainable social enterprises. While gaining profit, these social enterprises have contributed to better health and quality of life of 70 communities, 15 social-sector organizations, involving more than 120,000 people. Seven social issues have been addressed, including education, agriculture, health, social work volunteers, the environment, career development and finance. Some of these social enterprises even received international recognition and earned a stable income.

Banpu Table Tennis Club

Banpu Table Tennis Club (BTTC) has continuously organized activities for Thai athletes to develop their skills and broaden their perspectives with the aim of raising the standards of Thai table tennis. In 2018, the Club maintained its focus on athletes’ development both physically and mentally through a wide range of activities such as daily training and competing in major domestic and international tournaments.

Currently, BTTC has 80 athletes and members from all over the country. The Club has been striving to



improve its standards and management system, while also developing a personalized training plan for each individual athlete and adding many other activities in order to promote table tennis. Furthermore, Banpu provides an opportunity for Thai young people to practice and develop their skills to international standard through such activity as “Banpu Table Tennis Club Camp: Build Inspiration for Thai Youth in Remote Areas.” In the camp, the coaches of the national youth team and the Club’s volunteer athletes, with experiences in national and international tournaments, were invited to coach young athletes in different regions. In 2018, the BTTC hosted two camps in Ubon Ratchathani and Roi Et provinces; both were well responded by the youth and coaches there and nearby provinces. Since 2014, the BTTC has organized the camp for eight consecutive years, with a firm belief that it helps cultivate volunteer spirit and provides a standard training opportunity for inexperienced young athletes, including provincial-level junior players who lack support for skill development and high-quality training by internationally experienced trainers.

Throughout the past ten years, two BTTC’s athletes were selected to join the national team for the SEA Games, 33 athletes were recruited into the national youth team, and 17 athletes were admitted to universities for their table tennis talent. The Club’s athletes also won prizes from many domestic and international tournaments. Over 1,000 young people have attended the Banpu Table Tennis Club Camp and got the opportunity to practice their skills with the BTTC’s volunteer coaches.

Support for a Young Tennis Athlete

Banpu continued to support Mr. Songrit Chanbubpha, a strongly determined but needy junior tennis player to pursue his dream of being the world’s top-ranked player by sponsoring his sports equipment and physical fitness training courses as well as facilitating his continuous daily training. The Company has also supported his competitions in Thailand and abroad, to expose him to real tournament experiences and help him enhance his life skills while improving professional athletic disciplines.



In 2018, Songrit was selected as a national junior tennis player in the U16 category and a junior representative player for the Bangkok Metropolitan Administration to compete in the Jerusalem 2018 International Children's Games in Israeli, where Songrit won the men's doubles trophy. Banpu also supported Songrit's in the competitions hosted by the International Tennis Federation in Cambodia, Indonesia, Sri Lanka and South Korea. All the experience and performance this year is another important step for Songrit to move forward to becoming a professional tennis player in the future.

Thammasat – Banpu Innovative Learning Program

2018 marks the third consecutive year that Banpu and the Faculty of Learning Sciences and Education, Thammasat University collaborated on the project "Thammasat-Banpu Innovative Learning Program." The program aims to equip high school and vocational students as well as their instructors with essential skills for young innovators, namely critical and analytical thinking, creative communication, responsibility and leadership via a design process of



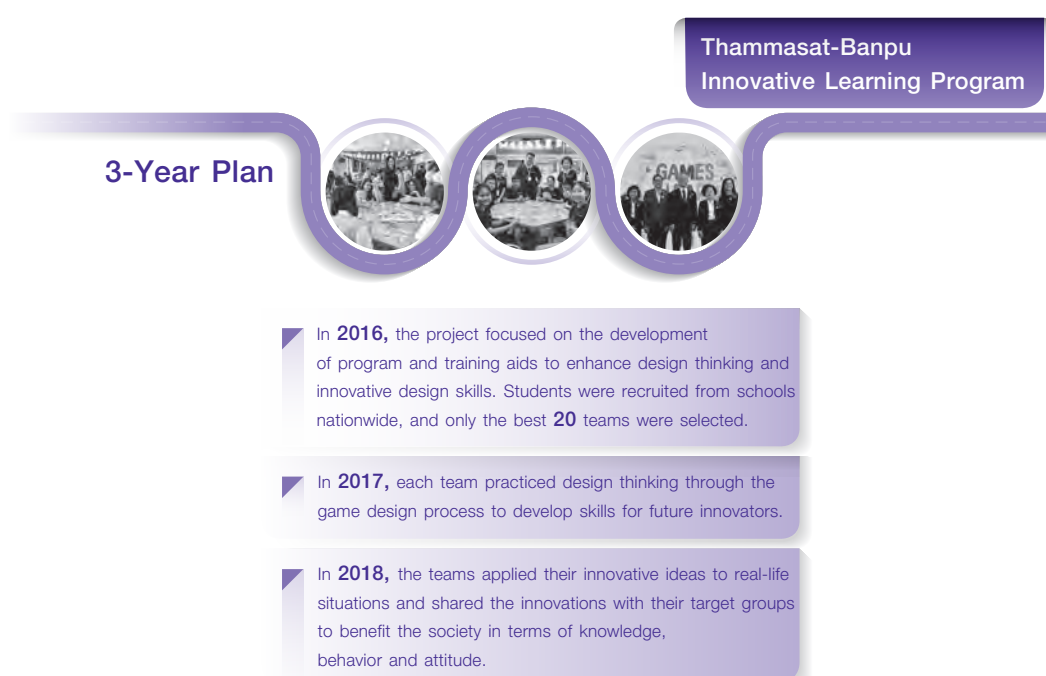
"Learning Games". The program received THB 15 million funding from Banpu for its three-year operations.

In 2016, the project focused on the development of program and training aids to enhance design thinking and innovative design skills. Students were recruited from schools nationwide, and only the best 20 teams were selected.

In 2017, each team practiced design thinking through the game design process to develop skills for future innovators.

In 2018, the teams applied their innovative ideas to real-life situations and shared the innovations with their target groups to benefit the society in terms of knowledge, behavior and attitude.

It was in this third year that all the 20 teams got to present the board games they designed to help solve 4 major social problems, namely the environment, student life, citizenship, and economics-finance at the Games & Learn Festival held at Thammasat University – Rangsit Campus. The event was attended by over 1,000 people. Those board games were tested by the local community to improve game quality. The judging committee will select the best team to receive the H.R.H. Princess Maha Chakri Sirindhorn's Cup in March 2019.



Community Development

- **Public Infrastructure Development:** The Lamphun Mine helped repair the damaged roads in Ban Hong to facilitate convenient commute of the local people. In 2018, the mine also carried out a volunteer activity to install a name sign for Ban Hong Child Development Center and improved the landscape to be suitable for the center's activities
- **Healthcare Development:** The Lamphun Mine hosted a mobile medical service unit to provide free health examinations, dental care and medical consultation to the villagers of Ban Hong and Ban Waen-Narin. Moreover, the mine has monitored the performance of the waste bank project run by Ban Hong Community Enterprise, who donated part of their income to support the temple and the village's activities.
- **Educational Development:** In the academic year 2018, the Lamphun Mine granted 100 scholarships worth THB 200,000 in total to students from 17 villages surrounding the mine. The Lamphun Mine has awarded scholarships worth about THB 2,200,000 in total to students in the surrounding communities for ten consecutive years since 2009. In addition, the Lamphun Mine has been supporting a wide range of activities such as Children's Day, which is held in the communities as well as other activities in the surrounding areas.



- **Religious and Cultural Development:** The Lamphun Mine offered Lent candles to nine temples in Ban Hong, Na Sai, and Li sub-districts, and held a robe offering ceremony at six temples in Li as a way to nurture Buddhism. Moreover, during the Songkran festival, the Company held a ceremony to pour water on senior government officials and the elders to show respect and to build a strong relationship with the community.
- **Economic Development:** The Lamphun Mine has been promoting professional development under the “Sufficiency Economy Project” through the training to manufacture of organic and bio-fertilizers for the locals living near the mining site and students at Ban Hong, Ban Na Klang and Ban Puang Kham (Pracha Uthit) as well as 60 Banpu staff. This was aimed to generate additional income for the local residents and the staff. In addition, the Company also allocated areas in the mining site for the locals and staff to conduct organic farming, fish farming, frog farming and chicken farming, and install solar water pump system to be used in the mining site so as to raise their awareness of self-reliance, which helps them cut expenses and live healthily.

Nan Forest Rehabilitation Project

Banpu has witnessed the repaid depletion of the Nan forest, the source of the Nan River, which provides 40% water of the Chao Phraya River in the past few years and feels the urge to restore the forests and



improve the quality of life in the community. The Company thus initiated the “Nan Forest Rehabilitation Project” to rehabilitate the Nan Forest and the Nan River to provide year-round irrigation for terrace farming so that it can replace subsistence farming and deforestation. Under the collaboration with the local governmental organization and involved governmental agencies, two villages in Bo Sub-district, Mueang, Nan Province were selected to undergo the pilot project.

Since 2017, Banpu has supported the construction of 23 weirs to increase the humidity of the forest areas, as well as two mountain irrigation systems to pipe water from the mountains down to a tank before distributing the water to cultivation areas, which benefits 52 households. The irrigation system enables year-round farming, including vegetable and fruit farming, fish farming and farming of other animals without encroachment on protected forest areas to extend cultivation areas. The Company also set up a community fund for which members pay the annual



membership fee, which will be used as seed fund for maintenance, increasing membership and management.

In 2018, the Company extended the project into other two villages, which benefits more 20 households. The project is the model for community-based sustainable reforestation. Apart from that, Banpu has granted 10 scholarships to vocational and university students who are members of the communities. These grantees are required to perform community services, and the Company has engaged them in the project activities in the hope that they will help drive the development of their local communities.

Helping Victims Affected by Disasters

Immediately after the floods hit Attapeu, Lao PDR in late July 2018, Banpu, as an organization that has been operating a business in Lao PDR for more than a decade and feels attached to the Lao people and communities, sent special response teams into the affected areas. The Company also joined forces with other allies from the state, civic and private sectors to provide relief for the flood victims in the form of money and necessities and support the Embassy of



the Lao PDR in Thailand in delivering relief packages. Moreover, Banpu supported the Thai Red Cross Society in transporting donated supplies to Lao PDR through the Lao Red Cross Society. In 2018, Banpu donated THB 5.5 million in total for flood relief in Lao PDR and provided financial support through the Minister of Finance of Lao PDR.

Republic of Indonesia

PT. Indo Tambangraya Megah Tbk (ITM), a subsidiary of Banpu in the Republic of Indonesia, places top priority on Corporate Social Responsibility (CSR) and community development activities. ITM runs and aligns its CSR activities with Banpu's policy and

implementation guideline, focusing on the promotion of education for sustainable development. ITM underlines the improvement of education quality for students and teachers in Indonesia, as well as, the improvement of the quality of lives of people through community development activities in the communities surrounding the Company's five mine sites on Kalimantan Island: Indominco Mandiri, Trubaindo Bharinto Ekatama, Kitadin-Embalut and Jorong.

Education Development

In 2018, as part of ITM for Education Program, ITM carried out the following activities:

- **Elementary Teachers Workshop**

The workshop theme "Character-based holistic education" was held for 75 teachers from 25 elementary schools around Indominco mine areas at Tiara Surya Hotel, Bontang on 23 -24 April 2018. The objective of the workshops is to train the teachers to have the ability and knowledge about holistic education and character education that can be implemented in daily teaching activities.

- **Elementary Student Workshop.**

The workshops for elementary students with theme of "Knowing and Caring for Biodiversity" were held two times. The first one was held at Trubaindo Coal Mining (TCM) site, West Kutai, East Kalimantan during 27-28 September 2018 which was attended by 287 students and 31 companions from 12 elementary schools nearby Trubaindo and Bharinto Ekatama sites. While during 19-20 December 2018, another workshop was held at Agricultural Technology Park, Kitadin-Embalut site area, East Kalimantan. It was attended by 96 students and nine companions from seven elementary schools nearby. The objective is to introduce to the participants about Biodiversity knowledge and to encourage them to concern about environmental sustainability.

Community Development

As part of ITM commitment in community development, during 2018 ITM carried out 219 community development programs & activities which were divided into five major program areas. ITM continued the activities that had been carried out in the previous year which were considered good to continue.

1. Economic Development (Income Generating Activities)

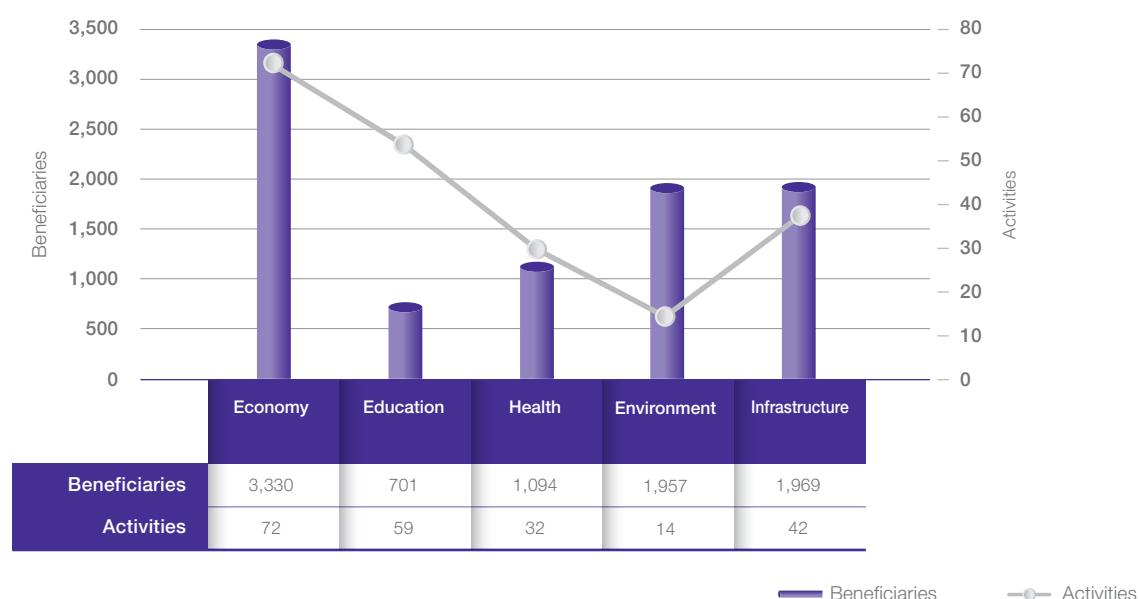
In 2018, ITM organized a variety of professional development trainings such as car driving, welding, and conducted comparative study for stakeholders in Bontang, Kutai Timur and Kutai Kartanegara to learn about how to manage the village enterprises. Furthermore, the Company promoted diverse income-generating agricultural activities in the villages where its mining sites are located. Agricultural activities include broiler chicken rearing, fish farming, cattle and goat rearing. Other activities include planting vegetables, oil palms, rubber trees, fruit trees, cacao orchards, rice farming, mushroom farming, food processing, handicraft, dressmaking and organic fertilizer production. The Company also provided management assistance to the community stores as well as engaged the community to become internal suppliers i.e. organic fertilizer supplier for Jorong mine site.

2. Educational Support

The Company prioritizes educational development, which is one of the key factors of strong and sustainable community development. In 2018, the Company's educational development support include:

- Granting continuous scholarships to local students who are studying nursing and education, and encouraging them to return to work in their home

Summary of Program and Beneficiaries



town communities after graduation as they will become a major driving force in their community's health care and education development in the future

- Providing continued financial support for schools to buy school furniture and learning equipment such as desks, chairs, cabinets, teaching materials and books
- Arranging informal education classes for the disadvantaged at the community learning centers in four villages so that they have better education and job opportunities
- Organizing computer training for students, teachers and community leaders

3. Improving Public Health

ITM has been promoting health and sanitation development for the communities, which covers lifelong health care for newborns to the elderly through the following activities:

- Providing consels about the danger of the HIV to students in Kitadin Tandung Mayang sites

- Training workshop on maternal and child health; health checkup for women after marriage, during pregnancy and delivery; and the provision of supplementary food for pregnant women and pre-school children
- Dispatching mobile medical units to provide medical checkup for school students and the elderly, as well as, health promotion activities and medical care for students
- Organizing anti-drugs workshops and campaigns to targeted students
- Providing of clean drinking water to communities which covers around 500 families in Indominco area and 900 families in Bharinto Ekatama area.

4. Environmental Conservation Program

To support and maintain environmental preservation, some of programs that ITM conducted in 2018 were:

- Planting mango trees and guava trees for the preservation of ecosystems and biodiversity

- Running a campaign to address the dangers of plastic waste
- Supporting the construction of facilities for Bontang Mangrove Park in the form of an environmental camp area, a welcome gate and displays of education on mangrove trees

5. Public Infrastructure Development

In 2018, ITM supported the construction of multi-utility community buildings, pre-school learning centers, bridges linking villages and cultivation fields; the improvement of roads and bridges in many villages to facilitate safer and faster travel and transport; and the dredging of dikes and canals.

Disaster Response

The Company took part to provide urgent assistance to the communities in Lombok (West Nusa Tenggara), Palu (Central Sulawesi) and Banten province that impacted by natural disasters namely earthquake and tsunami. In the first phase after the disaster (evacuation phase), the Company in coordination with government of Indonesia sent the Joint-ERT (Emergency Response Team) consisting of ERT from mine sites to help evacuate and provide medical services to the affected people. Along with evacuation phase, the Company also donated necessities such as rice and tents for refugees and people in impacted area. The Company also involved in the recovery phase by providing school kits to the schools in the areas.

People's Republic of China

In 2018, Banpu Investment (China) Co., Ltd. (BIC), Banpu's subsidiary in China, continued to promote social and community development activities in the communities where it has mining operations. BIC stresses assistance for the local communities and return of benefits to local people for their continued support by providing them with office furniture and supplies worth CNY 300,890 in total, to help improve



the working environment of five local government offices in the towns near Gaohe mine. These towns are the places where mining infrastructures are situated e.g. railways, loading terminals, ventilation chimneys and tailings ponds.

In Henan province where Hebi coal mine locates, BIC donated books worth CNY 30,000 to a primary school in Luoshan County, to provide financially disadvantaged students reading materials needed for their education and to help the school to achieve the national standard of book quota, namely, 30 books per student, in two years.



BOARD OF DIRECTORS AND MANAGEMENT

1 Mr. Chanin Vongkusolkrit

Age 66

- Chairman of the Board Directors
Appointed Date: 28 April 2016

- Director
Appointed Date: 16 May 1983

- Senior Executive Officer
Appointed Date: 10 April 2015

* An uncle of person number 7 and 10



2 Mr. Rutt Phanijphand

Age 71

- Vice Chairman
Appointed Date: 28 April 2016

- Independent Director
Appointed Date: 27 April 2005

- Chairman of the Compensation Committee
Appointed Date: 4 May 2005

- Member of the Audit Committee
Appointed Date: 30 April 2014



Education/Training

- M.B.A. (Finance), St. Louis University, Missouri, U.S.A.
- B.Econ., Thammasat University
- DCP Refresher Course #3/2006, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP) #20/2002, Thai Institute of Directors Association (IOD)
- TLCA Leadership Development Program (LDP) - Enhancing Competitiveness #0/2012, Thai Listed Companies Association

% Share Held

- Own share: 0.60
- Spouse: 0.13

Work Experience in the Last Five Years

Banpu Group

- | | |
|----------------|---|
| 2016 - Present | Chairman, Banpu Public Company Limited |
| 1983 - Present | Director, Banpu Public Company Limited |
| 2015 - 2016 | Senior Executive Officer, Banpu Public Company Limited |
| 1983 - 2015 | Chief Executive Officer, Banpu Public Company Limited |
| 2015 - Present | Director, Banpu Power Public Company Limited |
| 2015 - Present | Member of the Corporate Governance and Nomination Committee, Banpu Power Public Company Limited |

Other Listed Companies

- | | |
|----------------|---|
| 2018 - Present | Chairman, The Erawan Group Public Company Limited |
| 2004 - Present | Director, The Erawan Group Public Company Limited |

Other Companies

- | | |
|----------------|---------------------------------------|
| 1983 - Present | Director, Mitr Phol Sugar Corp., Ltd. |
|----------------|---------------------------------------|

Other Organizations

- | | |
|----------------|---|
| 2016 - Present | Director, Faculty of Architecture and Planning, Thammasat University |
| 2012 - Present | Director, Faculty of Economics Thammasat University |
| 2012 - Present | Chairman, Thammasat Economics Association |
| 2015 - Present | Director, Private Sector Collective Action Coalition Against Corruption Council (CAC) |
| 2013 - Present | Advisor to Chairman, Thai Listed Companies Association |
| 2008 - Present | President, The Foundation for Better Life |
| 2016 - 2018 | Commissioner, The Securities and Exchange Commission Thailand |
| 2015 - 2018 | Task Force Chairperson, Task Force for Sustainability in Listed Companies, The Securities and Exchange Commission, Thailand |

Education/Training

- M.S. in Business Ad., Fort Hays Kansas State University, Hays, Kansas, U.S.A.
- Bachelor of Science, Kasetsart University
- Director Accreditation Program (DAP): Governance Training for Listed Company Directors #4/2003, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP) #61/2005, Thai Institute of Directors Association (IOD)
- Financial Institutions Governance Program (FGP) #1/2010, Thai Institute of Directors Association (IOD)
- Corporate Governance for Capital Market Intermediaries (CGI) #14/2016, Thai Institute of Directors Association (IOD)
- National Defence College of Thailand (Class 388)

% Share Held

-

Work Experience in the Last Five Years

Banpu Group

- | | |
|----------------|---|
| 2016 - Present | Vice Chairman, Banpu Public Company Limited |
| 2014 - Present | Member of the Audit Committee, Banpu Public Company Limited |
| 2006 - Present | Independent Director/Chairman of the Compensation Committee, Banpu Public Company Limited |

Other Listed Companies

- | | |
|----------------|---|
| 2017 - Present | Chairman of Directors/Director, Land and Houses Bank Public Company Limited |
| 2005 - 2017 | Chairman of Executive Directors/Director, Land and Houses Bank Public Company Limited |
| 2013 - Present | Chairman/Director, Land and Houses Securities Public Company Limited |
| 2009 - Present | Chairman of Executive Directors/Director, LH Financial Group Public Company Limited |
| 2001 - Present | Chairman of the Nomination and Compensation Committee/Executive Director/Director, Home Product Centre Public Company Limited |
| 2001 - 2014 | President/Chief Executive Officer, Quality Houses Public Company Limited |

Other Companies

- | | |
|----------------|--|
| 2010 - Present | Chairman/Director, Land and Houses Fund Management Company Limited |
|----------------|--|

3 Mr. Teerana Bhongmakapat

Age 62

- Independent Director
Appointed Date: 5 April 2012
- Chairman of the Audit Committee
Appointed Date: 30 April 2014
- Member of the Compensation Committee
Appointed Date: 30 April 2014

**4 Mr. Rawi Corsiri**

Age 69

- Director
Appointed Date: 5 April 2012
- Chairman of the Corporate Governance and Nomination Committee
Appointed Date: 28 April 2016

**Education/Training**

- Ph.D. (Econ), University of Wisconsin at Madison, U.S.A.
- M.Econ., Thammasat University
- B.Econ. (Quantitative Economics), Chulalongkorn University
- Capital Market Academy Leader Program #14/2012, Capital Market Academy (CMA)
- Director Certification Program (DCP) #161/2012, Thai Institute of Directors Association (IOD)
- Financial Institutions Governance Program (FGP) #7/2013, Thai Institute of Directors Association (IOD)
- Director Certification Program Update (DCPU) #2/2014, Thai Institute of Directors Association (IOD)
- IT Governance Program (ITG) #2/2016, Thai Institute of Directors Association (IOD)
- Audit Committee Forum 2016, Federation of Accounting Professions Under the Royal Patronage of His Majesty the King, and Thai Institute of Directors Association (IOD)
- Audit Committee Effectiveness Seminar 2012, Federation of Accounting Professions Under the Royal Patronage of His Majesty the King
- Audit Committee Forum 2017, Thai Institute of Directors Association (IOD)
- Cyber Incident Management for Executive Committees of Listed Companies, The Securities and Exchange Commission
- Boards that Make a Difference (BMD) #8/2018, Thai Institute of Directors Association (IOD)

% Share Held

-

Work Experience in the Last Five Years**Banpu Group**

- | | |
|----------------|--|
| 2014 - Present | Chairman of Audit Committee/Member of Compensation Committee, Banpu Public Company Limited |
| 2012 - Present | Independent Director, Banpu Public Company Limited |

Other Listed Companies

- | | |
|----------------|---|
| 2013 - Present | Director/Member of Corporate Governance Committee, Tisco Financial Group Public Company Limited |
|----------------|---|

Other Organizations

- | | |
|----------------|--|
| 2018 - Present | Chairman of Evaluation Board, Thai Health Promotion Foundation |
| 2016 - Present | Chairman of the Research Support Committee, National Anti - Corruption Commission (NACC) |
| 2011 - Present | Professor of Economics (C11), Chulalongkorn University |
| 2006 - Present | Professor of Economics, Chulalongkorn University |
| 2010 - 2015 | Eminent Member, Anti - Money Laundering Office (AMLO) |

Education/Training

- M.B.A., Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Bachelor of Science (Geology), Chulalongkorn University
- Director Certification Program (DCP) #32/2003, Thai Institute of Directors Association (IOD)
- Capital Market Academy Leader Program #2/2006, Capital Market Academy (CMA)
- Nida - Wharton Executive Leadership Program, co - program between National Institute of Development Administration (NIDA), and The Wharton School, University of Pennsylvania, U.S.A.
- Top Executive Program in Energy (TEA) #3, Thailand Energy Academy

% Share Held

- Own share: -
- Spouse: 0.02

Work Experience in the Last Five Years**Banpu Group**

- | | |
|----------------|---|
| 2016 - Present | Chairman of the Corporate Governance and Nomination Committee, Banpu Public Company Limited |
| 2012 - Present | Director, Banpu Public Company Limited |
| 2012 - 2016 | Member of the Corporate Governance and Nomination Committee, Banpu Public Company Limited |
| 2012 - 2016 | Advisor, Banpu Public Company Limited |
| 2015 - Present | Member of the Corporate Governance and Nomination Committee, Banpu Power Public Company Limited |
| 2001 - Present | Director, Banpu Power Public Company Limited |
| 2009 - Present | Director, Hongsa Power Co., Ltd. |
| 2009 - Present | Director, Phu Fai Mining Co., Ltd. |
| 2001 - Present | Director, BLCP Power Ltd. |
| 2010 - 2017 | Director, Centennial Coal Co., Ltd. |

5 Mr. Sutthad Setboonsarng

Age 67

- Independent Director
Appointed Date: 3 April 2014
- Member of the Audit Committee
Appointed Date: 30 April 2014



6 Mr. Sudiarso Prasetyo

Age 71

- Independent Director
Appointed Date: 3 April 2014
- Member of the Corporate Governance and Nomination Committee
Appointed Date: 30 April 2014



Education/Training

- Ph.D. in Economics, University of Hawaii, U.S.A.
- M.A. in Agricultural Economics, University of Hawaii, U.S.A.
- B.A. in Economics, Thammasat University
- Director Certification Program (DCP) #194/2014, Thai Institute of Directors Association (IOD)
- Boards that Make a Difference (BMD) #8/2018, Thai Institute of Directors Association (IOD)

% Share Held

- Own share: 0.001
- Spouse: 0.0002

Work Experience in the Last Five Years

Banpu Group

Present	Director/Member of the Audit Committee, Banpu Public Company Limited
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Other Companies

Present	Senior Tax Advisory, Grant Thornton Thailand
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Other Organizations

2015 - Present	Director/Chairman of the Audit Committee/ Risk Oversight Committee, Bank of Thailand
2013 - Present	Chairman, NawaChiOne Foundation
2013 - Present	Director, Board of Trustee International Rice Research Institute (IRRI) Los Banos, Philippines
2013 - Present	Director, Cambodia Development Research Institute (CDRI)

Education/Training

- Civil Engineering, Brawijaya University, Malang, Indonesia
- Astra Middle Management Program, INSEAD
- Astra Executive Program, INSEAD
- Professional Director Program
- Leadership, Focus & Execution

% Share Held

-

Work Experience in the Last Five Years

Banpu Group

2014 - Present	Independent Director/Member of the Corporate Governance and Nomination Committee, Banpu Public Company Limited
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Other Listed Companies

2013 - 2014	Commissioner, PT. United Tractors Tbk
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Other Companies

2013 - Present	President Director, PT. Unitras Energy
2011 - 2014	Vice President - Commissioner, PT. Asmin Bara Bronang

Other Organizations

Present	Chairman/Member of Advisory Board, Indonesian Mining Services Association
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7 Mr. Buntoeng Vongkusolkit

Age 62

- **Director**
Appointed Date: 3 April 2014
- **Member of the Compensation Committee**
Appointed Date: 30 April 2014

* A nephew of person number 1
and a cousin of person number 10

**8 Mr. Metee Auapinyakul**

Age 65

- **Director**
Appointed Date: 16 May 1983
- **Advisor**
Appointed Date: 1 January 2014

* An older brother of person number 9

**Education/Training**

- M.S. in Political Science, Ramkhamhaeng University
- B.S. in Political Science, Ramkhamhaeng University
- Ultra Wealth – Invest Like a Master (UW) #2
- Top Executive Program in Energy (TEA) #5, Thailand Energy Academy
- TLCA Leadership Development Program (LDP) #1, Thai Listed Companies Association
- Top Executive Program in Commerce and Trade (TEPCOT) #5, University of the Thai Chamber of Commerce (UTCC)
- Director Certification Program (DCP) #161/2012, Thai Institute of Directors Association (IOD)
- Senior Executive Program #9, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Management Problem Solving and Decision Making Program, Kepner - Tregoe, International, Princeton, New Jersey, U.S.A.

% Share Held

- Own share: 0.05

Work Experience in the Last Five Years**Banpu Group**

Present	Director/Member of the Compensation Committee, Banpu Public Company Limited
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Other Companies

Present	Vice Chairman/Chairman of Executive Director, Mitr Phol Group
2015 - Present	Chief Operating Officer - Cane Management Business, Mitr Phol Group
1982 - Present	Director, Mitr Phol Group
2011 - 2018	Senior Executive Vice President, Sugarcane Development & Management Group, Mitr Phol Group

Education/Training

- Doctor of Business, Engineering and Technology, (Honoris Causa), St. Louis University, Missouri, U.S.A.
- B.Sc. (Management), St. Louis University, Missouri, U.S.A.
- Infrastructure for the Market Economy, Harvard University John F. Kennedy School of Government, Boston, U.S.A.
- National Defence College of Thailand (Class 377)
- National Defence College of Thailand, College of Management, (Class 1)
- Director Certification Program (DCP) #61/2005, Thai Institute of Directors Association (IOD)

% Share Held

- Own share: 0.08
- Spouse: 0.01

Work Experience in the Last Five Years**Banpu Group**

2014 - Present	Advisor, Banpu Public Company Limited
1983 - Present	Director, Banpu Public Company Limited
2015 - Present	Director, Banpu Power Public Company Limited

Other Listed Companies

2004 - Present	Chairman of Advisors, GENCO Public Company Limited
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9 Mr. Ongart Auapinyakul

Age 62

- **Director**
Appointed Date: 29 July 1983
 - **Advisor**
Appointed Date: 1 Jan 2017
 - **Executive Officer**
Appointed Date: 8 January 2001
- * A younger brother of person number 8

**10 Mr. Verajet Vongkusolkrit**

Age 54

- **Director**
Appointed Date: 1 June 2010
 - **Member of the Corporate Governance and Nomination Committee**
Appointed Date: 1 June 2010
- * A nephew of person number 1 and a cousin of person number 7

**Education/Training**

- B.S. (Mechanical Engineering), University of Missouri, Columbia, U.S.A.
- Senior Executive Program #3, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- National Defence College of Thailand (Class 4414)
- Director Certification Program (DCP) #23/2002, Thai Institute of Directors Association (IOD)
- Capital Market Academy Leader Program #8, Capital Market Academy (CMA)
- Bangkok Metropolitan Administration Executive Program (Mahanakorn Class 1), Urban Green Development Institute Bangkok
- Top Executive Program in Energy (TEA) #1, Thailand Energy Academy
- Top Executive Program #17, Judicial Training Institute
- Executive Management with Business Development and Investment #1, Institute of Business and Industrial Development
- Top Executive Program in Commerce and Trade (TEPCOT) #4, University of the Thai Chamber of Commerce (UTCC)
- Business Revolution and Innovation Network (BRAIN) #1, The Federation of Thai Industries
- Tourism Management Program for Executives (TME) #1, TAT Academy
- Academy of Business Creativity (ABC) #8/2018, Sripatum University

% Share Held

- Own share: 0.23
- Spouse: 0.06

Work Experience in the Last Five Years**Banpu Group**

2017 - Present	Advisor, Banpu Public Company Limited
1983 - Present	Director, Banpu Public Company Limited
1983 - 2016	Executive Officer, Banpu Public Company Limited

Education/Training

- Bachelor of Science (Finance), Babson College, Massachusetts, U.S.A.
- Director Certification Program (DCP) #24/2002, Thai Institute of Directors Association (IOD)

% Share Held

- Own share: 0.12

Work Experience in the Last Five Years**Banpu Group**

2010 - Present	Director/Member of the Corporate Governance and Nomination Committee, Banpu Public Company Limited
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Other Companies

Present	Chief Executive Officer - Thai Sugar, Energy and New Business, Mitr Phol Sugar Corp., Ltd.
2008 - Present	Director, Mitr Phol Sugar Corp., Ltd.
2008 - Present	Director, Mitr Siam Sugar Corp., Ltd.
2008 - Present	Director, United Farmer and Industry Co., Ltd.

11 Ms. Somruedee Chaimongkol

Age 57

- Chief Executive Officer
Appointed Date: 10 April 2015
- Director
Appointed Date: 4 April 2015

**12 Mr. Anon Sirisaengtaksin**

Age 66

- Director
Appointed Date: 19 April 2016
- Member of the Corporate Governance and Nomination Committee
Appointed Date: 28 April 2016
- Executive Advisor
Appointed Date: 1 April 2014

**Education/Training**

- B.Sc. (Accounting), Bangkok University
- Program for Global Leadership, Harvard University Graduate School of Business Administration, Boston, U.S.A.
- Director Certification Program (DCP) #78/2006, Thai Institute of Directors Association (IOD)
- Capital Market Academy Leader Program #18, Capital Market Academy (CMA)
- Executive Management with Business Development and Investment #2, Institute of Business and Industrial Development

% Share Held

- Own share: 0.10

Work Experience in the Last Five Years**Banpu Group**

2015 - Present	Chief Executive Officer/Director, Banpu Public Company Limited
2006 - 2015	Chief Financial Officer, Banpu Public Company Limited
2009 - Present	Director, Banpu Power Public Company Limited
Present	Director, BLCP Power Ltd.
Present	Director, Hunnu Investments Pte. Ltd.
Present	Director, AFE Investments Pty Ltd.
Present	Director, BMS Coal Sales Pte. Ltd.
Present	Director, Banpu Singapore Pte. Ltd.
Present	Director, Banpu Minerals Co., Ltd.
Present	Director, Banpu International Ltd.
Present	Director, BP Overseas Development Co., Ltd.
Present	Director, Centennial Coal Co., Ltd.
Present	Director, Banpu Engineering Services Co., Ltd.
Present	Director, Banpu Energy Services (Thailand) Co., Ltd.
Present	Director, Hunnu Coal Pty Ltd.
Present	Director, Banpu Minerals (Singapore) Pte. Ltd.
Present	Director, Chiang Muan Mining Co., Ltd.
Present	Director, Banpu Coal Investment Co., Ltd.
Present	Director, Asian American Coal, Inc.
Present	Director, AACI SAADEC (BVI) Holdings Ltd.
Present	Director, PT. Indo Tambangraya Megah Tbk
Present	Director, Banpu Australia Resources Pty Ltd.
Present	Director, Banpu Australia Co. Pty Ltd.
Present	Director, BPIN Investment Co., Ltd.
Present	Director, Sunseap Group Pte. Ltd.
Present	Director, Banpu Infinergy Co., Ltd.
Present	Director, Banpu North America Corporation
Present	Director, BOG Co., Ltd.
Present	Director, Banpu Coal Sales Co., Ltd.
Present	Director, Durapower Holdings Pte. Ltd.

Education/Training

- Honorary Doctor of Public Administration, Bangkok Thonburi University
- M.B.A., Thammasat University
- B.Sc. (Geology), Chulalongkorn University
- Certificates in Project Investment Appraisal and Management and Global Leadership, Harvard University, U.S.A.
- Director Accreditation Program (DAP) #52/2006, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP) #73/2006, Thai Institute of Directors Association (IOD)

% Share Held

- Own share: 0.0004
- Spouse: 0.0003

Work Experience in the Last Five Years**Banpu Group**

2016 - Present	Director/Member of the Corporate Governance and Nomination Committee, Banpu Public Company Limited
2014 - Present	Executive Advisor, Banpu Public Company Limited

Other Listed Companies

Present	Director, PTT Global Chemical Public Company Limited
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Other Companies

Present	Chairman, Emery Oleochemical (M) Sdn. Bhd.
Present	Chairman, Emery Specialty Chemicals Sdn. Bhd.
Present	Chairman, Natureworks LLC
Present	Chairman, Venecorex Holding
Present	Chairman, PTTGC International Private Ltd.
Present	Chairman, PTTGC Innovation America Corp.
Present	Chairman/President, PTTGC International (USA) Inc.
Present	Chairman, PTTGC International (Netherlands) Inc.

13 Mr. Somyot Ruchirawat

Age 63

- Deputy Chief Executive Officer
Appointed Date: 1 January 2013

**14 Mr. Somsak Sithinamsuwan***

Age 58

- Chief Operating Officer -
Coal Business
Appointed Date: 1 January 2019

**Education/Training**

- M.Eng (Industrial Engineering and Management), Asia Institute of Technology (AIT)
- M.B.A. (Executive), Chulalongkorn University
- B.Eng (Chemical Engineering), Chulalongkorn University
- Director Certification Program (DCP) #75/2006, Thai Institute of Directors Association (IOD)
- Capital Market Academy Leader Program #3/2006, Capital Market Academy (CMA)

% Share Held

- Own share: -
- Spouse: 0.01

Work Experience in the Last Five Years**Banpu Group**

Present	Deputy Chief Executive Officer, Banpu Public Company Limited
2013 - 2018	Chief Operating Officer - Coal Business, Banpu Public Company Limited
2015 - Present	Director, Centennial Coal Co., Ltd.
2014 - Present	Director, Akira Energy Ltd.
2014 - Present	Director, Akira Energy (South) Ltd.
2014 - Present	Director, Aura Land Development Pte. Ltd.
2014 - Present	Director, Banpu Renewable Energy Co., Ltd.
2013 - Present	Director, BMS Coal Sales Pte. Ltd.
2012 - Present	Director, Hunnu Investments Pte. Ltd.
2012 - Present	Director, Hunnu Coal Pty Ltd.
2010 - Present	Director, Banpu Minerals (Singapore) Pte. Ltd.
2001 - Present	Director, Banpu Minerals Co., Ltd.
2000 - Present	Director, Banpu International Ltd.
2015 - 2018	Director, Hebi Zhong Tai Mining Co., Ltd.
2015 - 2018	Director, Shanxi Gaohe Energy Co., Ltd.

Education/Training

- M.P.A. (Public Policy and Strategic Management), National Institute of Development Administration (NIDA)
- B.Eng. (Mining and Metallurgical Engineering), Prince of Songkhla University
- TLCA Executive Development Program 2017, Thai Listed Companies Association
- Global Leadership Program for Strategic Leader 2017, IMD Business School

% Share Held

- Own share: 0.001
- Spouse: 0.0013

Work Experience in the Last Five Years**Banpu Group**

Present	Chief Operating Officer - Coal Business, Banpu Public Company Limited
Jan - Dec 2018	Assistant to Chief Operating Officer - Coal Business, Banpu Public Company Limited
2011 - 2015	Vice President - Power Business, Banpu Public Company Limited
2015 - 2017	Senior Vice President - Office of Chief Executive Officer, Banpu Power Public Company Limited
2018 - Present	Commissioner, PT. Indo Tambangraya Megah Tbk
2018 - Present	Director, Banpu Coal Power Ltd.
2015 - 2017	Managing Director, Hongsa Power Co., Ltd.
2011 - 2015	Managing Director, Phu Fai Mining Co., Ltd.

***Remark:** Mr. Somsak Sithinamsuwan was appointed as Chief Operating Officer - Coal Business, effective on 1 January 2019.

15 Mr. Sutee Sukruan

Age 54

- Chief Operating Officer
Appointed Date: 1 January 2018
- Chief Executive Officer -
Banpu Power Public Company Limited
Appointed Date: 1 January 2018

**16 Mr. Akaraphong Dayananda**

Age 59

- Head of strategy and
Business Development
Appointed Date: 1 January 2011

**Education/Training**

- M.B.A. (Finance), Chulalongkorn University
- Bachelor of Accounting, Chulalongkorn University
- TLCA Executive Development Program #11,
Thai Listed Companies Association
- Economic Leader Forum, Thammasat Economics Association
- Director Certification Program (DCP) #254/2018,
Thai Institute of Directors Association (IOD)

% Share Held

-

Work Experience in the Last Five Years**Banpu Group**

Present	Chief Operating Officer - Power Business, Banpu Public Company Limited
2009 - 2017	Senior Vice President - Corporate Finance, Banpu Public Company Limited
Present	Chief Executive Officer, Banpu Power Public Company Limited
Present	Director, Pan-Western Energy Corporation LLC
Present	Director, Shanxi Lu Guang Power Co., Ltd.
Present	Director, PT. ITM Banpu Power
Present	Director, Banpu Power International Ltd.
Present	Director, Zouping Peak Pte. Ltd.
Present	Director, BRE Singapore Pte. Ltd.
Present	Director, Banpu Coal Power Ltd.
Present	Director, Banpu Renewable Energy Co., Ltd.
Present	Director, BLOP Power Ltd.
Present	Director, Banpu Power Japan Co., Ltd.
Present	Director, BPP Vinh Chau Wind Power LLC

Education/Training

- M.B.A., Bowling Green State University, Ohio, U.S.A.
- B.S. (Engineering), Chulalongkorn University
- Executive Program in Strategy and Organization,
Stanford University, California, U.S.A.
- Director Certification Program (DCP) # 91/2007,
Thai Institute of Directors Association (IOD)
- Director Diploma Examination #22/2007,
Thai Institute of Directors Association (IOD)

% Share Held

-

Work Experience in the Last Five Years**Banpu Group**

2011 - Present	Assistant Chief Executive Officer - Strategy and Business Development, Banpu Public Company Limited
2015 - 2017	Director, Banpu Power Public Company Limited
2016 - Present	Director, Banpu Power (Japan) Co., Ltd.
2015 - Present	Director, Banpu North America Corporation
2014 - Present	Director, Akira Energy Ltd.
2014 - Present	Director, BOG Co., Ltd.
2014 - Present	Director, Aizu Energy Pte. Ltd.
2014 - Present	Director, Akira Energy (South) Ltd.
2013 - Present	Director, AFE Investments Pty Ltd.
2013 - Present	Director, BMS Coal Sales Pte. Ltd.
2011 - Present	Director, AACI SAADEC (BVI) Holdings Ltd.
2011 - Present	Director, Chiang Muan Mining Co., Ltd.
2011 - Present	Director, Banpu Coal Power Ltd.
2011 - Present	Director, Banpu Australia Resources Pty Ltd.
2011 - Present	Director, Hunnu Coal Pty Ltd.
2011 - Present	Director, Hunnu Investment Pte. Ltd.
2010 - Present	Director, Banpu Australia Co. Pty Ltd.
2010 - Present	Director, Banpu Engineering Services Co., Ltd
2010 - Present	Director, Banpu Renewable Energy Co., Ltd.
2010 - Present	Director, Banpu Infinergy Co., Ltd.
2010 - Present	Director, Banpu Energy Services (Thailand) Co., Ltd.
2009 - Present	Director, Banpu Minerals Co., Ltd.
2009 - Present	Director, Banpu International Ltd.

17 Ms. Udomlux Olarn

Age 58

- Senior Vice President - Corporate Affairs
Appointed Date: 1 July 2009

**18 Mr. Varoj Limjaroon**

Age 58

- Chief Human Resources Officer
Appointed Date: 1 January 2018

**Education/Training**

- B.A., Journalism and Mass Communication
(Advertising and Public Relations), Thammasat University

% Share Held

- Own share: 0.0032

Work Experience in the Last Five Years**Banpu Group**

2009 - Present Senior Vice President - Corporate Affairs,
Banpu Public Company Limited

Education/Training

- M.B.A. (Strategic Management), Thammasat University
- B.B.A. Finance and Accountancy, Thammasat University

% Share Held

-

Work Experience in the Last Five Years**Banpu Group**

2018 - Present Chief Human Resources Officer,
Banpu Public Company Limited

2009 - 2017 Senior Vice President - Human Resources,
Banpu Public Company Limited

19 Ms. Arisara Sakoongaravek

Age 48

- Senior Vice President - Corporate Finance
- Appointed Date: 1 January 2018

**20 Mr. Jirameth Achcha**

Age 49

- Senior Vice President - Corporate Services
- Appointed Date: 1 January 2018

**Education/Training**

- Master of Science, Thammasat University
- Bachelor of Accounting (BA), Thammasat University
- Orchestrating Winning Performance 2016, IMD Business School
- Global Leadership Program for Strategic Leader 2017, IMD Business School
- Certification from School of Tax
- Certified Public Accountant (Thailand) (CPA)
- TLCA Leadership Development Program (LDP) - Crafting agile strategies to enhance competitiveness of your organization, Thai Listed Companies Association
- Refreshment of the Role and Expectation of a CFO, Federation of Accounting Professions Under The Royal Patronage of His Majesty the King
- Beyond Treasury Management, Federation of Accounting Professions Under The Royal Patronage of His Majesty the King

% Share Held

-

Work Experience in the Last Five Years**Banpu Group**

Present	Senior Vice President - Corporate Finance, Banpu Public Company Limited
2016 - 2017	Senior Vice President - Controller, Banpu Public Company Limited
2009 - 2015	Vice President - Accounting, Banpu Public Company Limited

Education/Training

- Master of Economics (Business Economics), Kasetsart University
- Bachelor of Economics (Fiscal Economics), Ramkhamhaeng University

% Share Held

- Own share: -
- Spouse: 0.0004

Work Experience in the Last Five Years**Banpu Group**

2018 - Present	Senior Vice President - Corporate Services, Banpu Public Company Limited
2016 - 2017	Vice President - Corporate Compliance, Banpu Public Company Limited
2015 - 2016	Vice President - Business Process Management, Banpu Public Company Limited
2014 - 2015	Vice President - Human Resources, Banpu Public Company Limited
2013 - 2014	Vice President - Corporate System, Banpu Public Company Limited

21 Mr. Virach Vudhihanaseth

Age 44

- Company Secretary
Appointed Date: 1 January 2018

**22 Ms. Wiyada Wiboonsirichai**

Age 48

- Secretary of the Audit Committee
Appointed Date: 16 January 2018

**Education/Training**

- Master of Arts in Economics, State University of New York, Albany, U.S.A.
- Master of Science in Finance, Bentley College, U.S.A.
- Master in Business Administration, Clark University, U.S.A.
- Bachelor of Economics (International Economics), Bangkok University
- TLCA Executive Development Program 2018, Thai Listed Companies Association
- Company Secretary Program #96, Thai Institute of Directors Association (IOD)
- CG Code Workshop, Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd. (Deloitte)

% Share Held

- Own share: 0.0029

Work Experience in the Last Five Years**Banpu Group**

2018 - Present	Vice President - Corporate Secretary & Investor Relations, Banpu Public Company Limited
2015 - 2017	Vice President - Investor Relations, Banpu Public Company Limited
2009 - 2015	Manager - Investor Relations, Banpu Public Company Limited

Education/Training

- Master Business Administration, Financial Management, National Institute of Development Administration (NIDA)
- Bachelor of Accounting, Thammasat University
- Certified Public Accountant (Thailand) (CPA)
- Certified Internal Auditor (CIA), The Institute of Internal Auditors (IIA)
- Certified Control Self - Assessment (CCSA), The Institute of Internal Auditors (IIA)
- TLCA Executive Development Program #13, Thai Listed Companies Association

% Share Held

-

Work Experience in the Last Five Years**Banpu Group**

2018 - Present	Senior Vice President - Global Internal Audit and Compliance, Banpu Public Company Limited
2018 - Present	Secretary of the Audit Committee, Banpu Public Company Limited
2014 - 2017	Senior Vice President - Information Technology, Banpu Public Company Limited

SHAREHOLDING OF THE BOARD OF DIRECTORS AND MANAGEMENT

Members of the Board of Directors are required to report the number of shares owned by themselves, their spouses, and minor children being non sui juris, to the Board meeting after they are appointed as Board members. Subsequently, if any Board members, their spouses, and minor children being non sui juris, buy or sell the Company's shares, they are required to report such transactions to the next Board meeting.

Shareholding of the Board of Directors and Management, as of 31 December 2018

Name	Ordinary Share		
	31 Dec 2018	31 Dec 2017	+ / (-)
1. Mr. Chanin Vongkusolkrit	31,146,376	31,146,376	-
Spouse/Minor Child	6,488,580	6,488,580	-
2. Mr. Rutt Phaniiphand	-	-	-
Spouse/Minor Child	-	-	-
3. Mr. Teerana Bhongmakapat	-	-	-
Spouse/Minor Child	-	-	-
4. Mr. Rawi Corsiri	-	-	-
Spouse/Minor Child	1,200,000	1,200,000	-
5. Mr. Suthad Setboonsarng	50,188	30,188	20,000
Spouse/Minor Child	10,000	15,000	(5,000)
6. Mr. Sudiarso Prasetyo	-	-	-
Spouse/Minor Child	-	-	-
7. Mr. Buntoeng Vongkusolkrit	2,660,000	2,660,000	-
Spouse/Minor Child	-	-	-
8. Mr. Metee Auapinyakul	4,301,200	4,301,200	-
Spouse/Minor Child	645,200	645,200	-
9. Mr. Ongart Auapinyakul	11,911,700	9,581,700	2,330,000
Spouse/Minor Child	3,120,000	2,860,000	260,000
10. Mr. Verajet Vongkusolkrit	6,075,536	6,075,536	-
Spouse/Minor Child	238,970	238,970	-
11. Mr. Anon Sirisaengtaksin	20,000	20,000	-
Spouse/Minor Child	13,518	13,518	-
12. Ms. Somruedee Chaimongkol	5,255,910	5,255,910	-
Spouse/Minor Child	-	-	-
13. Mr. Somyot Ruchirawat	-	-	-
Spouse/Minor Child	400,000	-	400,000
14. Mr. Somsak Sithinamsuwan	65,525	61,525	4,000
Spouse/Minor Child	-	-	-
15. Mr. Jirameth Achcha	90	90	-
Spouse/Minor Child	23,097	23,097	-
16. Mr. Sutee Sukruan	-	-	-
Spouse/Minor Child	-	-	-
17. Ms. Arisara Sakoongravek	-	-	-
Spouse/Minor Child	-	-	-
18. Mr. Akaraphong Dayananda	100,000	100,000	-
Spouse/Minor Child	-	-	-
19. Ms. Udomlux Olarn	165,000	165,000	-
Spouse/Minor Child	-	-	-
20. Mr. Varoj Limjaroon	-	-	-
Spouse/Minor Child	-	-	-

— REMUNERATION OF THE BOARD OF DIRECTORS —

1. Remuneration in Cash for the Year Ended 31 December 2018

1.1 Total cash remuneration of the Board of Directors in forms of meeting allowance, and annual remuneration amounted to THB 46,586,700.00 the details of which are as follows.

Name/ Position	Meeting Allowance (THB)				Annual Remuneration (THB)	Total Remuneration (THB)
	Director	Audit Committee	Corporate Governance and Nomination Committee	Compensation Committee		
1. Mr. Chanin Vongkusolkrit Chairman of the Board of Directors	1,287,000.00	-	-	-	3,445,783.13	4,732,783.13
2. Mr. Rutt Phanijphand Vice Chairman/ Independent Director/ Member of the Audit Committee/ Chairman of the Compensation Committee	1,138,500.00	324,000.00	-	312,000.00	3,048,192.77	4,822,692.77
3. Mr. Teerana Bhongmakapat Independent Director/ Chairman of the Audit Committee/ Member of the Compensation Committee	990,000.00	421,200.00	-	240,000.00	2,650,602.41	4,301,802.41
4. Mr. Sudiarso Prasetyo Independent Director/ Member of the Corporate Governance and Nomination Committee	750,000.00	-	50,000.00	-	2,650,602.41	3,450,602.41
5. Mr. Suthad Setboonsarng Independent Director/ Member of the Audit Committee	990,000.00	324,000.00	-	-	2,650,602.41	3,964,602.41
6. Mr. Rawi Corsiri Director/ Chairman of the Corporate Governance and Nomination Committee	990,000.00	-	130,000.00	-	2,650,602.41	3,770,602.41
7. Mr. Buntoeng Vongkusolkrit Director/ Member of the Compensation Committee	840,000.00	-	-	240,000.00	2,650,602.41	3,730,602.41
8. Mr. Metee Auapinyakul Director	910,000.00	-	-	-	2,650,602.41	3,560,602.41
9. Mr. Ongart Auapinyakul Director	810,000.00	-	-	-	2,650,602.41	3,460,602.41

Name/ Position	Meeting Allowance (THB)				Annual Remuneration (THB)	Total Remuneration (THB)
	Director	Audit Committee	Corporate Governance and Nomination Committee	Compensation Committee		
10. Mr. Verajet Vongkusolkrit Director/ Member of the Corporate Governance and Nomination Committee	990,000.00	-	100,000.00	-	2,650,602.41	3,740,602.41
11. Ms. Somruedee Chaimongkol Director	660,000.00	-	-	-	2,650,602.41	3,310,602.41
12. Mr. Anon Sirisaengtaksin Director/ Member of the Corporate Governance and Nomination Committee	990,000.00	-	100,000.00	-	2,650,602.41	3,740,602.41
Total						46,586,700.00

Notes: In addition to the above remuneration, each Director received other benefits, including annual medical check-up fee of THB 50,000.00 and fees for attending seminars held by the Thai Institute of Directors Association (IOD) and other related institutions as regulated by the Company.

1.2 Cash remuneration of the Company's executives in forms of salaries and bonuses

Cash remuneration of the Company's executives in forms of salaries and bonuses are rewarded based on performance against the pre-determined Key Performance Indicators and individual achievement, the details of which are as follows:

Unit: THB	Number of Executives	2018	Number of Executives	2017
Total Salaries	8	69,498,000.00	8	75,134,070.07
Total Bonuses	8	40,274,400.00	8	31,648,022.48
Total		109,772,400.00		106,782,092.55

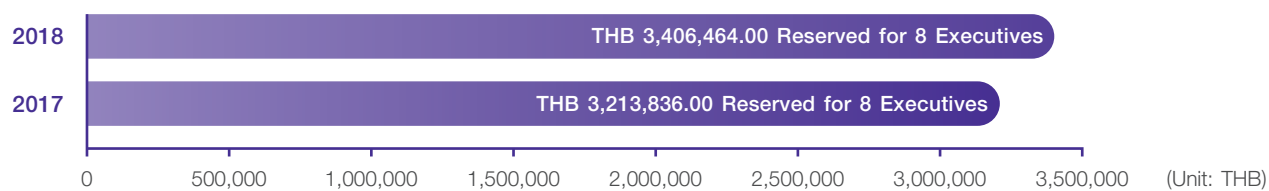
Notes:

- 2018 There were eight executives, namely, Ms. Somruedee Chaimongkol, Mr. Somyot Ruchirawat, Mr. Akaraphong Dayananda, Mr. Sutee Sukruan, Mr. Varoj Limjaroon, Ms. Udomlux Olarn, Mr. Jirameth Achcha and Ms. Arisara Sakoongaravek.
- 2017 There were eight executives, namely, Ms. Somruedee Chaimongkol, Mr. Somyot Ruchirawat, Mr. Voravudhi Linananda, Mr. Sutee Sukruan, Mr. Sathidpong Wattananuchit, Mr. Akaraphong Dayananda, Ms. Udomlux Olarn and Mr. Varoj Limjaroon.

2. Other Remuneration

Contributions to Provident Fund

Details of the Company's contributions to the provident fund for executives, are as follows:



Notes:

- 2018 There were eight executives, namely, Ms. Somruedee Chaimongkol, Mr. Somyot Ruchirawat, Mr. Akaraphong Dayananda, Mr. Sutee Sukruan, Mr. Varoj Limjaroon, Ms. Udomlux Olarn, Mr. Jirameth Achcha and Ms. Arisara Sakoongaravek.
- 2017 There were eight executives, namely, Ms. Somruedee Chaimongkol, Mr. Somyot Ruchirawat, Mr. Voravudhi Linananda, Mr. Sutee Sukruan, Mr. Sathidpong Wattananuchit, Mr. Akaraphong Dayananda, Ms. Udomlux Olarn and Mr. Varoj Limjaroon.

MAJOR SHAREHOLDERS

Top 10 of Major Shareholders, as of 31 December 2018

Major Shareholders	No. of Shares	%
1. The Vongkusolkrit Family	508,124,063	9.84
Mitr Phol Sugar Corp., Ltd.	288,309,528	5.59
TME Capital Co., Ltd.	99,410,300	1.93
United Farmer & Industry Co., Ltd.	35,611,300	0.69
MP Particle Board Co., Ltd.	30,438,448	0.59
City Holding Co., Ltd.	15,744,500	0.31
Mid-Siam Capital Co., Ltd.	14,916,382	0.29
Pacific Sugar Corporation Co., Ltd.	13,646,682	0.26
Mitr Phol Bio-Power (Phu Wiang) Co., Ltd.	12,311,744	0.24
Ufinves Co., Ltd.	12,283,000	0.24
Mitr Kalasin Sugar Co., Ltd.	9,606,042	0.19
2. Thai NVDR Co., Ltd.	419,475,220	8.13
3. South East Asia UK (Type C) Nominees Ltd.	138,949,697	2.69
4. Social Security Office	116,744,400	2.26
5. State Street Europe Ltd.	88,108,335	1.71
6. UBS AG Singapore Branch	75,270,000	1.46
7. Krungsri Dividend Stock LTF	53,593,100	1.04
8. The Bank of New York (Nominees) Ltd.	42,963,191	0.83
9. Yuanta Securities (Thailand) Co., Ltd.	40,894,732	0.79
10. Krungsri Dividend Fund	27,671,100	0.54
Total	2,044,071,764	39.62

Notes :

- Mitr Phol Sugar Corp., Ltd.: Mid-Siam Sugar Corp., Ltd. holds 99.99% of its paid-up capital.
- TME Capital Co., Ltd.
 1. The Vongkusolkrit Family holds 80.01% of its paid-up capital.
 2. Ufinves Co., Ltd. holds 15.23% of its paid-up capital.
 3. The Kanjanakamnerd Family holds 3.82% of its paid-up capital.
 4. The Putpongsiriporn Family holds 0.94% of its paid-up capital.
- City Holding Co., Ltd.
 1. The Vongkusolkrit Family holds 87.00% of its paid-up capital.
 2. The Kanjanakamnerd Family holds 6.00% of its paid-up capital.
 3. The Putpongsiriporn Family holds 2.00% of its paid-up capital.
 4. The Lattapanit Family holds 2.00% of its paid-up capital.
 5. The Jenlapwattanukul Family holds 1.50% of its paid-up capital.
 6. The Pradittan Family holds 1.50% of its paid-up capital.
- United Farmer and Industry Co., Ltd.: Mitr Phol Sugar Corp., Ltd. holds 87.56% of its paid-up capital.
- MP Particle Board Co., Ltd.: United Farmer and Industry Co., Ltd. holds 99.99% of its paid-up capital.
- Mid-Siam Capital Co., Ltd.: Mid-Siam Sugar Corp., Ltd. holds 99.99% of its paid-up capital.
- Pacific Sugar Corp., Ltd.: Mitr Phol Sugar Corp., Ltd. holds 99.99% of its paid-up capital.
- Ufinves Co., Ltd.: TME Capital Co., Ltd. holds 100.00% of its paid-up capital.
- Mitr Phol Bio-Power (Phu Wiang) Co., Ltd.: United Farmer and Industry Co., Ltd. holds 51.04% of its paid-up capital.
- Mitr Kalasin Sugar Co., Ltd.: United Farmer and Industry Co., Ltd. holds 99.99% of its paid-up capital.

DIVIDEND POLICY

Banpu has a policy to pay approximately 50% of its net profits from the consolidated financial statements, less all kinds of statutory and corporate reserves.

However, the dividend payout rate will depend on cash flows, investment obligations of the Company and its affiliates as well as legal restrictions and other requirements.



CONNECTED PERSONS AND TRANSACTIONS

As of 31 December 2018

Company/ Type of Business	Description of Relationship	Major Shareholders	Members of the Board of Directors
1. Mitr Phol Sugar Corp., Ltd. (Production and distribution of sugar and molasses)	1. One of the shareholders of Banpu Plc., holding 5.59% of its paid-up capital 2. The major shareholder is Mid-Siam Sugar Co., Ltd. 3. There are three joint directors, as follows: 1) Mr. Chanin Vongkusolkrit 2) Mr. Buntoeng Vongkusolkrit 3) Mr. Verajet Vongkusolkrit	1. Mid-Siam Sugar Co., Ltd. 99.99%	1. Mr. Isara Vongkusolkrit 2. Mr. Chanin Vongkusolkrit 3. Mr. Buntoeng Vongkusolkrit 4. Mr. Chusak Vongkusolkrit 5. Mr. Klanarong Sriroth 6. Mrs. Amporn Kanjanakamnerd 7. Mr. Pongsakorn Wongwuttikraikul 8. Mr. Krisda Monthienvichienchai 9. Mr. Verajet Vongkusolkrit 10. Assoc. Prof. Dr. Chiradet Ousawat 11. Mr. Attaphol Vongkusolkrit
2. TME Capital Co., Ltd. (Investment company)	1. One of the shareholders of Banpu Plc., holding 1.93% of its paid-up capital 2. The major shareholder is the Vongkusolkrit Family. 3. There is no joint directors.	1. The Vongkusolkrit Family 80.01% 2. Ufinves Co., Ltd. 15.23% 3. The Kanjanakamnerd Family 3.82% 4. The Putongsiriporn Family 0.94%	1. Mr. Vitoon Vongkusolkrit 2. Mr. Annop Vongkusolkrit 3. Ms. Phatsawan Vongkusolkrit 4. Ms. Theerarat Vongkusolkrit 5. Ms. Supawee Vongkusolkrit 6. Mr. Banchoet Vongkusolkrit 7. Mr. Kawin Vongkusolkrit 8. Mrs. Arada Vongkusolkrit 9. Mr. Amnuay Kanjanakamnerd
3. City Holdings Co., Ltd. (Holding company)	1. One of the shareholders of Banpu Plc., holding 0.31% of its paid-up capital 2. The major shareholder is the Vongkusolkrit Family. 3. There is no joint director.	1. The Vongkusolkrit Family 87.00% 2. The Kanjanakamnerd Family 6.00% 3. The Putongsiriporn Family 2.00% 4. The Lattapanit Family 2.00% 5. The Jenlapwattanukul Family 1.50% 6. The Pradittan Family 1.50%	1. Mr. Vitoon Vongkusolkrit 2. Mr. Banchoet Vongkusolkrit 3. Mrs. Arada Vongkusolkrit 4. Ms. Theerarat Vongkusolkrit 5. Ms. Phatsawan Vongkusolkrit 6. Mr. Kawin Vongkusolkrit 7. Mr. Amnuay Kanjanakamnerd
4. United Farmer and Industry Co., Ltd. (Production and distribution of sugar and molasses)	1. One of the shareholders of Banpu Plc., holding 0.69% of its paid-up capital 2. The major shareholder is Mitr Phol Sugar Corp., Ltd. 3. There are two joint directors, as follows: 1) Mr. Buntoeng Vongkusolkrit 2) Mr. Verajet Vongkusolkrit	1. Mitr Phol Sugar Corp., Ltd. 87.56%	1. Mr. Isara Vongkusolkrit 2. Mr. Buntoeng Vongkusolkrit 3. Ms. Chayawadee Chaianan 4. Mrs. Amporn Kanjanakamnerd 5. Mrs. Anchalee Suwattanapim 6. Mr. Sukkan Wattanawekin 7. Mr. Krisda Monthienvichienchai 8. Mr. Verajet Vongkusolkrit 9. Mr. Pongsakorn Wongwuttikraikul
5. MP Particle Board Co., Ltd. (Investment company)	1. One of the shareholders of Banpu Plc., holding 0.59% of its paid-up capital 2. The major shareholder is United Farmer and Industry Co., Ltd. 3. There is no joint director.	1. United Farmer and Industry Co., Ltd. 99.99%	1. Mr. Isara Vongkusolkrit 2. Mr. Krisda Monthienvichienchai 3. Mrs. Amporn Kanjanakamnerd 4. Mr. Pariwat Kanchanathana 5. Ms. Kannikar Vongkusolkrit

Company/ Type of Business	Description of Relationship	Major Shareholders	Members of the Board of Directors
6. Mid-Siam Capital Co., Ltd. (Sugar cane planting and stock investment)	1. One of the shareholders of Banpu Plc., holding 0.29% of its paid-up capital 2. The major shareholder is Mid-Siam Sugar Co., Ltd. 3. There is one joint director: 1) Mr. Buntoeng Vongkusolkrit	1. Mid-Siam Sugar Co., Ltd. 99.99%	1. Mr. Soonthorn Vongkusolkrit 2. Mr. Isara Vongkusolkrit 3. Mr. Buntoeng Vongkusolkrit
7. Pacific Sugar Corp., Ltd. (Import and export of sugar)	1. One of the shareholders of Banpu Plc., holding 0.26% of its paid-up capital 2. The major shareholder is Mitr Phol Sugar Corp., Ltd. 3. There is one joint director: 1) Mr. Verajet Vongkusolkrit	1. Mitr Phol Sugar Corp., Ltd. 99.99%	1. Mr. Krisda Monthienvichienchai 2. Ms. Amporn Kanjanakamnerd 3. Mr. Jirasak Vongkusolkrit 4. Mr. Verajet Vongkusolkrit
8. Ufinves Co., Ltd. (Holding company)	1. One of the shareholders of Banpu Plc., holding 0.24% of its paid-up capital 2. The major shareholder is TME Capital Co., Ltd. 3. There is no joint directors.	1. TME Capital Co., Ltd. 100.00%	1. Mr. Vitoon Vongkusolkrit 2. Mr. Annop Vongkusolkrit 3. Ms. Phatsawan Vongkusolkrit 4. Ms. Theeranat Vongkusolkrit 5. Ms. Supawee Vongkusolkrit 6. Mr. Banchoet Vongkusolkrit 7. Mr. Kawin Vongkusolkrit 8. Mrs. Arada Vongkusolkrit 9. Mr. Amnuay Kanjanakamnerd
9. Mitr Phol Bio-Power (Phuviang) Co., Ltd. (Production and distribution of sugar and molasses)	1. One of the shareholders of Banpu Plc., holding 0.24% of its paid-up capital 2. The major shareholder is United Farmer and Industry Co., Ltd. 3. There is one joint director: 1) Mr. Buntoeng Vongkusolkrit	1. United Farmer and Industry Co., Ltd. 51.04%	1. Mr. Isara Vongkusolkrit 2. Mr. Buntoeng Vongkusolkrit 3. Mr. Krisda Monthienvichienchai 4. Mr. Sirasak Tathong 5. Mr. Prawit Prakritsri 6. Mr. Jirasak Vongkusolkrit 7. Ms. Theeranat Vongkusolkrit 8. Mr. Nattapong Vongkusolkrit 9. Mr. Arnat Panya
10. Mitr Kalasin Sugar Co., Ltd. (Production and distribution of sugar and molasses)	1. One of the shareholders of Banpu Plc., holding 0.19% of its paid-up capital 2. The major shareholder is United Farmer and Industry Co., Ltd. 3. There are two joint directors, as follows: 1) Mr. Buntoeng Vongkusolkrit 2) Mr. Verajet Vongkusolkrit	1. United Farmer and Industry Co., Ltd. 99.99%	1. Mr. Isara Vongkusolkrit 2. Mr. Buntoeng Vongkusolkrit 3. Mrs. Amporn Kanjanakamnerd 4. Mr. Pongsakorn Wongwuttikraikul 5. Mr. Sukkan Wattanawekin 6. Ms. Chayawadee Chaianan 7. Mr. Krisda Monthienvichienchai 8. Mrs. Anchalee Suwattanapim 9. Mr. Verajet Vongkusolkrit

OTHER REFERENCES

1. Ordinary Share Registrar	<p>Thailand Securities Depository Company Limited 1st Floor, The Securities Exchange of Thailand 93 Ratchadapisek Road, Din Daeng, Bangkok 10400 Tel. +66 2009 9000 Contact Center +66 2009 9999</p>
2. Debenture Registrar	<p>Bangkok Bank Public Company Limited 333 Silom Road, Bang Rak, Bangkok 10500 Tel. +66 2230 1893</p>
3. Bond Representative	<p>Siam Commercial Bank Public Company Limited 9 Ratchadapisek Road, Chatuchak, Bangkok 10900 Tel. +66 2544 1111</p> <p>Kasikornbank Public Company Limited Head Office: 1 Soi Rat Burana 27/1, Rat Burana Road, Rat Burana, Bangkok 10140 Contact: 400/22 Phaholyothin Road, Phaya Thai, Bangkok 10400 Tel. +66 2470 3687, +66 2470 1946</p> <p>Bangkok Bank Public Company Limited 333 Silom Road, Bang Rak, Bangkok 10500 Tel. +66 2230 1893</p>
4. Auditor	<p>Ms. Amornrat Pearmpoonvatanasuk Authorised Auditor No. 4599</p> <p>PricewaterhouseCoopers ABAS Ltd. 15th Floor, Bangkok City Tower 179/74-80 South Sathorn Road, Bangkok 10120 Tel. +66 2844 1000</p>
5. Financial Advisor	--None--
6. Advisor or Manager under Management Agreement	The Company did not hire any advisors or managers under any permanent management agreement. Advisors, including financial advisors, were hired on a case-by-case basis as necessary to support its operations from time to time. The Company's management is mainly supervised by the Board of Directors.
7. Financial Institutions Regularly in Contact	The Company is regularly in contact with around 30 local and international commercial banks and financial institutions.

DETAILS OF THE COMPANY, ITS SUBSIDIARIES AND ASSOCIATED COMPANIES, AND JOINT VENTURES

As of 31 December 2018

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
1. Banpu Plc.	Energy	5,165,257,100 THB	5,161,925,515 THB	5,161,925,515	1	-	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600

Subsidiary Companies

Thailand

2. Banpu Minerals Co., Ltd.	Coal mining and trading	3,200,000,000 THB	3,200,000,000 THB	3,200,000	1,000	99.99% (held by Banpu Plc.)	58/1, Moo 1, Tambon Thungkwaw, Amphoe Muang Phrae, Phrae Province, Thailand	0 2694 6600
3. Chiang Muan Mining Co., Ltd.	Coal mining and trading	57,837,500 THB	57,837,500 THB	5,783,750	10	99.99% (held by Banpu Minerals Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600
4. Banpu Coal Sales Co., Ltd.	Coal trading	320,000,000 THB	320,000,000 THB	3,200,000	100	99.99% (held by Banpu Minerals Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600
5. Banpu International Ltd.	Investment studying	250,000,000 THB	250,000,000 THB	25,000,000	10	99.99% (held by Banpu Plc.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600
6. Banpu Infinergy Co., Ltd.	Investment in alternative energy and energy technology solution	635,000,000 THB	635,000,000 THB	63,500,000	10	99.99% (held by Banpu Plc.)	1550, Thanapoom Tower, 29 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2095 6595
7. BOG Co., Ltd.	Investment in energy business	1,550,000,000 THB	1,550,000,000 THB	15,500,000	100	99.99% (held by Banpu Plc.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600
8. Banpu Engineering Services Co., Ltd.	Investment in alternative energy	247,000,000 THB	247,000,000 THB	24,700,000	10	99.99% (held by Banpu Plc.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600
9. Banpu Energy Services (Thailand) Co., Ltd.	Investment in alternative energy	236,124,430 THB	236,124,430 THB	23,612,443	10	99.99% (held by Banpu Engineering Services Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600
10. Biofuel Development Holdings Co., Ltd.	Investment in alternative energy	76,000,000 THB	76,000,000 THB	7,600,000	10	99.99% (held by Banpu Engineering Services Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600
11. Banpu Power Plc.	Investment in power business	31,044,920,000 THB	30,510,217,000 THB	3,051,021,700	10	78.57% (held by Banpu Plc.)	1550, Thanapoom Tower, 26 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2007 6000
12. Banpu Coal Power Ltd.	Investment in power business	5,921,587,160 THB	5,921,587,160 THB	592,158,716	10	99.99% (held by Banpu Power Plc.)	1550, Thanapoom Tower, 26 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2007 6000
13. Banpu Renewable Energy Co., Ltd.	Investment in renewable energy business	960,000,000 THB	960,000,000 THB	96,000,000	10	99.99% (held by Banpu Power Plc.)	1550, Thanapoom Tower, 26 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2007 6000
14. Banpu Power (Japan) Co., Ltd.	Investment in renewable energy business	5,000,000 THB	5,000,000 THB	500,000	10	100.00% (held by Banpu Power Plc.)	1550, Thanapoom Tower, 26 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2007 6000

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
Indonesia								
15. PT. Indo Tambangraya Megah Tbk	Construction, trading, transportation, industry, repair and services related to coal mining and electricity business	1,500,000,000,000 IDR	564,962,500,000 IDR	1,129,925,000	500	67.13% (held by Banpu Minerals (Singapore) Pte. Ltd.)	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
16. PT. Kitadin	Coal mining and related business	1,000,000,000,000 IDR	377,890,000,000 IDR	188,945	2,000,000	99.99% (held by PT. Indo Tambangraya Megah Tbk)	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
17. PT. Indominco Mandiri	Coal mining in Indonesia	20,000,000,000 IDR	12,500,000,000 IDR	12,500	1,000,000	99.99% (held by PT. Indo Tambangraya Megah Tbk) 0.01% held by PT. Kitadin	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
18. PT. Jorong Barutama Greston	Coal mining in Indonesia	318,855,000,000 IDR	318,855,000,000 IDR	21,257	15,000,000	99.99% (held by PT. Indo Tambangraya Megah Tbk) 0.01% held by PT. Kitadin	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
19. PT. Trubaindo Coal Mining	Coal mining in Indonesia	100,000,000,000 IDR	63,500,000,000 IDR	63,500	1,000,000	99.00% (held by PT. Indo Tambangraya Megah Tbk) 1.00% held by PT. Kitadin	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
20. PT. Bharinto Ekatama	Coal mining in Indonesia	68,000,000,000 IDR	17,000,000,000 IDR	17,000	1,000,000	99.99% (held by PT. Indo Tambangraya Megah Tbk) 0.01% held by PT. Kitadin	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
21. PT. ITM Indonesia	Trading, land transportation, industry, agriculture, construction, repair and services	40,000,000,000 IDR	11,000,000,000 IDR	11,000	1,000,000	99.99% (held by PT. Indo Tambangraya Megah Tbk) 0.01% held by PT. Kitadin	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
22. PT. Tambang Raya Usaha Tama	Mining support services	500,000,000,000 IDR	353,980,000,000 IDR	35,398	10,000,000	99.99% (held by PT. Indo Tambangraya Megah Tbk) 0.01% held by PT. Kitadin	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
23. PT. ITM Batubara Utama	Coal mining business	40,000,000,000 IDR	11,000,000,000 IDR	11,000	1,000,000	99.99% (held by PT. Indo Tambangraya Megah Tbk) 0.01% held by PT. Kitadin	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
24. PT. ITM Energi Utama	Energy business	1,200,000,000,000 IDR	300,000,000,000 IDR	300,000	1,000,000	99.99% (held by PT. Indo Tambangraya Megah Tbk)	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
25. PT. ITM Banpu Power	Investment in power business	1,200,000,000,000 IDR	300,000,000,000 IDR	300,000	1,000,000	70.00% (held by PT. Indo Tambangraya Megah Tbk) 30.00% (held by Banpu Power Plc.)	Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
26. PT. Gas Emas	Fuel distributor for mining business	38,900,000,000 IDR	16,532,500,000 IDR	1,700,000	9,725	75.00% (held by PT. ITM Indonesia)	Wisma 46 Kota BNI 50 th Floor, Suite 50.06, Jl. Jend Sudirman Kav. 1, Karet Tengsin, Tanah abang, Jakarta Pusat Operational office: Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
27. PT. Tepian Indah Sukses	Coal mining in Indonesia	3,000,000,000 IDR	1,000,000,000 IDR	1,000	1,000,000	70.00% (held by PT. Indo Tambangraya Megah Tbk)	Jl. A.M. Sangaji No. 38F No. 9-10, Kel. Bandara, Kec. Sungai Pinang, Prov. Samarinda Corresponding office: Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
28. PT. Nusa Persada Resources	Coal mining in Indonesia	10,000,000,000 IDR	3,700,000,000 IDR	37,000	100,000	99.99% (held by PT. Indo Tambangraya Megah Tbk) 0.01% (held by PT. ITM Batubara Indonesia)	Jl. Ir. H. Juanda No. 36 D RT. 007/001, Kel. Rempoa Kec. Ciputat Timur, Kota Tangerang Selatan Corresponding office: Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
29. PT. Energi Batubara Perkasa	Coal Trading	1,000,000,000 IDR	1,000,000,000 IDR	1,000	1,000,000	99.90% (held by PT. Indo Tambangraya Megah Tbk) 0.10% (held by PT. ITM Batubara Indonesia)	Jalan Pendreh No. 173, Kelurahan Melayu, Muara Teweh. Corresponding office: Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100

Australia

30. Banpu Australia Co. Pty Ltd.	Investment in coal mining in Australia	2,428,021,000 AUD	2,428,021,000 AUD	2,428,021,000	1	100.00% (held by Banpu Singapore Pte. Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
31. Centennial Coal Co., Ltd.	Coal mining and marketing	2,449,783,562 AUD	2,449,783,562 AUD	395,126,381	6.20	100.00% (held by Banpu Australia Co. Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
32. Centennial Northern Coal Services Pty Ltd.	Employer company for Newstan Washery	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
33. Berrima Coal Pty Ltd.	Dormant	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
34. Centennial Airly Pty Ltd.	Coal mining	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
35. Centennial Angus Place Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
36. Centennial Coal Infrastructure Pty Ltd.	Coal exporting logistics and infrastructure	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
37. Centennial Coal Services and Marketing Pty Ltd.	Coal marketing	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
38. Centennial Northern Mining Services Pty Ltd.	Dormant	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
39. Centennial Inglenook Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
40. Centennial Mandalong Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
41. Centennial Mannering Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
42. Centennial Munmorah Pty Ltd.	Coal mining (now Dormant)	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
43. Centennial Myuna Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
44. Centennial Newstan Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
45. Charbon Coal Pty Ltd.	Coal mining	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
46. Centennial Clarence Pty Ltd.	Coal mining - Clarence JV	8,800,000 AUD	8,800,000 AUD	8,800,000	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
47. Centennial Fassifern Pty Ltd.	Coal mining	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
48. Powercoal Pty Ltd.	Dormant holding company	4,590,001 AUD	4,590,001 AUD	4,590,001	1	100.00% (held by Centennial Fassifern Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
49. Powercoal Superannuation Pty Ltd.	Superannuation Company (Dormant)	2 AUD	2 AUD	2	1	100.00% (held by Powercoal Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
50. Coalex Pty Ltd.	Coal mining - Clarence JV	7,500,000 AUD	7,500,000 AUD	750,000	10	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
51. Clarence Coal Investments Pty Ltd.	Coal mining - Clarence JV	19,500,002 AUD	19,500,002 AUD	15,500,002 Ord A shares 4,000,000 Ord B shares	1	100.00% (held by Coalex Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
52. Clarence Colliery Pty Ltd.	Coal mining - Clarence JV	10,000 AUD	10,000 AUD	10,000	1	100.00% (held by Coalex Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
53. Clarence Coal Pty Ltd.	Coal mining - Clarence JV	2 AUD	2 AUD	2	1	100.00% (held by Coalex Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
54. Collieries Superannuation Pty Ltd.	Superannuation company (Dormant)	2 AUD	2 AUD	2	1	100.00% (held by Powercoal Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
55. Elcom Collieries Pty Ltd.	Dormant	1,500,000 AUD	1,500,000 AUD	750,000	2	100.00% (held by Powercoal Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
56. Huntley Colliery Pty Ltd.	Dormant	354,000 AUD	354,000 AUD	177,000	2	100.00% (held by Powercoal Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
57. Mandalong Pastoral Management Pty Ltd.	Dormant	2,736,028 AUD	2,736,028 AUD	10,000,000 Ord partly paid shares - \$0.20 368,014 Ord shares - \$2.00	2	100.00% (held by Powercoal Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
58. Powercoal Employee Entitlements Company Pty Ltd.	Employee trust company ex powercoal	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
59. Hartley Valley Coal Co Pty Ltd.	Dormant	1,000,000 AUD	1,000,000 AUD	1,000,000	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
60. Ivanhoe Coal Pty Ltd.	Coal mining	2 AUD	2 AUD	2	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
61. Centennial Drilling Services Pty Ltd.	Drilling services	1,250,000 AUD	1,250,000 AUD	750,000 A Class shares 250,000 B Class shares 250,000 C Class shares	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
62. Centennial Springvale Holdings Pty Ltd.	Coal mining	1 AUD	1 AUD	1	1	100.00% (held by Centennial Coal Co., Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
63. Centennial Springvale Pty Ltd.	Coal mining	1,000,000 AUD	1,000,000 AUD	1,000,000	1	100.00% (held by Centennial Springvale Holdings Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
64. Springvale Coal Pty Ltd.	Coal mining	2,000,000 AUD	2,000,000 AUD	2,000,000	1	100.00% (held by Centennial Springvale Holdings Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
65. Boulder Mining Pty Ltd.	Coal mining	1,000 AUD	1,000 AUD	1,000	1	100.00% (held by Centennial Springvale Holdings Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	62 2 9266 2700
66. AFE Investments Pty Ltd.	Mining investment	2 AUD	2 AUD	2	1	100.00% (held by Banpu Australia Co. Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	62 2 9266 2700
67. Banpu Australia Resources Pty Ltd.	Investment in coal mining	2 AUD	2 AUD	2	1	100.00% (held by Banpu Australia Co. Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
68. Hunnu Coal Pty Ltd.	Coal mining and trading	277,431,739 AUD	277,431,739 AUD	395,725,717	No par value*	100.00% (held by Banpu Minerals (Singapore) Pte., Ltd.)	22 Lindsay Street, Perth WA 6000, Australia	61 8 9328 6262
China								
69. Banpu (Shanghai) Trading Co., Ltd.	Coal trading	50,000,000 CNY	50,000,000 CNY	N/A	N/A	100.00% (held by Banpu Minerals (Singapore) Pte., Ltd.)	Unit 307-52, 3 rd Floor, Building 2, No.38, Debao Road, Free Trade Zone (Shanghai) Province, P.R. China	(8610) 84004988
70. Shijiazhuang Chengfeng Cogen Co., Ltd.	Power and steam generation and sales	30,516,000 USD	30,516,000 USD	N/A	N/A	100.00% (held by Banpu Power Investment Co., Ltd.)	North Beiguan, Zhengding County, Shijiazhuang City 050800, Hebei Province, P.R. China	(86311) 85176918

* Under Corporate Law

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
71. Banpu Investment (China) Co., Ltd.	Investment in power business	30,000,000 USD	30,000,000 USD	N/A	N/A	100.00% (held by Banpu Power Investment Co., Ltd.)	9A, 9 th Floor, Tower B, Gateway Plaza, No. 18 Xia Guang Li, North Road of East Third Ring, Chaoyang District, Beijing Province, P.R. China	(8610) 57580388
72. Tangshan Banpu Heat and Power Co., Ltd.	Power and steam generation and sales	78,082,200 USD	78,082,200 USD	N/A	N/A	87.92% (held by Pan-Western Energy Corporation LLC) 12.08% (held by Banpu Investment (China) Co., Ltd.)	West of Gujiaying Village, Benshi Road, Luannan County, Tangshan City 063500, Hebei Province, P.R. China	(86315) 4168274
73. Zouping Peak CHP Co., Ltd.	Power and steam generation and sales	261,800,000 CNY	261,800,000 CNY	N/A	N/A	70.00% (held by Zouping Peak Pte. Ltd.)	Xiwang Industrial Region, Handian Town, Zouping County, Binzhou City 256209, Shandong Province, P.R. China	(86543) 4615655
74. BPP Renewable Investment (China) Co., Ltd.	Investment in renewable energy business	76,950,000 USD	68,050,000 USD	N/A	N/A	100.00% (held by Banpu Renewable Energy Co., Ltd.)	Unit 108, No. 26 Jiafeng Road, Pilot Free Trade Zone, Shanghai Province, P.R. China	(8610) 57580388
75. Anqiu Huineng New Energy Co., Ltd.	Solar power generation	66,000,000 CNY	66,000,000 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	No.19 Dafugou, Wushan Town, Anqiu County, Weifang City, Shandong Province, P.R. China	(86531) 86025858
76. Weifang Tian'en Jinshan Comprehensive Energy Co., Ltd.	Solar power generation	83,000,000 CNY	83,000,000 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	Unit 205, No.16 Shengli Street, Wushan Town, Anqiu County, Weifang City, Shandong Province, P.R. China	(86531) 86025858
77. Dongping Haoyuan Solar Power Generation Co., Ltd.	Solar power generation	69,000,000 CNY	69,000,000 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	East side of Xishan road North, Dongping County, Taian City, Shandong Province, P.R. China	(86538) 2092568
78. Anqiu City Hui'en PV Technology Co., Ltd.	Solar power generation	62,000,000 CNY	62,000,000 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	No. 26 Qinjiazhuangzi Village, Dasheng Town, Anqiu County, Weifang City, Shandong Province, P.R. China	(86531) 86025858
79. Jiaxing Deyuan Energy-Saving Technology Co., Ltd.	Solar power generation	35,000,000 USD	150,735,586 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	Room 425, Jinxiu Dadao No.1, Yaozhuang Village, Jiashan County, Zhejiang Province, P.R. China	(86531) 86025858
80. Banpu Power Trading (Shandong) Co., Ltd.	Power trading	20,000,000 CNY	0 CNY	N/A	N/A	100.00% (held by Banpu Investment (China) Co., Ltd.)	Unit 2608, Tower C, No.11 Jingshi Road, Shizhong District, Jinan Province, P.R. China	(86531) 86025858
81. Banpu Power Trading (Hebei) Co., Ltd.	Power trading	20,000,000 CNY	0 CNY	N/A	N/A	100.00% (held by Banpu Investment (China) Co., Ltd.)	North of Beiguan Village, Zhengding County, Shijiazhuang City, Hebei Province, P.R. China	(86311) 85176918
82. Feicheng Xingyu Solar Power PV Technology Co., Ltd.	Solar power generation	35,000,000 CNY	0 CNY	N/A	N/A	100.00% (held by BPP Renewable Investment (China) Co., Ltd.)	Huangtuling Village, Anzhan Town, Feicheng County, Tai'an City, Shandong Province, P.R. China	(86531) 86025858

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
Mongolia								
83. Hunnu Altai LLC	Foreign trade and investment in coal mining	93,712,528,534.47 MNT	93,712,528,534.47 MNT	676,673	138,490	100.00% (held by Hunnu Investments Pte. Ltd.)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
84. Hunnu Gobi Altai LLC	Foreign trade, minerals exploration and mining	155,000,000 MNT	155,000,000 MNT	155,000	1,000	80.00% (held by Hunnu Altai LLC)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
85. Hunnu Altai Minerals LLC	Foreign trade and minerals mining	17,242,032,000 MNT	17,242,032,000 MNT	17,242,032	1,000	100.00% (held by Hunnu Altai LLC)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
86. Hunnu Resources LLC	Foreign trade and investment in coal mining	346,091,220,996.57 MNT	346,091,220,996.57 MNT	215,690,564	1,604.57	100.00% (held by Hunnu Coal Pty Ltd.)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
87. Munkh Sumber Uul LLC	Foreign trade	2,922,830,982.83 MNT	2,922,830,982.83 MNT	292,283	10,000	100.00% (held by Hunnu Resources LLC)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
88. Golden Gobi Mining LLC	Foreign trade and minerals exploration	17,080,558,666.51 MNT	17,080,558,666.51 MNT	1,708,055	10,000	100.00% (held by Hunnu Resources LLC)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
89. Great East Minerals LLC	Foreign trade and minerals exploration	2,851,018,000 MNT	2,851,018,000 MNT	285,101	10,000	99.99% (held by Hunnu Resources LLC)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
90. Bilegt Khairkhan Uul LLC	Foreign trade and minerals mining	29,251,438,354.99 MNT	29,251,438,354.99 MNT	2,925,144	10,000	100.00% (held by Hunnu Resources LLC)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
91. Hunnu Power LLC	Foreign trade	40,702,000 MNT	40,702,000 MNT	4,070	10,000	100.00% (held by Hunnu Resources LLC)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
92. Munkhnoyon Suvraga LLC	Foreign trade, minerals mining, tourism and construction material sale	179,445,428,000 MNT	179,445,428,000 MNT	179,445,428	1,000	100.00% (held by Hunnu Resources LLC)	Suite 1502, Fides Tower, Gegeenten Complex, 15 th khoroo, Khan-Uul district, Ulaanbaatar-17011, Mongolia	(976) 75551221, (976) 75551551
Singapore								
93. Banpu Minerals (Singapore) Pte. Ltd.	Investment in coal mining	N/A	17,670,002 SGD 11,000,000 USD	17,670,002 17,670,002	No par value*	50.00% Ordinary Shares (held by Banpu Minerals Co., Ltd.) 50.00% Preference Shares (held by Banpu Coal Investment Co., Ltd.)	One Marina Boulevard, #28-00 Singapore 018989	65 6890 7188
94. BMS Coal Sales Pte. Ltd.	Coal trading including coal agent and coal blending	N/A	5,000,000 USD	5,000,000	No par value*	100.00% (held by Banpu Minerals (Singapore) Pte. Ltd.)	One Marina Boulevard, #28-00 Singapore 018989	65 6890 7188
95. Banpu Singapore Pte. Ltd.	Investment in coal business	N/A	1,500,000 SGD 2,636,094,931.94 USD	1,500,000 2,608,711,709	No par value*	100.00% (held by Asian American Coal, Inc.)	One Marina Boulevard, #28-00 Singapore 018989	65 6890 7188
96. Hunnu Investments Pte. Ltd.	Investment in coal business	N/A	100 SGD 34,938,188.82 USD	100 34,938,188	No par value*	100.00% (held by Hunnu Coal Pty Ltd.)	One Marina Boulevard, #28-00 Singapore 018989	65 6890 7188

* Under Corporate Law

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
97. Banpu Power Investment Co., Ltd.	Investment in power business	N/A	90,177,391 USD	83,132,663	No par value*	100.00% (held by Banpu Power International Ltd.)	8 Marina Boulevard #05-02, Marina Bay Financial Centre, Singapore 018981	65 6338 1888
98. Zouping Peak Pte. Ltd.	Investment in power business	N/A	2 SGD	2	No par value*	100.00% (held by Banpu Power Investment Co., Ltd.)	8 Marina Boulevard #05-02, Marina Bay Financial Centre, Singapore 018981	65 6338 1888
99. Banpu Renewable Singapore Pte. Ltd.	Investment in renewable energy business	N/A	5,800,442,364 JPY 55,987,676.69 USD	5,800,442,364 55,987,675	No par value*	100.00% (held by Banpu Renewable Energy Co., Ltd.)	8 Marina Boulevard #05-02, Marina Bay Financial Centre, Singapore 018981	65 6338 1888
100. BRE Singapore Pte. Ltd.	Investment in renewable energy business	N/A	696,001 USD	696,001	No par value*	100.00% (held by Banpu Renewable Energy Co., Ltd.)	8 Marina Boulevard #05-02, Marina Bay Financial Centre, Singapore 018981	65 6338 1888
Mauritius								
101. Banpu Coal Investment Co., Ltd.	Investment in coal mining	11,050,500 USD	11,050,500 USD	11,050,500	1	100.00% (held by Banpu Minerals Co., Ltd.)	4 th Floor, Ebene Skies, Rue de L'Institut, Ebene, Republic of Mauritius	230 404 8000
102. BP Overseas Development Co., Ltd.	Investment in coal mining	515,533,002 USD	515,533,002 USD	515,533,002	1	100% (held by Banpu Plc.)	4 th Floor, Ebene Skies, Rue de L'Institut, Ebene, Republic of Mauritius	230 404 8000
103. BPIN Investment Co., Ltd.	Investment in renewable energy	91,660,100 USD	91,660,100 USD	91,660,100	1	100.00% (held by Banpu Infinergy Co., Ltd.)	4 th Floor, Ebene Skies, Rue de L'Institut, Ebene, Republic of Mauritius	230 404 8000
104. Banpu Power International Ltd.	Investment in power business	63,050,000 USD	63,050,000 USD	63,050,000	1	100.00% (held by Banpu Power Plc.)	4 th Floor, Ebene Skies, Rue de L'Institut, Ebene, Republic of Mauritius	230 404 8000
British Virgin Islands								
105. Asian American Coal, Inc.	Investment in coal mining	50,000,000 USD	40,917,026 USD	40,917,026	1	100.00% (held by BP Overseas Development Co., Ltd.)	Geneva Place, 2 nd Floor, #333 Waterfront Drive, Road Town, Tortola, British Virgin Islands	284 494 4388
106. AACI SAADEC (BVI) Holdings Ltd.	Investment in coal mining	50,000 USD	1 USD	1	1	100.00% (held by Asian American Coal, Inc.)	Vistra Corporate Services Centre, Wickhams Cay II, Road Town, Tortola, VG1110, British Virgin Islands	284 494 4640
Cayman Islands								
107. Pan-Western Energy Corporation LLC	Investment in power business	100,000 USD	100,000 USD	10,000,000	0.01	100.00% (held by Banpu Power Investment Co., Ltd.)	PO Box 309, Ugland House, Grand Cayman, KY1-1104 Cayman Islands	1 345 949 8066
Japan								
108. Banpu Energy Services Japan Co., Ltd.	Consultancy services to the operator of power generation in Japan	50,000,100 JPY	50,000,100 JPY	500,001	No par value*	100.00% (held by Banpu Energy Services (Thailand) Co., Ltd.)	Kasumigaseki Building, 33 rd Floor, 3-2-5, Kasumigaseki, Chiyoda-ku, Tokyo, Japan 100-6033	81 3 6205 4665
109. BPPR Japan Co., Ltd.	Consultancy services to the operator of power generation in Japan	100,000 JPY	100,000 JPY	1,000	No par value*	100.00% (held by BPPR Co., Ltd.)	Kasumigaseki Building, 33 rd Floor, 3-2-5, Kasumigaseki, Chiyoda-ku, Tokyo, Japan 100-6033	81 3 6205 4665

* Under Corporate Law

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
110. Aizu Land Solar G.K.	Land owner of solar project	100,000 JPY	100,000 JPY	N/A	No par value*	100.00% (held by Aura Land Development Pte. Ltd.)	Kasumigaseki Building, 33 rd Floor, 3-2-5, Kasumigaseki, Chiyoda-ku, Tokyo, Japan 100-6033	81 3 6205 4665
111. Banpu Power Trading G.K.	Energy trading	30,000,000 JPY	30,000,000 JPY	N/A	No par value*	100.00% (held by Banpu Renewable Singapore Pte. Ltd.)	Kasumigaseki Building, 33 rd Floor, 3-2-5, Kasumigaseki, Chiyoda-ku, Tokyo, Japan 100-6033	81 3 6205 4665
United States of America								
112. Banpu North America Corporation	Investment in oil and gas business	40,000,100 USD	40,000,100 USD	40,000,100	1	100.00% (held by BOG Co., Ltd.)	2711 Centerville Road, Suite 400, Wilmington, Delaware 19808	1 302 654 7584
Hong Kong								
113. Akira Energy Ltd.	Investment in renewable energy business	7,000,000 HKD	7,000,000 HKD	7,000,000	1	100.00% (held by Banpu Renewable Energy Co., Ltd.)	9 th Floor, York House, The Landmark, 15 Queen's Road Central, Hong Kong	852 2522 8101
114. Akira Energy (South) Ltd.	Investment in renewable energy business	500 HKD	500 HKD	500	1	100.00% (held by Akira Energy Ltd.)	9 th Floor, York House, The Landmark, 15 Queen's Road Central, Hong Kong	852 2522 8101
Vietnam								
115. BPP Vinh Chau Wind Power LLC	Wind power production, power transmission and distribution	11,638,000,000 VND	11,638,000,000 VND	11,638,000,000	No par value*	100.00% (held by BRE Singapore Pte. Ltd.)	22 Bui Thi Xuan Street, Quarter 1, Ward 2, Soc Trang City, Soc Trang Province, Vietnam	849 0988 5015
Associated Companies								
Australia								
116. Port Kembla Coal Terminal Ltd.	Ship loading coal port	600,000 AUD	600,000 AUD	600,000	1	16.66% (held by Centennial Coal Co., Ltd.)	Port Kembla Road, Inner Harbour, Wollongong NSW 2520, Australia	61 2 4228 0288
Joint Ventures								
Indonesia								
117. PT. Nusantara Timur Unggul	Fuel distributor	1,000,000,000 IDR	600,000,000 IDR	600	1,000,000	33.34% (held by PT. ITM Indonesia)	Gedung Graha Indramas 4 th Floor, Jalan AIP II K.S. Tubun Raya No. 77, Palmerah, West Jakarta Corresponding office: Pondok Indah Office Tower 3, 3 rd Floor, Jl. Sultan Iskandar Muda, Pondok Indah Kav. V-TA, Jakarta 12310, Indonesia	6221 29328100
Australia								
118. Springvale Coal Sales Pty Ltd.	Coal marketing	2 AUD	2 AUD	2	1	50.00% (held by Centennial Springvale Holding Pty Ltd.)	Level 18, BT Tower, 1 Market Street, Sydney NSW 2000, Australia	61 2 9266 2700
China								
119. Shanxi Gaohe Energy Co., Ltd.	Coal mining in China	1,519,860,000 CNY	1,519,860,000 CNY	N/A	N/A	45.00% (held by Asian American Coal, Inc.)	Changzhi County, Changzhi City, Shanxi Province, P.R. China	(8610) 5820 3663

* Under Corporate Law

Name	Type of Business	Authorized Capital	Paid-up Capital	No. of Paid-up Capital (Shares)	Par Value per Share	% of Holding	Head Office	Telephone
120. Hebi Zhong Tai Mining Co., Ltd.	Investment in coal mining	783,330,000 CNY	783,330,000 CNY	N/A	N/A	40.00% (held by Banpu Minerals Co., Ltd.)	No. 98, Hongqi Street, Hebi, Henan Province, P.R. China	(86392) 29174012
121. Shanxi Lu Guang Power Co., Ltd.	Power generating and sales	1,500,000,000 CNY	975,000,000 CNY	N/A	N/A	30.00% (held by Banpu Power Investment Co., Ltd.)	Songcunxiang, Zhangzi County, Changzhi City, Shanxi Province, P.R. China	(86355) 8580511
Japan								
122. Hokkaido Solar Estate G.K.	Land owner of solar project	10,000,000 JPY	10,000,000 JPY	N/A	No par value*	60.00% (held by Banpu Energy Services (Thailand) Co., Ltd.)	1-1-7 Moto-akasaka, Minato-ku, Tokyo, Japan	81 3 3560 1115
123. Digital Energy Solutions Corporation	Electricity sales and management	50,000,000 JPY	50,000,000 JPY	5,000	No par value*	35.00% (held by Banpu Renewable Singapore Pte. Ltd.)	Kasumigaseki Building, 33 rd Floor, 3-2-5, Kasumigaseki, Chiyoda-ku, Tokyo, Japan 100-6033	81 3 6205 4665
Laos								
124. Hongsa Power Co., Ltd.	Power generating and sales	927,000,000 USD	927,000,000 USD	92,700,000	10	40.00% (held by Banpu Power Plc.)	NNN Building 4 th Floor, Room No.D5 Bourichan Road, Phonsinouane Village, Sisattanak District, Vientiane Capital, Lao PDR	856 (0) 2122 483
125. Phu Fai Mining Co., Ltd.	Mining concession	50,000 USD	50,000 USD	5,000	10	37.50% (held by Banpu Power Plc.)	NNN Building 4 th Floor, Room No.D5 Bourichan Road, Phonsinouane Village, Sisattanak District, Vientiane Capital, Lao PDR	857 (0) 2122 483
Singapore								
126. Aura Land Development Pte. Ltd.	Investment in property for solar energy business	N/A	3,840,989.20 USD	3,840,988	No par value*	75.00% (held by Banpu Energy Services (Thailand) Co., Ltd.)	8 Marina Boulevard #05-02, Marina Bay Financial Centre, Singapore 018981	65 6338 1888
127. Aizu Energy Pte. Ltd.	Investment in renewable energy business	N/A	17,630,952.87 USD 1,258,473,406.83 JPY	17,630,949 1,258,473,406	No par value*	75.00% (held by Banpu Renewable Energy Co., Ltd.)	8 Marina Boulevard #05-02, Marina Bay Financial Centre, Singapore 018981	65 6338 1888
128. Sunseap Group Pte. Ltd.	Investment in renewable energy business	N/A	6,322,808.83 SGD 173,031,195.57 SGD	995,725 1,438,283	No par value*	38.46% (held by BPIN Investment Co., Ltd.)	2 Boon Leat Terrace, #04-03/04 Harbourside Building 2, Singapore 119844	65 6816 1000
129. New Resources Technology Pte. Ltd.**	Manufacturing of Lithium-Ion Battery (LiB) for EV and Energy Storage System (ESS)	N/A	59,737,835.50 SGD	385,699	No par value*	47.68% (held by BPIN Investment Co., Ltd.)	66 Kallang Pudding Road, #05-02 Hor Kew Business Centre, Singapore 349324	65 6846 0180
Thailand								
130. BPPR Co., Ltd.	Investment in consultancy services to the operator of power generation	740,000 THB	740,000 THB	7,400	100	75.00% (held by Banpu Energy Services (Thailand) Co., Ltd.)	1550, Thanapoom Tower, 27 th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok 10400, Thailand	0 2694 6600
131. BLCP Power Ltd.	Power generation and sales	12,010,000,000 THB	12,010,000,000 THB	120,100,000	100	50.00% (held by Banpu Coal Power Ltd.)	9 I-8 Road, Map Ta Phut Industrial Estate, Muang District, Rayong 21000, Thailand	038 925 100
132. Urban Mobility Tech Co., Ltd.	Electric vehicle business	1,290,320 THB	1,290,320 THB	129,032	10	22.50% Preference Shares (held by Banpu Infinergy Co., Ltd.)	256 Soi Soonvijai, Rama IX Soi 17 Road, Bangkok, Huaykwang, Bangkok 10310, Thailand	086 887 4796

* Under Corporate Law

** Changed the name to Durapower Holdings Pte. Ltd. on 10 January 2019



BANPU PUBLIC COMPANY LIMITED

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**OUR WAY
IN ENERGY**

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REPORT OF THE BOARD OF DIRECTORS' RESPONSIBILITIES FOR THE FINANCIAL STATEMENTS

The main priority of the Board of Directors is to supervise the Company's operations, making sure they are in line with good corporate governance policy and that the financial statements and financial information appearing in the Company's annual report are accurate, complete and adequate. Its duty is also to make sure that the financial statements are in line with Thai Financial Reporting Standards and that an appropriate accounting policy has been chosen and is being carefully pursued on a regular basis. In addition, the Board of Directors must also ensure that the Company has an effective internal control system to assure the credibility of its financial statements. The Board also ensures protection over potential conflicts of interest through systems which are place to prevent unusual transactions. Connected transactions which might lead to possible conflicts of interest are closely monitored to ensure they are genuine transactions and are reasonably carried out, based on the normal course of business and for the Company's maximum benefits, and that the Company is in compliance with relevant laws and regulations. The Audit Committee has already reported the result of its action to the Board of Directors and has also reported its opinions in the Audit Committee's Report as seen in the annual report.

The Board of Directors is of the opinion that the Company's internal control system has been prove to be satisfactory. The Board was able to obtain reasonable assurance on the credibility of the Company's financial statements as at 31 December 2018 which the Company's auditor has audited based on the generally-accepted accounting standards. The auditor is of the opinion that the financial statements present fairly the Company's financial position and the results of its operations in accordance with generally accepted accounting principles.



Mr. Chanin Vongkusolkrit
Chairman of the Board of Directors



Ms. Somruedee Chaimongkol
Chief Executive Officer

REPORT OF THE AUDIT COMMITTEE TO SHAREHOLDERS

Dear Shareholders of Banpu Public Company Limited,

The Audit Committee of Banpu Public Company Limited consists of three independent directors, who are competent and have relevant experiences in accounting, finance, business management and economics, namely Mr. Teerana Bhongmakapat, as Chairman of the Audit Committee, Mr. Rutt Phanijphand and Mr. Suthad Setboonsarng, as committee members. Ms. Wiyada Wiboonsirichai, Senior Vice President of Global Internal Audit and Compliance, is the Secretary of the Audit Committee. The Audit Committee independently performs roles and responsibilities entrusted by the Board of Directors according to best practice guideline for the Audit Committee and in compliance with the regulations of the Stock Exchange of Thailand. The Audit Committee stresses good corporate governance as well as efficient risk management, adequate and appropriate internal control and effective internal auditing in order to create sustainable value for the organization based on the Three Lines of Defense model. The Audit Committee has been continuously promoting compliance with Anti-Corruption Policy and practices. On 7 June 2018, Banpu was recertified as a member of Private Sector Collective Action Coalition Against Corruption (CAC). Global Internal Audit Department reviewed Banpu's Anti-Corruption practices and assured that Banpu had seriously and efficiently implemented such practices.

In 2018, the Audit Committee convened 10 times at which a quorum was established with the participation of the executives, Global Internal Audit and the external auditors in the related agenda. The Audit Committee also held a private meeting with the external auditors without the presence of the management. The results of the Audit Committee meetings were regularly reported to the Board of Directors. The Audit Committee's main activities can be summarized as follows:

1. Review of Financial Information

The Audit Committee reviewed Banpu's quarterly financial information and the 2018 financial statements on key matters, including related party transactions, the transactions with a possible conflict of interest and the appropriateness of accounting policies. The Committee also reviewed key matters, significant changes in accounting, accounting estimates, the disclosure of notes to the financial statements and the external auditor's observations from the review and audit of the financial statements. Sufficient explications from auditors, management and related persons were applied to assure that the financial statement reporting and disclosure of notes to the financial statements were prepared in accordance with Thai Financial Reporting Standards (TFRS), which is in accordance with International Financial Reporting Standards (IFRS). Based on the auditors' unqualified opinion, the Audit Committee agreed that the Company's financial statements are accurate, reliable and in compliance with the applicable laws and the Generally Accepted Accounting Principles. Additionally, disclosure of information is sufficient and timely for the benefit of investors and users of the financial statements.

2. Review of Internal Control and Internal Audit

The Audit Committee reviewed the internal control system by considering a report on internal audit results and their follow-up of Banpu Group on a quarterly basis. The aspects reviewed include operations, use of resources, safeguard of assets, compliance, anti-corruption and reliability of financial report, including the

internal control adequacy assessment based on the assessment standard of Security Exchange Commission. The Audit Committee is confident that Banpu has sufficient and appropriate internal control for business operations. In 2018, the Company improved internal control and corporate governance to be more prudent and appropriate to foster “Banpu Heart,” the corporate culture which comprises Passionate, Innovative and Committed, to steer the Company toward its goal of being a leading integrated energy solutions company in Asia-Pacific.

The Audit Committee supervised the operation of the Global Internal Audit and Compliance unit by reviewing and approving the strategy and annual audit plan of Global Internal Audit department, which are in line with the Company’s strategic plan. The Committee provided suggestions as well as monitored internal audit’s operation to completion as planned by focusing on internal auditing, preventive consultation and prompt corrective action of significant issues. Apart from that, the Committee promoted the improvement of internal audit performance and supported smart audit using information technology together with data analytics and monitoring to enhance efficiency and effectiveness. This is also to prepare for business expansion and disruption by maintaining an adequate and appropriate system of internal control. The Audit Committee assured that the Company has an internal audit system which is independent and in accordance with international standards and that internal auditing covers all units and important procedures in line with the Company’s key risks.

3. Review of Compliance

The Audit Committee reviewed compliance of Banpu Group’s businesses with applicable laws and regulations. The Company has established a Compliance Management System to assure, monitor and report compliance issues to the Audit Committee. The Corporate Compliance Department is responsible for assuring and monitoring compliance with applicable laws and regulations and reporting the results to the management and the Audit Committee on a regular basis. Moreover, the Company reported risk management and internal audit results covering key compliance risks. The overall results revealed that there were no significant compliance issues or problems found.

In 2018, the Company had undergone a significant restructuring, emphasizing independence and improvement of supervision efficiency, by merging Corporate Compliance Department with Global Internal Audit Department as Global Internal Audit and Compliance Unit, which is led by Senior Vice President-Global Internal Audit and Compliance. This new unit focuses on a proactive strategy and close collaboration with other units globally by monitoring law and regulatory changes in the countries the Company has invested which may have a significant impact on the Company’s business. This organizational change has improved the efficiency of compliance operation, which reflects the Company’s commitment to be responsible for the environment, society and communities.

4. Good Corporate Governance

The Audit Committee reviewed compliance with the Code of Conduct as well as efficiency and effectiveness of corporate governance executed by the Board members, management and employees. In the opinion of

the Audit Committee, the Board members and the management are a role model for corporate governance, supporting the implementation of anti-corruption policy and promoting every employee to strictly adhere to the Company's Corporate Governance policy. The Audit Committee also reviewed related party transactions or the transactions that may cause conflicts of interests between Banpu, its subsidiaries and other related parties, agreeing that those transactions were fair and reasonable and were carried out for the Group's benefit in accordance with the SEC's and SET's rules and regulations. To combat corruption, the Company has established whistleblower channels to receive complaints or grievances of corruption and unethical business practices and ensured that the complaint handling process is fair to all parties and that there is appropriate protection for whistleblowers and the alleged.

5. Oversight of Risk Management

The Audit Committee reviewed the efficiency and effectiveness of risk management process and closely monitored key risks that impact to the Company's business operations which cover coal industry, power industry and directions of new businesses such as oil and gas, renewable energy and new energy technologies. The Audit Committee reviewed the enterprise risk management on a quarterly basis. The Company has risk assessment and monitoring procedures to monitor the situations that can influence the patterns of business operation and management at all levels and in all major investment projects. The business progress and situation that affect the operations are reported. Preventive measures are put into place, emphasizing systematic and sustainable management which timely responds to rapidly changing business environment and trends.

In 2018, the Company reviewed its risk management policy, formulated the Risk Management Committee Charter and developed risk appetite framework and key risk indicators to improve effectiveness and concretely respond to changes in business plan. Strategic challenges facing the global energy industry, disruptive technology and changes in environmental policies forced the Company to reduce dependency on carbon and coal industry. The Company has diversified into renewable or environmental-friendly energy business and brought in digital to the organization, elevating technology in management, production processes and development of new products and businesses. These changes are aligned with Banpu's Greener and Smarter strategy. The Company's overall risks had been gradually decreasing over the past year. Energy prices particularly crude oil prices wildly fluctuated; however, coal prices remained high and stable. Regarding strategic risks, the Company has made impressive progress in Diversification Strategy by expanding into natural gas and renewable energy businesses, which will benefit the Company in the long run. The Audit Committee acknowledged the satisfying progress of natural gas business and coal trading. The Committee also prioritized the risks and uncertainties concerning laws and regulations in the host countries, environmental issues and safety including cybersecurity, operating results, finance, human resources and so forth.

6. Appointment of Auditors and Audit Fees for 2019

The Audit Committee considered the selection of auditors based on Banpu's evaluation criteria, including their experience, knowledge, expertise, independence and proposed audit fees compared to workload and the Company's business. The Committee also reviewed the auditors' qualifications to ensure that they meet

the Stock Exchange of Thailand's requirements. The Audit Committee proposed the appointment of auditors to the Board of Directors for consideration and for a further proposal to shareholders for approval. The following individuals of PricewaterhouseCoopers ABAS Ltd. (PwC) were nominated:

1. Ms. Amornrat Permpoonwattanasuk, CPA, License No. 4599; and/or
2. Mr. Pongthavee Ratanakoses, CPA, License No. 7795; and/or
3. Mr. Vichien Khingmontri, CPA, License No. 3977;

For the year 2019, the total audit fee for Banpu was proposed at THB 2,505,838. The Audit Committee also acknowledged the total estimated annual and quarterly audit fees of Banpu and its subsidiaries for the amount of THB 80,540,087.

In summary, in 2018, the Audit Committee performed its duties and responsibilities set forth in the Audit Committee Charter with accuracy, independence and prudence for the equitable benefit of the stakeholders. The Audit Committee maintained its opinion that Banpu's financial report is accurate and reliable with sufficient disclosure of information. Banpu is committed to a sound corporate governance policy; has an appropriate risk management system, complies with applicable laws and regulations, has an adequate and effective internal control and internal audit; and is able to properly respond to all changes influenced by both internal and external factors.

20 February 2019

On behalf of the Audit Committee



Mr. Teerana Bhongmakapat

Chairman of the Audit Committee
Banpu Public Company Limited

MANAGEMENT'S DISCUSSION AND ANALYSIS OF THE CONSOLIDATED FINANCIAL STATEMENTS

No. 0199/010

Bangkok Office

21 February 2019

Re: Management's Discussion and Analysis of the consolidated financial statements for the year ended 31 December 2018

Attention: President The Stock Exchange of Thailand

Banpu Public Company Limited ("the company") hereby submits a consolidated financial statements for the year ended 31 December 2018 which were audited by auditors to the Stock Exchange of Thailand and accordingly to the general public.

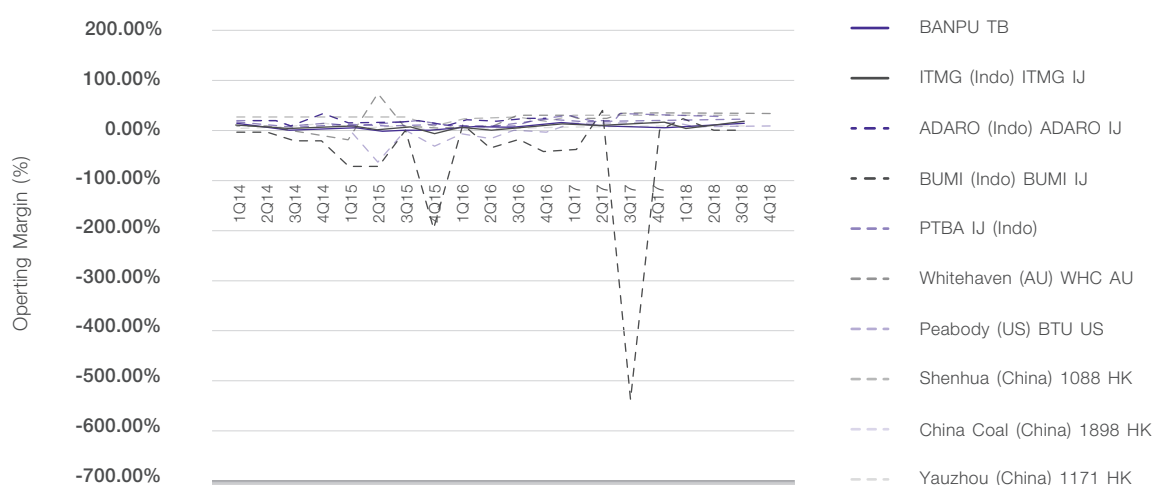
The company's management would like to explain its performance for the year ended 31 December 2018 in comparison with the same period ended 31 December 2017 and its statement of financial position as of 31 December 2018 compared with the statement of financial position as of 31 December 2017. The analysis topics are as follows;

1. Industry Analysis of Coal producers' operating performance in Coal industry
2. Company performance analysis
3. Consolidated statement of financial position
4. Consolidated statement of cash flows
5. Management Discussion & Analysis

1. Industry Analysis - Coal producers' operating performance in Coal industry

The market thermal coal price has gradually rebounded starting from July 2016 after coal price continuously declined since 2013. The following presentations illustrate the operating margin of major coal companies in each country and the coal price index;

Coal companies Operating margin comparisons on quarterly basis FY 2014-4Q2018



Source: Bloomberg, Feb 2019

Global Coal: Newc Index US\$ Per Tonne (from Jan 2015 – December 2018)



2. Company Performance Analysis

The analysis and explanation of the Group's performance for the year ended 31 December 2018 and 2017 as follows:

Consolidated statements of Income for the year ended 31 December 2018 and 2017

Consolidated financial performance (Unit: Million \$)	2018	2017
Sales	3,481	2,877
Cost of sales	(2,253)	(1,767)
Gross profit	1,228	1,110
Selling expenses	(182)	(160)
Administrative expenses	(237)	(218)
Indemnity payment	(86)	-
Royalty fee	(291)	(268)
Profit sharing from joint ventures and associates	264	205
Other income (expense)	(17)	(52)
Financial costs	(175)	(140)
Profit before tax	504	477
Income tax	(189)	(134)
Net profit for the year	315	343
Owners of the parent	205	233
Non-controlling interest	110	110
Earnings per share (Unit: USD)	0.040	0.046

2.1 Sales reported at \$3,481 million (equivalent THB 112,771 million), an increase of \$604 million or 21% compared to last year, was mainly from an increase of coal sales volume and coal selling price. Details of the Group's revenue are as follows:

- Revenue from coal sales of \$ 3,020 million accounted for 87% of total revenue. The revenue from coal sales comprise of :
 - Sales from Indonesia coal mines of \$1,984 million.
 - Sales from Australia coal mines of \$1,014 million.
 - Sales from others of \$22 million.
- Sales of power and steam of \$196 million represented 6% of total revenue from CHP plant and solar power plant in China.
- Sales of gas business of \$144 million represented 4% of total revenue, an increase of \$107 million was from an increase of production and sales volume compared to prior year.
- Others of \$121 million represented 3% of total revenue, an increase of \$99 million mainly was from oil trading business of a subsidiary in Indonesia.

Revenue (Unit: Million \$)	2018	2017
Coal business	3,020	2,629
Power & Steam business	196	189
Gas business	144	37
Others	121	22
Total	3,481	2,877

Coal Business

Source of Coal	2018 Sales Vol. Mil Tonnes	2017 Sales Vol. Mil Tonnes	2018 Avg. Price Per Tonne	2017 Avg. Price Per Tonne	2018 Avg. Cost Per Tonne	2017 Avg. Cost Per Tonne
Indonesia Mine	24.01	23.28	US\$ 82.62	US\$ 73.98	US\$ 47.98	US\$ 44.57
Australia Mine	14.02	13.36	A\$ 105.33	A\$ 86.13	A\$ 72.54	A\$ 56.84
Total	38.03	36.64				

- Coal sale volume of 2018 was 38.03 million tonnes, increased by 1.39 million tonnes or 4%, from an increase of sales volume from Indonesia mines by 0.73 million tonnes and Australia mines by 0.66 million tonnes.
- Average selling price of 2018 was \$78.77 per tonne, increased by \$7.67 per tonne or 11% (2017: \$71.10 per tonne), as a result of increasing of the global thermal coal market price compared to previous year. Indonesia mines' average selling price was \$82.62 per tonne which increased by \$8.64 per tonne or 12% from last year.

Australia mines' average selling price of 2018 was A\$105.33 per tonne, increased by A\$19.20 per tonne or 22% (2017: A\$86.13 per tonne). An increase was mainly from a higher of selling price, especially from export sales, as a result of a rising of global coal market price compared to last year, net with an impact from a depreciation of AUD currency against USD currency, that impacted lessen of revenue in terms of USD currency when converted from revenue in AUD currency. Average exchange rate of AUD/USD was USD 0.7478 (2017: USD 0.7664).

Australia mines	Sales volume (Mil Tonnes)		Average Selling price (A\$/Tonne)	
	2018	2017	2018	2017
Domestics sales	8.54	8.16	81.72	75.01
Export sales	5.48	5.20	126.54	103.57
Total	14.02	13.36	105.33	86.13

Average domestic selling price per tonne was A\$ 81.72, increased by A\$6.71 as a result from an increase of sales proportion from high price contracts. For export sales, average selling price per tonne was A\$126.54, increased by A\$22.97 which was from a rising of market coal price.

Power Business

	Power Sales (Mil \$)		Steam & Others (Mil \$)	
	2018	2017	2018	2017
CHP (Combined Heat & Power) Plants	84.78	84.62	89.26	85.13
Solar Power Plants	22.14	19.47	-	-
Total	106.92	104.09	89.26	85.13

Power, steam and others sales of 3 CHP plants in China were \$174.04 million, increased by \$4.29 million compared to last year. An increase was an impact from an appreciation of THB currency against USD currency during this period, it impacted higher of revenue in terms of USD currency when converted from revenue in THB currency. Average exchange rate of USD/THB of 2018 was THB 32.31 (2017: THB 33.94). Whereas a decrease of power sales volume 5.25 GWh and a decrease of sales price, average power tariff was RMB 0.37 per kWh (2017: RMB 0.38 per kWh). Net with an increase of steam sales and others, that was net result of a decrease in steam sales volume of 0.31 million tonne with an increase in average steam price by RMB 2.35 per tonne or 3%. Average steam price per tonne was RMB 89.97 (2017: RMB 87.62). The higher price was the effects from a higher price of coal ,a main fuel source of CHP plants and also earning subsidy from government according to comply with an ultra-low emission under environmental regulations.

An increase of sales from solar power plants in China was mainly from an increase of sales volume of 11.99 GWh and an increase of average power tariff by 0.09 compared to prior year. Average power tariff per KWh was RMB 0.35 (2017: RMB 0.29). This year solar power plants in china has operated in full capacity as a whole year, including a new project started during the last quarter. Offset with foreign exchange rate impact as above explanation under topic of CHP plants in China

2.2 Cost of sales \$2,253 million, increased by \$486 million or 28% which was from higher cost of sales in coal business, gas business and others of \$324 million, \$52 million and \$110 million, respectively.

Cost of sales (Unit: Million \$)	2018	2017
Coal business	1,905	1,581
Power & Steam business	155	144
Gas	76	24
Others	117	18
Total	2,253	1,767

Coal business' cost of sales increased by \$324 million that was from an increase of sale volume and average cost per tonne compared to previous year. Indonesia mines' average cost per tonne increased by \$3.41. Such average cost per tonne includes cost of purchased coal from other sources for coal blending to match with customers demand. In this period, those purchased coal volume was higher than last year, together with a higher of global coal market price, these affected an increase of average cost per tonne by \$1.98. In addition, cost of production per ton also increased by \$2.14 as a result from a rising of global market of oil price during the period. Average diesel price per liter was \$0.65 (2017: \$0.53).

Australia mines' average cost per tonne increased compared to prior year. Such average cost per tonne also includes cost of purchased coal from other sources for coal blending to match with customers demand. In this period, those purchased coal volume was higher than last year, together with a higher of global coal market price. These affected an increase of average cost per tonne by A\$11.09 and also an increase of own production cost by A\$9.06 per ton due to less production volume compared to prior year because of difficulty geology mining conditions.

- 2.3 Gross profit reported \$1,228 million, an increase of \$118 million or 11%. Gross profit margin was 35% derived from 37% of coal business and 21% of power business (2017: Gross profit was 39%, derived from 40% of coal business and 24% of power business). A rising of market coal price was unfavorable to cost of coal fired power business, then it affected to a decrease of power business's gross profit compared to the same period of last year.
- 2.4 Selling expenses reported \$182 million, an increase of \$22 million or 14% was from Indonesia mine of \$36 million that represented expenses relating to Domestic Market Obligation which has been effective since the beginning of 2018 by \$23 million and an increase of relating selling expenses according to an increase of export coal sales of Indonesia mines of \$13 million. Whereas, a decrease of selling expense from Australia mines of \$15 million due to lower proportion of export own coal sales compared to 2017.
- 2.5 Administrative expenses reported at \$237 million, an increase of \$19 million or 9% was from cost of employee of \$8 million to support business expansion and from professional fees of \$11 million for new investment opportunities and innovation of energy technologies.

2.6 Indemnity payment of \$86 million was a litigation claim compensation that the 3 Defendants has to equally pay the Plaintiffs the sum of THB 1,500 million plus interest at the rate of 7.50% per annum, totaling of THB 2,702 million according to the Supreme Court judgement on 6 March 2018. The Group has fully paid those claims to the Plaintiffs on 9 March 2018.

2.7 Royalty fees reported at \$291 million, an increase of \$23 million or 9% was a result of a higher of coal selling price.

2.8 Share of profit from joint ventures and associates reported at \$264 million consisted of profit sharing from BLCP, Hongsa power plant and Phufai mining in Laos, coal business in China of \$42 million, \$106 million and \$118 million, respectively, and loss sharing from others of \$2 million.

Share of profit from joint ventures and associates increased by \$59 million or 29% compared to the prior year, was net impact of an increase of share of profit from coal business in China of \$23 million, Hongsa power plant and Phufai mining in Laos of \$40 million, whereas a decrease of profit sharing from BLCP of \$1 million based on a decrease of revenue structure according to a power purchase agreement, together with an impact from an appreciation of THB currency against USD currency and from loss sharing from others of \$3 million.

2.9 Other expenses of \$17 million was comprised of;

2.9.1 Interest income of \$8 million.

2.9.2 Net loss from financial derivatives of \$63 million comprised of:

- Unrealized loss from financial derivatives at the end of period of \$9 million was loss from coal swap contracts \$12 million and cross currency swap contracts of \$4 million, while gain on natural gas hedging contracts of \$2 million and gain on foreign exchange rate forward contracts of \$5 million.
- Realized loss from financial derivatives of \$54 million was loss from coal swap contracts and oil hedging contract of \$40 million, interest rate swap contracts of \$3 million, foreign exchange rate forward contracts of \$12 million and natural gas hedging contracts of \$5 million, while gain on cross currency swap contracts of \$6 million.

2.9.3 Loss on foreign exchange rate of \$19 million was mainly from unrealized loss on foreign exchange rate translation on THB currency borrowings as a result of an appreciation of THB currency against USD currency compared to last year. Average exchange rate of USD/THB as of 31 Dec 2018 was THB 32.45 (31 Dec 2017: THB 32.68).

2.9.4 Management fees and other income of \$57 million.

2.10 Corporate income tax of \$189 million, increased by \$55 million mainly was from

2.10.1 An increase of corporate income tax of \$8 million from better operating profits compared to prior year.

2.10.2 An increase of withholding tax of \$4 million was from withholding tax of dividend receives of \$10 million, offset with a decrease of repayment of interest expense of subsidiaries of \$6 million.

2.10.3 An increase of defer tax expense of \$43 million was from a decrease of defer tax assets of \$ 37 million arising from utilization of accumulated taxable loss during the year and a decrease of defer tax liability of \$ 6 million arising from timing difference between tax and accounting basis.

2.11 Net profit for the year ended 31 December 2018 reported \$205 million, a decrease of \$28 million compared to last year.

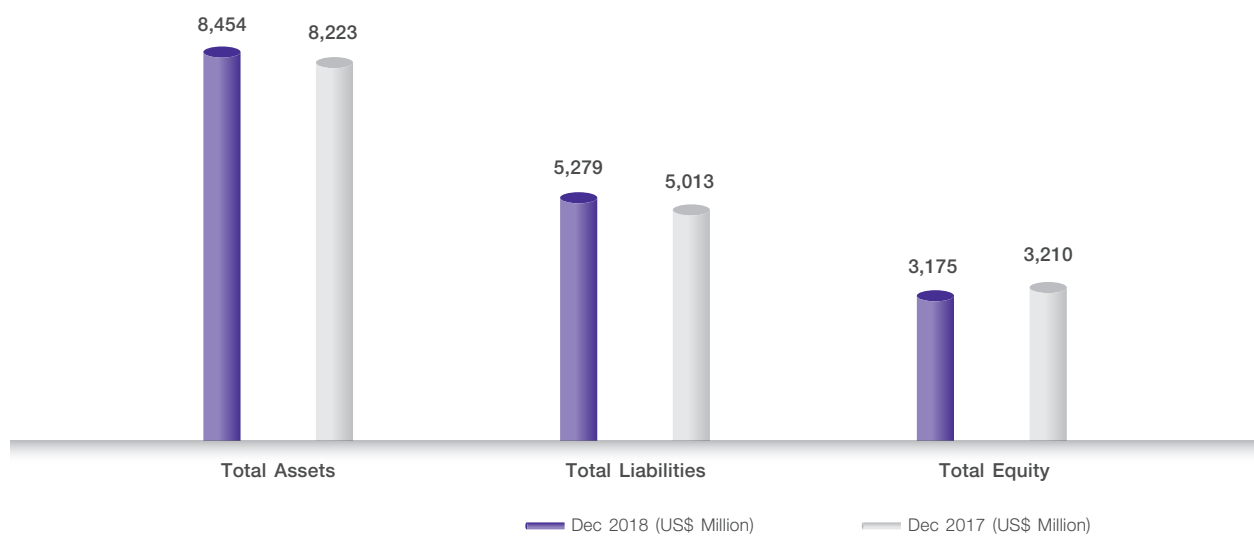
Earnings per share (EPS) reported at \$0.040 per share, equivalent THB 1.297 per share. (2017: \$0.046 per share or equivalent to THB 1.550 per share)

3. Statements of Consolidated Financial Position as of 31 December 2018 in comparison with the Statements of Consolidated Financial Position as of 31 December 2017

3.1 Total assets of \$8,454 million, an increase of \$231 million compared to total assets as of 31 December 2017 with main details described below:

- Cash and cash equivalents of \$607 million, a decrease of \$76 million or 11% (See explanation in # 4 Consolidated Statement of Cash Flow)
- Current and non-current portions of dividend receivable from related parties of \$10 million and \$210 million, respectively were dividend receivable from a joint venture who operates power business in Thailand. A decrease of \$20 million was a net result from additional declared dividend and received dividend during the period of \$126 million and \$148 million, respectively and unrealized gain on foreign exchange rate translation at the end of the period of \$2 million.
- Investment in joint venture and associates of \$1,374 million, increased by \$204 million or 18% from addition of investments in power business in China, Indonesia, Singapore and Japan of \$78 million, profit sharing recognized net with dividend received by \$143 million and unrealized loss on foreign exchange rate translation at end of period by \$17 million, mainly impacted from depreciation of RMB currency.
- Other investments of \$148 million, an increase of \$36 million was from an additional investment in solar power business in Japan under a form of TK (TOKUMEI KUMIAI) agreement.
- Property plant and equipment of \$1,859 million, an increase of \$81 million was from machine and equipment purchased of subsidiaries in Indonesia and Australia of \$264 million, business acquisition of gas business in USA and solar power plant in China of \$142 million, depreciation charges for the period of \$212 million and unrealized loss on foreign exchange rate translation at end of period & others of \$113 million.
- Other non-current assets of \$220 million, a decrease of \$86 million was from a decrease of prepaid tax of subsidiaries in Indonesia of \$115 million that was reclassified to be current assets during the period. Offset with an increase of restricted cash of \$8 million. Also an increase in accrued subsidy income of solar power plant in China of \$14 million and others of \$7 million.

Financial Position



3.2 Total liabilities of \$5,279 million, increased by \$266 million compared to total liabilities as of 31 December 2017 with main details described below:

- Short-term loans from financial institutions of \$512 million, an increase of \$93 million was from additional loan of \$872 million, repayment of \$778 million (includes realized gain on foreign exchange rate of \$3 million) and unrealized gain on foreign exchange rate translation at the end of period of \$1 million.
- Current portions of long-term loans of \$370 million, an increase of 216 million or 141% was the net result of reclassification from non-current portion of \$376 million and repayment of \$159 million and unrealized gain on foreign exchange rate translation at the end of period of \$1 million, mainly from current portions of long-term loans in RMB currency.
- Current portions of debenture of \$88 million, a decrease of \$80 million was from bond redemption of \$178 million, reclassification from non-current portion of \$88 million and unrealized loss on foreign exchange rate of \$10 million.
- Accrued overburden and coal transportation expenses of \$143 million, an increase of \$40 million or 39% was mainly from mining operations of subsidiaries in Indonesia.
- Long-term loans of \$1,655 million, a decrease of \$36 million or 2% was net result of additional loan of \$498 million, reclassification to current portion of \$376 million, early repayment of \$127 million and unrealized gain on foreign exchange translation at the end of period of \$31 million. Mainly was from AUD currency loan as a result of depreciation of AUD currency against USD currency. Average exchange rate of AUD/USD as of 31 Dec 2018 was 0.7039 (31 Dec 2017: 0.7796).
- Debenture of \$1,397 million, a decrease of \$28 million or 2% was from issuance of debenture of \$50 million, reclassification to current portion of \$88 million and unrealized loss on foreign exchange translation at the end of period of \$10 million.

- Current portion and non-current portion of derivative liabilities of \$5 million and \$18 million, respectively, totaling of \$23 million represented unrealized loss from changes in fair value of financial derivatives at the end of period. They consisted of cross currency swap contracts of \$ 13 million, interest rate swap contracts of \$6 million, foreign exchange rate forward contracts of \$2 million, coal swap contracts of \$2 million and natural gas options contracts of \$0.4 million.

3.3 Shareholders' equity of \$3,175 million, a decrease of \$35 million was mainly due to;

- An increase of \$205 million from net profit of 2018.
- An increase of \$107 million from non-controlling interests.
- A decrease of \$140 million from loss on foreign exchange rate translation of subsidiaries' financial statements and others.
- A decrease of \$207 million from dividend payment.

3.4 Net debt-to-equity as of 31 December 2018 reported at 1.07 times for the consolidated financial statements (31 December 2017: 0.99 times).

4. Statements of Consolidated Cash Flows for year ended 31 December 2018.

Banpu's statement of consolidated cash flow for the year ended 31 December 2018 recorded a decrease of net cash flow by \$76 million (including the effect from loss on exchange rate translation of \$9 million). The consolidated cash flows are divided into:

4.1 Net cash inflow from operation of \$411 million; with major operating items as follows;

- Collections from coal sales of \$3,401 million
- Payments to contractors and suppliers of \$2,170 million
- Interest payments of \$175 million
- Payments of corporate income tax of \$135 million
- Receiving from tax reclamation \$51 million
- Royalty fee payment of \$298 million
- Other payments of \$263 million

4.2 Net cash outflow from investing activities of \$453 million; with major items as follows;

- Payment for machines, equipment and project in progress of \$273 million
- Payment for new other investment of \$33 million
- Payments for investment in Gas business in USA, Clean energy business in Singapore, solar power business in Japan and a joint venture in China totaling of \$177 million
- Payment for deferred charge of mine exploration, mine development and overburden of \$131 million
- Receiving from short-term investment of \$1 million
- Dividend received from joint ventures of \$149 million
- Other payments of \$11 million

4.3 Net cash inflow from financing of \$25 million; comprised of

- Receipts from short term and long term from financial institutions and others of \$1,370 million.
- Repayments of short term and long term loans from financial institutions and others of \$1,062 million.
- Receipts from debenture of \$50 million.
- Redemption of debentures of \$178 million.
- Receipts from an increase of a subsidiary's share capital from warrants exercised interest \$ 2 million.
- Dividend payment of \$207 million.

5. Management Discussion and Analysis

The consolidated financial statement for 2018 indicates robust performance in coal, gas, and power generation business. Group EBITDA for 2018 was USD 1,178 million or 22% higher than the previous year, comprising of EBITDA from coal USD 895 million, EBITDA from gas USD 101 million and EBITDA from power USD 182 million.-

The consolidated net profit was concluded at USD 205 million which is 12% lower from last year. The net profit was impacted by the strengthening of Thai Baht against US Dollar, causing a translation loss of USD 19 million. A financial derivatives loss was recorded at USD 63 million, mostly due to coal hedging loss from strong increase in coal prices during the year. The company also recorded USD 86 million as compensation to the Hongsa court case.

In 4Q18 the group EBITDA was USD 351 million, increasing 13% QoQ. Net profit was USD 45.30 million or 40% lower QoQ.

In 4Q18 Indonesia coal achieved the highest coal sale of the year at 7.61 million tonnes, higher 14% QoQ, with an average selling price (ASP) of USD 77 per tonne which declined 13% QoQ due to easing coal market prices. The cost of sale slightly increased 8% to USD 47.98 per tonne with diesel price unchanged at USD 0.67 per litre. Gross profit margin was slimmer at 39% versus 47% in previous quarter.

Australia coal sale volume in 4Q18 was 3.76 million tonnes, improving 13% QoQ. The ASP remained firm at AUD 105.36 per tonne while cost of sale declined 6% QoQ to AUD 75.91 per tonne, reflecting improvement in production efficiency. Gross profit margin was 28% compared to 20% in previous quarter.

China coal reported a strong equity income of USD 24 million supported by favorable coal prices as the country approaching winter season.

In power business, the Combined Heat and Power (CHP) plants in China contributed a net profit of USD 2.44 million in 4Q18 due to high seasonal demand for both power and steam products while power plants still facing high coal cost. BLCP successfully completed the Extended Major Overhaul for Unit 2 earlier than plan. It reported an equity loss of USD 1.35 million. Hongsa achieved a strong level of plant utilization allowing it to dispatch additional electricity. It reported an equity income of USD 19 million.

Please be informed accordingly,
Sincerely yours,



Somruedee Chaimongkol
Chief Executive Officer

Ms. Arisara Sakoongaravek
Tel. 0 2694 6614

INDEPENDENT AUDITOR'S REPORT

To the shareholders of Banpu Public Company Limited

My opinion

In my opinion, the consolidated financial statements of Banpu Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial statements of the Company present fairly, in all material respects, the consolidated and separate financial position of the Group and of the Company as at 31 December 2018, and its consolidated and separate financial performance and its consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

What I have audited

The consolidated financial statements and the separate financial statements comprise:

- the consolidated and separate statements of financial position as at 31 December 2018;
- the consolidated and separate statements of comprehensive income for the year then ended;
- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
- the notes to the consolidated and separate financial statements, which include a summary of significant accounting policies.

Basis for opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs). My responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated and separate financial statements section of my report. I am independent of the Group and the Company in accordance with the Federation of Accounting Professions under the Royal Patronage of his Majesty the King's Code of Ethics for Professional Accountants together with the ethical requirements that are relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key audit matters

Key audit matters are those matters that, in my professional judgment, were of most significance in my audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Key audit matters	How my audit addressed the key audit matters
Impairment assessments of goodwill	
<p>Refer to Note 18 Goodwill, as at 31 December 2018, the Group has goodwill of US Dollar 524.12 million which represents 6 % of the total consolidated assets. Goodwill arose from the acquisitions of mining and electricity generation businesses in other countries. Goodwill of US Dollar 466.93 million arose from the acquisition of coal mining business in Australia and the remaining US Dollar 57.19 million arose from the acquisitions of coal mining business in the Republic of Indonesia and Mongolia and electricity generating business in the People's Republic of China. No impairment charge was recognised by management against these balances in the 2018 financial year.</p>	<p>The audit procedures of this matter were performed by the component auditor in Australia. I understood and evaluated the work of the component auditor to obtain sufficient and appropriate audit evidences for the impairment testing of goodwill arising from the acquisition of coal mining business in Australia. I also satisfied myself as to the appropriateness of management's identification of the Group's CGUs and the continued satisfactory operation of the Group's controls over the impairment assessment process.</p> <p>The component auditor carried out the following to review management's assessment of impairment testing of goodwill.</p>
<p>Management tests impairment of goodwill annually. The impairment test is performed at level of cash generating unit (CGU) and calculated its recoverable amount by applying the value-in-use model which involves the management's significant judgements in respect to the future operating results of business, projected cash flows and the discount rate to be applied to the projected cash flows. Key assumptions applied in the value-in-use model are trend of global coal prices, estimated reserves, production plan, cost profiles, growth rate and discount rate applied to the cash flow forecasts.</p>	<ul style="list-style-type: none"> • Held discussions with the management to understand the basis for the assumptions used and assessed whether the impairment testing process and assumptions had been applied consistently across the Group. • Challenged management's significant assumptions used in impairment testing for goodwill, specifically the global coal price, foreign exchange, production plan, operating costs and discount rate. The procedures included comparing the key assumptions to the external sources for trend of global coal price and foreign exchange rate forecasts and to the approved business and mine plan. • Assessed the reasonableness of business plan and mine plan by comparing the plans of 2018 with actual results. • Assessed the discount rate taking into account the independently obtained data from available public information of companies in the industry, to see whether the discount rate used by management was within an acceptable range.
<p>I focused on the valuation of goodwill arising from the acquisition of coal mining business in Australia due to the significant value and the fact that the determination of value-in-use depends on a number of assumptions. Those assumptions involve significant judgement made by the management in assessing the possibility of future business plans.</p>	

Key audit matters	How my audit addressed the key audit matters
Impairment assessments of goodwill	
	<ul style="list-style-type: none"> Tested sensitivity analysis over key assumptions in the model prepared by the management in order to assess factors to be sensitive to assumptions and potential impact of a range possible outcomes. <p>As a result of the procedures performed, the key assumptions used by the management are within the reasonable range and none of the items noted above resulted in a change to the impairment testing by the management.</p>

Key audit matters	How my audit addressed the key audit matters
Uncertain tax position and recoverability of prepaid taxes	
<p>As at 31 December 2018, an Indonesian subsidiary of the Group (PT. Indo Tambangraya Megah Tbk. (ITM)) and its subsidiaries have outstanding prepaid taxes of US Dollar 44.8 million related to results of tax investigations which consisted of various corporate income taxes, withholding taxes, and value added taxes from fiscal year 2009 to 2015 as described in Note 34.5 - Litigation c). Recoverability of these prepaid taxes are subject to decisions by the respective tax authorities (i.e. Directorate General of Tax (DGT), Tax Court or Supreme Court depending on the stage of tax dispute resolution of each tax case).</p> <p>I focused on the area of outstanding prepaid taxes given the related subjectivity and the uncertainty in the outcomes from the respective tax authorities and/or the Tax Court.</p>	<p>The audit procedures of this matter were performed by a component auditor in the Republic of Indonesia. I understood and evaluated the work of the component auditor to obtain appropriate and sufficient audit evidences in respect of tax position and recoverability of prepaid taxes.</p> <p>The component auditor carried out the following procedures for their assessment of the prepayment of corporate income tax, withholding taxes, value added taxes amounting to US Dollar 44.8 million:</p> <ul style="list-style-type: none"> Discussed the status of each tax dispute with management and a tax specialist of the component auditor in the Republic of Indonesia, including the assessment of uncertain tax provision and the consistency of management responses in tax objections and tax appeals. Checked refunds received against the balance of prepaid taxes if there was a tax refund resulting from a favourable decision by the tax authorities.

Key audit matters	How my audit addressed the key audit matters
Uncertain tax position and recoverability of prepaid taxes	
	<ul style="list-style-type: none"> • Checked the prepaid taxes write-off if there was an unfavourable decision by the tax authorities and management accepted the decision. <p>As a result of the procedures performed, I note that the recoverability of prepaid taxes have been considered based on the information currently available to the Group.</p>

Key audit matters	How my audit addressed the key audit matters
Acquisition of interest in a joint operation	
<p>As detailed in Note 35.1 - Acquisition of interest in natural gas business, the Group acquired an interest in natural gas business with a total purchase consideration of US Dollar 99.23 million during the year ended 31 December 2018. Management determined that the acquisition of this interest is an interest in joint operation by applying the definition in TFRS 11 "Joint arrangement" and the acquired joint operation constitutes businesses, as defined in TFRS 3 "Business combination". Therefore, the management is required to apply the concepts in TFRS 3 for the purpose of determining fair value of the net identifiable assets acquired and reviewing purchase price allocation (PPA).</p> <p>Management engaged the external valuer to appraise the fair value of net identifiable assets acquired. The fair value of net identifiable assets acquired was US Dollar 129.91 million, mainly comprised gas exploration and producing assets and proved reserve of US Dollar 134.83 million. The fair value of the total assumed liabilities is US Dollar 4.92 million.</p>	<p>The audit procedures of this matter were performed by a component auditor in the United State of America. I understood and evaluated the work performed by the component auditor to obtain sufficient and appropriate audit evidences.</p> <p>The component auditor carried out the following procedures in order to obtain evidence for management's assessment of business combination and determination of fair value of net identifiable assets acquired and liabilities assumed:</p> <ul style="list-style-type: none"> • Read the purchase and sale agreements to understand the key terms and conditions, and confirmed our understanding of the transaction with management. • Reviewed management's assessment that the acquisitions should be accounted as the interest in joint operation that constituted businesses and application of principles on business combination.

Key audit matters	How my audit addressed the key audit matters
Acquisition of interest in a joint operation	
<p>The valuations of total identifiable assets acquired and the total assumed liabilities were performed as a part of the purchase price allocation. This resulted in a bargain purchase of US Dollar 30.68 million.</p> <p>I focused on the identification of the fair values of the gas exploration and producing assets and proved reserve arising from the business combination because the external valuer applied the discounted cash flows that the model involves significant estimation and judgement made by the management to assess the future cash flows and discounted rate applied for the future cash flows.</p>	<ul style="list-style-type: none"> Assessed the appropriateness of the net identifiable assets acquired and the liabilities assumed at the acquisition date and also evaluated management's procedures for determining the fair values of the net identifiable assets acquired. Evaluated the competency, qualifications, experience and objectivity of management's experts. Tested the calculation of fair values of gas exploration and producing assets and proved reserve and also challenged management's significant assumptions used in the estimation of future cash flows, for example estimated gas price, proved reserve, production volume, capital expenditures and operating costs by comparing those assumptions to the underlying agreements and external sources. Assessed the discount rate, taking into account independently obtained data from available public information of companies in the industry. <p>As a result of the procedures performed, I determined that the acquisition of interests in natural gas business is an acquisition of the interests in joint operations in accordance with the definition set out in TFRS 11. The assumptions used in identifying the fair values of natural gas properties arising from the business combination were reasonable and in line with the accounting for the business combination.</p>

Other information

The directors are responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and my auditor's report thereon. The annual report is expected to be made available to me after the date of this auditor's report.

My opinion on the consolidated and separate financial statements does not cover the other information and I will not express any form of assurance conclusion thereon.

In connection with my audit of the consolidated and separate financial statements, my responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

When I read the annual report, if I conclude that there is a material misstatement therein, I am required to communicate the matter to the audit committee.

Responsibilities of the directors for the consolidated and separate financial statements

The directors are responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRSs, and for such internal control as the directors determine is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, the directors are responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

The audit committee assists the directors in discharging their responsibilities for overseeing the Group's and the Company's financial reporting process.

Auditor's responsibilities for the audit of the consolidated and separate financial statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgment and maintain professional scepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with the audit committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide the audit committee with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with the audit committee, I determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters.

I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

PricewaterhouseCoopers ABAS Ltd.



Amornrat Pearmpoonvatanasuk

Certified Public Accountant (Thailand)

No. 4599 Bangkok

21 February 2019

STATEMENT OF FINANCIAL POSITION

As at 31 December 2018

Consolidated financial statements					
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Assets					
Current assets					
Cash and cash equivalents	8	607,344	683,076	19,708,200	22,323,531
Short-term investments		7,887	6,509	255,933	212,707
Trade accounts receivable and notes receivable, net	9	394,731	320,936	12,808,938	10,488,481
Amounts due from related parties	33	205	599	6,667	19,573
Current portion of dividend receivables from a related party	33	10,170	21,859	330,000	714,382
Advances to related parties	33	3	9,466	88	309,343
Inventories, net	10	149,632	129,089	4,855,522	4,218,739
Spare parts and machinery supplies, net		28,196	30,703	914,961	1,003,417
Financial derivative assets due in one year	11	6,599	1,731	214,125	56,576
Short-term loans to related parties	33	87	7	2,828	225
Short-term loans to other companies		2,803	7,887	90,967	257,745
Current portion of deferred exploration and development expenditures and deferred overburden expenditures/stripping costs, net	16	30,796	47,737	999,327	1,560,089
Other current assets	12	155,902	152,220	5,059,012	4,974,702
Total current assets		1,394,355	1,411,819	45,246,568	46,139,510
Non-current assets					
Dividend receivables from a related party	33	209,642	218,256	6,802,860	7,132,810
Long-term loans to related parties	33	17,054	18,412	553,384	601,731
Investments in joint ventures and associates	13	1,374,119	1,170,426	44,589,871	38,250,589
Other investments, net		148,487	112,244	4,818,371	3,668,250
Investment property, net		1,873	1,870	60,774	61,121
Property, plant and equipment, net	14	1,859,390	1,778,733	60,336,838	58,130,601
Deferred income tax assets, net	15	113,499	125,568	3,683,006	4,103,683
Financial derivative assets, net	11	11,125	10,823	360,988	353,715
Deferred exploration and development expenditures and deferred overburden expenditures/stripping costs, net	16	869,257	776,560	28,207,228	25,378,696
Mining property rights, net	17	1,710,766	1,767,883	55,514,011	57,776,009
Goodwill	18	524,120	524,120	17,007,600	17,128,724
Other non-current assets	19	219,906	306,782	7,135,896	10,025,927
Total non-current assets		7,059,238	6,811,677	229,070,827	222,611,856
Total assets		8,453,593	8,223,496	274,317,395	268,751,366

STATEMENT OF FINANCIAL POSITION

As at 31 December 2018

Consolidated financial statements					
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Liabilities and equity					
Current liabilities					
Short-term loans from financial institutions	20	511,873	419,100	16,610,171	13,696,553
Trade accounts payable		115,797	112,762	3,757,579	3,685,175
Accrued interest expenses		27,735	27,354	900,010	893,954
Accrued royalty expenses		11,746	18,950	381,140	619,295
Short-term loans from a related party	33	-	1,249	-	40,815
Accrued overburden and coal transportation costs		143,001	103,201	4,640,351	3,372,701
Accrued income taxes		16,909	38,697	548,691	1,264,667
Accrued employee benefits		69,813	77,772	2,265,411	2,541,672
Financial derivative liabilities due in one year	11	4,587	9,718	148,853	317,583
Current portion of long-term borrowings, net	21	369,681	153,328	11,996,087	5,010,913
Current portion of debentures, net	22	87,818	168,287	2,849,677	5,499,759
Other current liabilities	23	350,120	269,269	11,361,326	8,800,023
Total current liabilities		1,709,080	1,399,687	55,459,296	45,743,110
Non-current liabilities					
Long-term loans from other company		584	647	18,958	21,147
Long-term borrowings, net	21	1,654,831	1,690,518	53,698,935	55,247,643
Debentures, net	22	1,397,130	1,425,607	45,336,586	46,590,116
Deferred income tax liabilities, net	15	272,031	234,349	8,827,341	7,658,735
Employee benefits obligation		45,272	47,113	1,469,074	1,539,691
Deferred unfavourable contract liabilities, net		41,537	59,691	1,347,866	1,950,768
Financial derivative liabilities, net	11	18,443	20,894	598,466	682,844
Other liabilities		140,157	134,269	4,548,063	4,388,044
Total non-current liabilities		3,569,985	3,613,088	115,845,289	118,078,988
Total liabilities		5,279,065	5,012,775	171,304,585	163,822,098

STATEMENT OF FINANCIAL POSITION

As at 31 December 2018

Consolidated financial statements				
Notes	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Liabilities and equity (continued)				
Equity				
Share capital				
Registered share capital				
5,165,257,100 ordinary shares of Baht 1 each	24		5,165,257	5,165,257
Issued and paid-up share capital				
5,161,925,515 ordinary shares of Baht 1 each	24	149,961	5,161,925	5,161,925
Premium on share capital	24	443,624	15,372,438	15,372,438
Share-based payment		1,343	45,416	34,224
Retained earnings				
Appropriated				
- Legal reserve	25	95,976	3,171,520	3,171,520
- Other reserves	26	83,399	2,708,429	2,317,509
Unappropriated		1,942,779	64,294,454	61,556,945
Other components of equity	28	(157,422)	(7,693,722)	(2,299,679)
Equity attributable to owners of the parent		2,559,660	83,060,460	85,314,882
Non-controlling interests	29	614,868	19,952,350	19,614,386
Total equity		3,174,528	103,012,810	104,929,268
Total liabilities and equity		8,453,593	274,317,395	268,751,366

STATEMENT OF FINANCIAL POSITION

As at 31 December 2018

		Separate financial statements			
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Assets					
Current assets					
Cash and cash equivalents	8	28,313	40,814	918,752	1,333,831
Short-term investments		3,082	-	100,000	-
Trade accounts receivable	9	19,020	16,629	617,205	543,440
Amounts due from related parties	33	376,826	317,287	12,227,937	10,369,214
Current portion of dividend receivables from a related party	33	11,639	23,276	377,681	760,672
Advances to related parties	33	442	183	14,327	5,969
Inventories, net	10	7,861	6,288	255,091	205,493
Financial derivative assets due in one year	11	3,775	16	122,488	534
Other current assets	12	3,756	1,614	121,950	52,743
Total current assets		454,714	406,107	14,755,431	13,271,896
Non-current assets					
Dividend receivables from a related party	33	41,826	155,169	1,357,259	5,071,063
Long-term loans to related parties	33	2,551,384	2,372,966	82,791,909	77,550,679
Investments in subsidiaries	13	1,384,250	1,384,389	44,918,640	45,243,088
Other investments		8,743	14,002	283,706	457,613
Investment property, net		1,020	1,020	33,112	33,347
Property, plant and equipment, net	14	6,098	5,636	197,870	184,229
Financial derivative assets, net	11	10,601	10,545	344,001	344,606
Deferred income tax asset, net	15	23,978	33,499	778,066	1,094,776
Other non-current assets	19	3,143	4,315	102,005	141,000
Total non-current assets		4,031,043	3,981,541	130,806,568	130,120,401
Total assets		4,485,757	4,387,648	145,561,999	143,392,297

STATEMENT OF FINANCIAL POSITION

As at 31 December 2018

		Separate financial statements			
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Liabilities and equity					
Current liabilities					
Short-term loans from financial institutions	20	466,554	348,000	15,139,599	11,372,953
Trade accounts payable to subsidiaries	33	3,937	3,821	127,769	124,887
Advances from and amounts due to related parties	33	2,074	1,756	67,303	57,372
Short-term loan from a related party	33	-	4,284	-	140,000
Accrued interest expenses		25,584	26,080	830,193	852,308
Financial derivative liabilities due in one year, net	11	182	8,599	5,922	281,033
Current portion of long-term borrowings, net	21	235,992	136,787	7,657,887	4,470,308
Current portion of debentures, net	22	87,818	168,287	2,849,677	5,499,759
Other current liabilities	23	16,416	7,101	532,708	232,091
Total current liabilities		838,557	704,715	27,211,058	23,030,711
Non-current liabilities					
Long-term borrowings, net	21	1,015,418	963,268	32,950,113	31,480,476
Debentures, net	22	1,397,130	1,425,607	45,336,586	46,590,116
Employee benefits obligation		8,877	7,841	288,071	256,242
Financial derivative liabilities, net	11	17,352	20,894	563,065	682,844
Other liabilities		110	190	3,578	6,209
Total non-current liabilities		2,438,887	2,417,800	79,141,413	79,015,887
Total liabilities		3,277,444	3,122,515	106,352,471	102,046,598

STATEMENT OF FINANCIAL POSITION

As at 31 December 2018

		Separate financial statements			
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Liabilities and equity (continued)					
Equity					
Share capital					
Registered share capital					
5,165,257,100 ordinary shares of					
Baht 1 each					
	24			5,165,257	5,165,257
Issued and paid-up share capital					
5,161,925,515 ordinary shares of					
Baht 1 each					
	24	149,961	149,961	5,161,925	5,161,925
Premium on share capital	24	443,624	443,624	15,372,438	15,372,438
Retained earnings					
Appropriated					
- Legal reserve					
	25	14,996	14,996	516,193	516,193
Unappropriated					
		578,115	638,999	18,215,843	20,136,050
Other components of equity	28	21,617	17,553	(56,871)	159,093
Total equity		1,208,313	1,265,133	39,209,528	41,345,699
Total liabilities and equity		4,485,757	4,387,648	145,561,999	143,392,297

STATEMENT OF COMPREHENSIVE INCOME

For the year ended 31 December 2018

Consolidated financial statements					
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Sales and service income		3,481,442	2,876,638	112,770,519	97,323,759
Cost of sales and services		(2,252,967)	(1,766,415)	(72,960,877)	(59,792,362)
Gross profit		1,228,475	1,110,223	39,809,642	37,531,397
Dividend income from other investments		999	936	32,392	31,790
Management fee and other income		55,246	38,900	1,772,783	1,311,360
Interest income		8,322	5,728	269,762	194,188
Selling expenses		(181,614)	(160,471)	(5,879,677)	(5,435,569)
Administrative expenses		(237,222)	(218,084)	(7,679,623)	(7,357,188)
Indemnity payment	34.5 a)	(86,049)	-	(2,714,079)	-
Royalty fee		(290,940)	(268,282)	(9,429,609)	(9,076,513)
Net losses from financial derivatives		(62,587)	(20,970)	(2,051,687)	(705,811)
Net losses on exchange rate		(18,980)	(75,831)	(617,505)	(2,576,035)
Interest expenses		(170,311)	(135,337)	(5,505,827)	(4,586,382)
Other finance costs		(4,977)	(4,630)	(160,500)	(157,265)
Share of profit from joint ventures and associates	13	263,662	204,663	8,499,974	6,965,711
Profit before income taxes		504,024	476,845	16,346,046	16,139,683
Income taxes	15	(189,141)	(133,635)	(6,109,965)	(4,523,547)
Profit for the year		314,883	343,210	10,236,081	11,616,136

STATEMENT OF COMPREHENSIVE INCOME

For the year ended 31 December 2018

Consolidated financial statements				
Notes	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Other comprehensive income (expense), net of taxes:				
Items that will not be reclassified to profit or loss				
- Remeasurements of post-employment benefit obligations	2,397	(1,466)	80,585	(14,040)
- Share of other comprehensive expense from a joint venture and associates for using the equity method	(2)	(24)	-	-
- Translation differences	-	-	(343,809)	(3,854,651)
Total items that will not be reclassified to profit or loss, net of taxes	2,395	(1,490)	(263,224)	(3,868,691)
Items that will be reclassified subsequently to profit or loss				
- Gains (losses) on remeasuring available-for-sale investments	(1,934)	4,333	(62,271)	162,660
- Gains (losses) on cash flow hedge reserve	(10,246)	25,408	(330,100)	942,960
- Share of other comprehensive income (expenses) from joint ventures and associates for using the equity method	(11,612)	112,297	(598,307)	632,685
- Translation differences	(125,432)	113,723	(4,339,700)	1,551,178
Total items that will be reclassified subsequently to profit or loss, net of taxes	(149,224)	255,761	(5,330,378)	3,289,483
Other comprehensive income (expense) for the year, net of taxes	(146,829)	254,271	(5,593,602)	(579,208)
Total comprehensive income for the year	168,054	597,481	4,642,479	11,036,928

STATEMENT OF COMPREHENSIVE INCOME

For the year ended 31 December 2018

Consolidated financial statements					
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Attributable to:					
Owners of the parent		205,475	233,577	6,693,731	7,900,243
Non-controlling interests		109,408	109,633	3,542,350	3,715,893
		314,883	343,210	10,236,081	11,616,136
Total comprehensive income attributable to:					
Owners of the parent		61,168	459,036	1,344,866	8,107,214
Non-controlling interests		106,886	138,445	3,297,613	2,929,714
		168,054	597,481	4,642,479	11,036,928
		US Dollar		Baht	
	Note	2018	2017	2018	2017
Earnings per share					
Basic earnings per share	31	0.040	0.046	1.297	1.550
Diluted earnings per share	31	0.040	0.045	1.297	1.535

STATEMENT OF COMPREHENSIVE INCOME

For the year ended 31 December 2018

Separate financial statements					
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Sales		62,140	97,733	2,014,055	3,312,403
Cost of sales		(52,527)	(82,176)	(1,702,810)	(2,783,207)
Gross profit		9,613	15,557	311,245	529,196
Dividend income from subsidiaries		145,775	96,795	4,724,903	3,221,943
Dividend income from other investments		248	174	7,903	5,978
Management fee and other income		42,227	35,767	1,368,291	1,209,600
Interest income		103,468	78,036	3,344,880	2,644,494
Selling expenses		(2,551)	(2,160)	(82,466)	(73,265)
Administrative expenses		(62,790)	(44,458)	(2,036,394)	(1,502,594)
Indemnity payment	34.5 a)	(28,620)	-	(902,711)	-
Net gains (losses) from financial derivatives		(2,326)	4,902	(80,390)	163,754
Net losses on exchange rate		(8,879)	(25,131)	(285,539)	(845,659)
Interest expenses		(133,634)	(103,737)	(4,319,819)	(3,514,560)
Other finance costs		(2,185)	(2,470)	(70,722)	(83,657)
Profit before income taxes		60,346	53,275	1,979,181	1,755,230
Income taxes	15	(8,263)	24,822	(270,263)	850,013
Profit for the year		52,083	78,097	1,708,918	2,605,243
Other comprehensive income (expense), net of taxes:					
Items that will not be reclassified to profit or loss					
- Remeasurements of post-employment benefit obligations		(484)	30	(15,818)	-
- Translation differences		-	-	(343,809)	(3,854,651)

STATEMENT OF COMPREHENSIVE INCOME

For the year ended 31 December 2018

Separate financial statements					
	US Dollar'000		Baht'000		
Notes	2018	2017	2018	2017	
Total items that will not be reclassified to profit or loss, net of taxes	(484)	30	(359,627)	(3,854,651)	
Items that will be reclassified subsequently to profit or loss					
- Gains (losses) on remeasuring available-for-sale investments	(1,755)	3,495	(57,799)	113,543	
- Gains (losses) on cash flow hedge reserve	5,819	(243)	185,644	(52,315)	
Total items that will be reclassified subsequently to profit or loss, net of taxes	4,064	3,252	127,845	61,228	
Other comprehensive income (expense) for the year, net of taxes	3,580	3,282	(231,782)	(3,793,423)	
Total comprehensive income (expense) for the year	55,663	81,379	1,477,136	(1,188,180)	
	US Dollar		Baht		
Note	2018	2017	2018	2017	
Earnings per share					
Basic earnings per share	31	0.010	0.015	0.331	0.511
Diluted earnings per share	31	0.010	0.015	0.331	0.506

STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2018

Attributable to owners of the parent														Consolidated financial statements US Dollar'000	
Notes	Issued and paid-up share capital	Premium on share capital	Share-based payment	Retained earnings			Other components of equity					Non-controlling interests	Total equity		
				Legal reserve	Other reserves	Unappropriated	Other comprehensive income (expense)								
							Fair value reserve of available-for-sale investments	Cash flow hedge reserve	Translation differences	Surplus on dilution of investments in subsidiaries					
											Total other components of equity				
Opening balance as at 1 January 2018															
	149,961	443,624	996	95,976	71,081	1,860,685	(2,340)	(13,378)	(308,360)	312,296	(11,782)	600,180	3,210,721		
26	-	-	-	-	12,318	(12,318)	-	-	-	-	-	-	-		
27	-	-	347	-	-	-	-	-	-	-	-	57	404		
29	-	-	-	-	-	-	-	-	-	87	87	1,936	2,023		
32	-	-	-	-	-	(112,483)	-	-	-	-	-	-	(112,483)		
29	-	-	-	-	-	-	-	-	-	-	-	(94,191)	(94,191)		
Total comprehensive income (expense) for the year															
	-	-	-	-	-	206,895	(1,934)	(5,851)	(137,942)	-	(145,727)	106,886	168,054		
Closing balance as at 31 December 2018															
	149,961	443,624	1,343	95,976	83,399	1,942,779	(4,274)	(19,229)	(446,302)	312,383	(157,422)	614,868	3,174,528		
Opening balance as at 1 January 2017															
Changes in issued and paid-up share capital															
24	6,465	25,686	-	-	-	-	-	-	-	-	-	-	32,151		
25	-	-	-	2,411	-	(2,411)	-	-	-	-	-	-	-		
26	-	-	-	-	34,974	(34,974)	-	-	-	-	-	-	-		
27	-	-	840	-	-	-	-	-	-	-	-	144	984		
Changes in shareholding interests of subsidiaries															
29	-	-	-	-	-	-	-	-	-	-	-	1,837	1,837		
32	-	-	-	-	-	(82,810)	-	-	-	-	-	-	(82,810)		
29	-	-	-	-	-	-	-	-	-	-	-	(76,866)	(76,866)		
Total comprehensive income (expense) for the year															
	-	-	-	-	-	232,570	4,333	29,193	192,940	-	226,466	138,445	597,481		
Closing balance as at 31 December 2017															
	149,961	443,624	996	95,976	71,081	1,860,685	(2,340)	(13,378)	(308,360)	312,296	(11,782)	600,180	3,210,721		

STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2018

Attributable to owners of the parent														Consolidated financial statements Baht'000			
Notes	Issued and paid-up share capital	Premium on share capital	Share-based payment	Retained earnings			Other components of equity				Non-controlling interests	Total equity					
				Legal reserve	Other reserves	Unappropriated	Fair value reserve of available-for-sale investments	Cash flow hedge reserve	Translation differences	Surplus on dilution of investments in subsidiaries			Total other components of equity				
Opening balance as at 1 January 2018																	
	5,161,925	15,372,438	34,224	3,171,520	2,317,509	61,556,945	(76,399)	(437,212)	(13,124,515)	11,338,447	(2,299,679)	19,614,386	104,929,268				
26	-	-	-	-	390,920	(390,920)	-	-	-	-	-	-	-				
27	-	-	11,192	-	-	-	-	-	-	-	-	1,807	12,999				
29	-	-	-	-	-	-	-	-	-	2,827	2,827	63,111	65,938				
32	-	-	-	-	-	(3,613,307)	-	-	-	-	-	-	(3,613,307)				
29	-	-	-	-	-	-	-	-	-	-	-	(3,024,567)	(3,024,567)				
Total comprehensive income (expense) for the year														-	(5,396,870)	3,297,613	4,642,479
Closing balance as at 31 December 2018																	
	5,161,925	15,372,438	45,416	3,171,520	2,708,429	64,294,454	(138,670)	(623,968)	(18,272,358)	11,341,274	(7,693,722)	19,952,350	103,012,810				
Opening balance as at 1 January 2017																	
Changes in issued and paid-up share capital																	
24	224,755	892,944	-	-	-	-	-	-	-	-	-	-	1,117,699				
25	-	-	-	89,411	-	(89,411)	-	-	-	-	-	-	-				
26	-	-	-	-	1,170,226	(1,170,226)	-	-	-	-	-	-	-				
Warrant issuance of a subsidiary																	
27	-	-	28,623	-	-	-	-	-	-	-	-	4,719	33,342				
Changes in shareholding interests of subsidiaries																	
29	-	-	-	-	-	-	-	-	-	-	-	62,379	62,379				
32	-	-	-	-	-	(2,813,656)	-	-	-	-	-	-	(2,813,656)				
29	-	-	-	-	-	-	-	-	-	-	-	(2,609,879)	(2,609,879)				
Total comprehensive income (expense) for the year														-	216,663	2,929,714	11,036,928
Closing balance as at 31 December 2017																	
	5,161,925	15,372,438	34,224	3,171,520	2,317,509	61,556,945	(76,399)	(437,212)	(13,124,515)	11,338,447	(2,299,679)	19,614,386	104,929,268				

STATEMENT OF CHANGES IN EQUITY-

For the year ended 31 December 2018

Separate financial statements US Dollar'000								
Notes	Issued and paid-up share capital	Premium on share capital	Retained earnings		Other components of equity			Total equity
					Other comprehensive income (expense)		Total other components of equity	
			Legal reserve	Unappropriated	Fair value reserve of available-for-sale investments	Cash flow hedge reserve		
			32	149,961	443,624	14,996	638,999	
	-	-	-	(112,483)	-	-	(112,483)	
	-	-	-	51,599	(1,755)	5,819	55,663	
Opening balance as at 1 January 2018								
	149,961	443,624	14,996	578,115	1,955	19,662	1,208,313	
Closing balance as at 31 December 2018								
Opening balance as at 1 January 2017								
	143,496	417,938	12,585	646,093	215	14,086	1,234,413	
24	6,465	25,686	-	-	-	-	32,151	
	-	-	2,411	(2,411)	-	-	-	
25	-	-	-	(82,810)	-	-	(82,810)	
32	-	-	-	78,127	3,495	(243)	81,379	
Closing balance as at 31 December 2017								
	149,961	443,624	14,996	638,999	3,710	13,843	1,265,133	

STATEMENT OF CHANGES IN EQUITY-

For the year ended 31 December 2018

Separate financial statements Bant'000										
Notes	Issued and paid-up share capital	Premium on share capital	Retained earnings		Other components of equity			Total other components of equity	Total equity	
					Other comprehensive income (expense)		Translation differences			
			Legal reserve	Unappropriated	Fair value reserve of available-for-sale investments	Cash flow hedge reserve				
Opening balance as at 1 January 2018										
32		5,161,925	15,372,438	516,193	20,136,050	121,256	452,368	(414,531)	159,093	41,345,699
		-	-	-	(3,613,307)	-	-	-	-	(3,613,307)
		-	-	-	1,693,100	(57,799)	185,644	(343,809)	(215,964)	1,477,136
Closing balance as at 31 December 2018										
		5,161,925	15,372,438	516,193	18,215,843	63,457	638,012	(758,340)	(56,871)	39,209,528
Opening balance as at 1 January 2017										
		4,937,170	14,479,494	426,782	20,433,874	7,713	504,683	3,440,120	3,952,516	44,229,836
24		224,755	892,944	-	-	-	-	-	-	1,117,699
25		-	-	89,411	(89,411)	-	-	-	-	-
32		-	-	-	(2,813,656)	-	-	-	-	(2,813,656)
Total comprehensive income (expense) for the year										
		-	-	-	2,605,243	113,543	(52,315)	(3,854,651)	(3,793,423)	(1,188,180)
Closing balance as at 31 December 2017										
		5,161,925	15,372,438	516,193	20,136,050	121,256	452,368	(414,531)	159,093	41,345,699

STATEMENT OF CASH FLOWS

For the year ended 31 December 2018

	Notes	Consolidated financial statements			
		US Dollar'000		Baht'000	
		2018	2017	2018	2017
Cash flows from operating activities					
Profit for the year before income taxes		504,024	476,845	16,346,046	16,139,683
Adjustment to reconcile profit before taxes to cash receipts from (payments in) operations					
- Depreciation and amortisation		326,334	205,010	10,544,080	6,957,629
- Write-off projects under development		-	15,636	-	530,655
- Write-off property, plant and equipment	14	1,863	2,328	60,156	79,004
- Allowance for doubtful accounts		-	2,328	-	79,004
- Allowance for slow-moving of coal		-	969	-	32,878
- Allowance for slow-moving of spare parts and machinery supplies		2,131	896	68,854	30,408
- Allowance for net realisable value of inventory		4,042	-	130,600	-
- Interest expenses		170,311	135,337	5,505,827	4,586,382
- Other finance costs		4,977	4,630	160,500	157,265
- Interest income		(8,322)	(5,728)	(269,762)	(194,188)
- Share of profit from joint ventures and associates	13	(263,662)	(204,663)	(8,499,974)	(6,965,711)
- Dividend income from other investments		(999)	(936)	(32,392)	(31,790)
- Net gains on disposal of property, plant and equipment		(2,828)	(765)	(91,376)	(25,963)
- Net gains on disposal of investments in a subsidiary and a joint venture		-	(2,349)	-	(79,720)
- Share based payment expenses		404	984	12,999	33,342
- Bargain purchase from business acquisition	35	(30,672)	-	(962,360)	-
- Net unrealised losses from financial derivatives		62,587	20,970	2,051,687	705,811
- Net unrealised (gains) losses on exchange rate		(45,036)	41,017	(1,472,444)	(1,304,606)
Cash flow before changes in working capital		725,154	692,509	23,552,441	20,730,083
Changes in working capital (before effect of business acquisition)					
- Trade accounts receivable and notes receivable		(84,282)	(97,205)	(2,723,210)	(3,298,943)
- Amounts due from related parties		398	(203)	12,860	(6,889)
- Advances to related parties		314	(8,995)	10,146	(305,272)
- Inventories		(28,252)	(44,247)	(912,842)	(1,501,655)
- Spare parts and machinery supplies		(1,200)	(3,638)	(38,773)	(123,466)
- Other current assets		(1,772)	(51,400)	(57,255)	(1,744,413)
- Deferred overburden expenditures stripping costs		(71,216)	18,942	(2,301,039)	642,871
- Other non-current assets		6,778	(41,984)	219,002	(1,424,854)
- Trade accounts payable		2,152	57,122	69,533	1,938,606
- Accrued overburden and coal transportation costs		39,800	18,128	1,285,966	615,228
- Accrued royalty expenses		(7,204)	(6,576)	(232,766)	(223,176)
- Employee benefits obligation		2,856	4,063	92,279	137,890
- Other current liabilities		85,009	(207)	2,746,700	(7,020)
- Other liabilities		1,605	45,015	51,859	1,527,719

STATEMENT OF CASH FLOWS

For the year ended 31 December 2018

Consolidated financial statements					
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Cash generated from operating activities		670,140	581,324	21,774,901	16,956,709
- Interest paid and financial charges paid		(174,652)	(136,640)	(5,643,128)	(4,637,288)
- Income tax paid		(135,029)	(96,938)	(4,362,882)	(3,803,907)
- Income tax refund		51,225	19,827	1,655,116	1,186,914
Net cash receipts from operating activities		411,684	367,573	13,424,007	9,702,428
Cash flows from investing activities					
Net cash receipts from short-term investments		1,427	8,278	46,107	280,939
Cash receipts from short-term loan to a related party	33	749	3,510	24,200	119,134
Cash payments for short-term loan to related parties	33	(825)	-	(26,670)	-
Cash receipts from long-term loan to a related party	33	2,622	5,015	84,707	170,199
Cash payments for long-term loan to a related party	33	(797)	(2,066)	(25,758)	(70,102)
Cash payments for short-term loan to other company		(2,803)	(8,060)	(90,567)	(273,540)
Cash payments for long-term loan to other company		-	(13,887)	-	(471,297)
Cash payments for purchase of other investments		(32,801)	(12,247)	(1,059,823)	(415,639)
Cash payments for additional investments		(176,887)	(337,217)	(5,913,459)	(11,444,477)
Cash receipts from disposal of investment in a joint venture	13	-	4,615	-	156,624
Cash payments for purchase of property, plant and equipment		(273,176)	(240,840)	(8,826,508)	(8,173,628)
Cash receipts from disposal of property, plant and equipment		12,882	6,779	416,226	230,066
Cash payments for deferred exploration and development expenditures		(130,508)	(26,293)	(4,216,805)	(892,349)
Advance payment for development of power plant		-	(26,750)	-	(907,841)
Interest received		8,538	6,239	275,869	211,739
Cash receipts from dividends from joint ventures		148,273	91,190	4,790,804	3,094,806
Cash receipts from dividends from other investments		999	936	32,392	31,790
Cash payments for placement of restricted deposits at banks		(10,401)	-	(336,064)	-
Net cash payments in investing activities		(452,708)	(540,798)	(14,825,349)	(18,353,576)
Cash flows from financing activities					
Cash receipts from short-term loans from financial institutions	20	872,232	1,185,889	28,182,416	40,246,691
Repayments of short-term loans from financial institutions	20	(775,225)	(1,061,975)	(25,048,057)	(36,041,314)
Cash payments for finance leases		(9,930)	(5,860)	(320,845)	(198,877)
Cash receipts from (repayment of) short-term loans from a related party	33	(1,248)	1,257	(40,320)	42,673

STATEMENT OF CASH FLOWS

For the year ended 31 December 2018

Consolidated financial statements					
	Notes	US Dollar'000		Baht'000	
		2018	2017	2018	2017
Cash receipts from long-term loans from financial institutions	21	497,644	813,705	16,079,238	27,615,528
Repayments of long-term loans from financial institutions	21	(276,349)	(705,100)	(8,929,024)	(23,929,668)
Cash receipts from debentures	22	50,000	286,570	1,615,535	9,725,609
Repayments of debentures	22	(177,867)	-	(5,746,993)	-
Cash receipts from increase in share capital	24	-	32,151	-	1,117,699
Cash receipts from increase in share capital of a subsidiary					
from non-controlling interests		2,023	3,728	65,938	124,219
Dividend paid to shareholders	32	(112,483)	(82,810)	(3,613,307)	(2,813,656)
Dividend paid to non-controlling interests	29	(94,191)	(76,866)	(3,024,567)	(2,609,879)
Net cash receipts from (payments in) financing activities		(25,394)	390,689	(779,986)	13,279,025
Net increase (decrease) in cash and cash equivalents		(66,418)	217,464	(2,181,328)	4,627,877
Exchange gains (losses) on cash and cash equivalents		(9,314)	10,668	(434,003)	1,394,686
Cash and cash equivalents at beginning of the year		683,076	454,944	22,323,531	16,300,968
Cash and cash equivalents at end of the year		607,344	683,076	19,708,200	22,323,531
Non cash transactions					
Significant non-cash transactions as at 31 December are as follows:					
Other payables and finance lease from purchase of property, plant and equipment		20,909	29,942	678,460	978,521
Purchase consideration for business acquisition					
- Other payables from business acquisition		-	7,038	-	230,022
Increase in spare parts and machinery supplies					
from reduction of short-term loan to other company		-	647	-	21,135
Convert advance to a related party to short-term loan to a related party		-	4,981	-	169,034
Transfer of advance payment for developing solar power plant projects		9,149	26,519	295,601	900,000
Increase in deferred exploration and development expenditures by advance received		6,486	2,000	210,469	65,362
Other receivables from disposal of machinery and equipment		2,053	-	66,587	-

STATEMENT OF CASH FLOWS

For the year ended 31 December 2018

Separate financial statements				
Notes	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Cash flows from operating activities				
Profit for the year before income taxes	60,346	53,275	1,979,181	1,755,230
Adjustment to reconcile profit before income taxes to				
cash receipts from (payments in) operations				
- Depreciation and amortisation	1,351	1,743	43,667	59,162
- Write-off property, plant and equipment	14	1	2	12
- Write-off intangible assets	-	9	-	302
- Allowance for slow-moving of coal	-	969	-	32,878
- Interest expenses	133,634	103,737	4,319,819	3,514,560
- Other finance costs	2,185	2,470	70,722	83,657
- Interest income	(103,468)	(78,036)	(3,344,880)	(2,644,494)
- Dividend income from subsidiaries	(145,775)	(96,795)	(4,724,903)	(3,221,943)
- Dividend income from other investments	(248)	(174)	(7,903)	(5,978)
- Gains on disposal of property, plant and equipment	(2,565)	(1,363)	(82,881)	(46,274)
- Share-based payment expenses	139	301	4,496	10,207
- Net unrealised (gains) losses from financial derivatives	(6,389)	23	(206,445)	771
- Net unrealised losses on exchange rate	7,829	24,046	212,213	820,003
Cash flow before changes in working capital	(52,960)	10,207	(1,736,902)	358,149
Changes in working capital				
- Trade accounts receivable	(2,392)	(3,218)	(77,275)	(109,217)
- Amounts due from related parties	(99)	(7,354)	(3,183)	(249,594)
- Advances to related parties	(259)	(42)	(8,364)	(1,431)
- Inventories	(1,573)	2,671	(50,833)	90,648
- Other current assets	(2,689)	375	(86,879)	12,719
- Other non-current assets	853	514	27,570	17,429
- Trade accounts payable to a subsidiary	116	(4,000)	3,750	(135,768)
- Advances from and amounts due to related parties	324	198	10,456	6,711
- Employee benefits obligation	379	899	12,232	30,525
- Other current liabilities	8,708	1,906	281,350	64,736
- Other liabilities	(80)	87	(2,576)	2,940
Cash generated from (used in) operating activities	(49,672)	2,243	(1,630,654)	87,847
- Interest paid and finance costs paid	(133,311)	(105,086)	(4,307,364)	(3,566,431)
Net cash payments in operating activities	(182,983)	(102,843)	(5,938,018)	(3,478,584)

STATEMENT OF CASH FLOWS

For the year ended 31 December 2018

		Separate financial statements			
		US Dollar'000		Baht'000	
	Notes	2018	2017	2018	2017
Cash flows from investing activities					
Cash receipt from short-term loan to a related party	33	168,476	7,070	5,443,587	239,952
Cash payments for short-term loan to a related party	33	(175,675)	(104,850)	(5,676,170)	(3,558,399)
Cash receipts from long-term loans to a related party	33	11,312	2,010	365,509	68,215
Cash payments for long-term loans to a related party	33	(116,463)	(353,186)	(3,763,003)	(11,986,436)
Cash payments for increase in investment in subsidiaries		-	(17,640)	-	(598,653)
Cash receipts from short-term investments		-	3,017	-	102,376
Cash payments for purchase of property, plant and equipment		(1,083)	(3,097)	(35,007)	(105,104)
Cash receipts from disposal of property, plant and equipment		709	1,428	22,909	48,470
Interest received		44,374	13,700	1,433,763	464,959
Cash receipts from dividends from subsidiaries		209,009	133,103	6,753,226	4,517,260
Cash receipts from dividends from other investments		248	174	7,903	5,914
Net cash receipts from (payments in) from investing activities		140,907	(318,271)	4,552,717	(10,801,446)
Cash flows from financing activities					
Cash receipts from short-term loans from financial institutions	20	700,102	922,182	22,620,798	31,297,014
Repayments of short-term loans from financial institutions	20	(577,837)	(795,299)	(18,670,302)	(26,990,865)
Cash receipts from short-term loan from a related party	33	-	1,450	-	49,210
Repayments of short-term loan from a related party	33	(4,449)	(1,450)	(143,739)	(49,210)
Cash receipts from long-term loans from financial institutions	21	289,000	400,000	9,337,792	13,575,200
Repayments of long-term loans from financial institutions	21	(137,000)	(323,150)	(4,426,566)	(10,967,065)
Cash receipts from debentures	22	50,000	286,570	1,615,535	9,725,609
Repayments of debentures	22	(177,867)	-	(5,746,993)	-
Cash receipts from issued of additional share capital	24	-	32,151	-	1,117,699
Dividend paid to shareholders	32	(112,483)	(82,810)	(3,613,307)	(2,813,656)
Net cash receipts from financing activities		29,466	439,644	973,218	14,943,936
Net increase (decrease) in cash and cash equivalents		(12,610)	18,530	(412,083)	663,906
Exchange gains (losses) on cash and cash equivalents		109	2,711	(2,996)	(31,402)
Cash and cash equivalents at beginning of the year		40,814	19,573	1,333,831	701,327
Cash and cash equivalents at end of the year		28,313	40,814	918,752	1,333,831
Non cash transactions					
Significant non-cash transactions as at 31 December are as follows:					
Other payables for purchase of property, plant and equipment		686	79	22,256	2,576

NOTES TO THE CONSOLIDATED AND SEPARATE FINANCIAL STATEMENTS

For the year ended 31 December 2018

1 General information

Banpu Public Company Limited (the Company) is a public limited company incorporated and resident in Thailand. The address of the Company's registered office is 1550 Thanapoom Tower, 27th Floor, New Petchburi Road, Makkasan, Ratchathewi, Bangkok.

The Company is listed on the Stock Exchange of Thailand. For reporting purposes, the Company and its subsidiaries are referred to as the Group.

The Group is engaged in coal mining and power businesses.

The Group has operations in Thailand and overseas mainly in Indonesia, the People's Republic of China, Australia, Mongolia, and the United States of America.

These consolidated and separate financial statements were authorised by the Board of Directors on 21 February 2019.

2 Accounting policies

The principal accounting policies adopted in the preparation of these consolidated and separate financial statements are set out below.

2.1 Basis of preparation

The consolidated and separate financial statements have been prepared in accordance with Thai generally accepted accounting principles under the Accounting Act B.E. 2543, being those Thai Financial Reporting Standards issued under the Account Profession Act B.E. 2547, and the financial reporting requirements of the Securities and Exchange Commission under the Securities and Exchange Act.

Management has determined that the US Dollar is the Company's functional currency and has presented the consolidated and separate financial statements in US Dollar, in accordance with TAS 21 (revised 2017) "The Effects of Changes in Foreign Exchange Rates". The Company is required to present its consolidated and separate financial statements in Thai Baht by converting the US Dollar to Thai Baht, using the basis as described in Note 2.4 (c) to comply with the regulations of the Stock Exchange of Thailand and the Department of Business Development.

The consolidated and separate financial statements have been prepared under the historical cost convention except for certain accounts as disclosed in the accounting policies below.

The preparation of financial statements in conformity with Thai generally accepted accounting principles requires the use of certain accounting estimates. It also requires management to exercise its judgement in the process of applying the Group's accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the consolidated and separate financial statements are disclosed in Note 4.

An English version of the consolidated and separate financial statements has been prepared from the consolidated and separate financial statements that are in the Thai language. In the event of a conflict or a difference in interpretation between the two languages, the Thai language consolidated and separate financial statements shall prevail.

2.2 New financial reporting standards, revised financial reporting standards and related interpretations

2.2.1 Revised financial reporting standards are effective for annual periods beginning on or after 1 January 2018

Commencing from 1 January 2018, the Group adopted the revised financial reporting standards effective for annual periods beginning on or after 1 January 2018 and relevant to the Group. The adoption of these standards do not have significant impact on the Group.

2.2.2 New financial reporting standard will become effect for annual periods beginning on or after 1 January 2019. The Group has not yet adopted this standard.

Thai Financial Reporting Standard (TFRS) 15 “Revenue from contracts with customers” provides the requirements for the recognition of revenue. This standard will supersede the following standards:

TAS 11 (revised 2017)	Construction Contracts
TAS 18 (revised 2017)	Revenue
TSIC 31 (revised 2017)	Revenue - Barter Transactions Involving Advertising Services
TFRIC 13 (revised 2017)	Customer Loyalty Programmes
TFRIC 15 (revised 2017)	Agreements for the Construction of Real Estate
TFRIC 18 (revised 2017)	Transfers of Assets from Customers

The new standard is based on the principle that revenue is recognised when control of a good or service transfers to a customer, so the notion of control replaces the existing notion of risks and rewards.

An entity recognises revenue in accordance with that core principle by applying the following steps:

- 1) Identify the contract(s) with a customer
- 2) Identify the performance obligations in the contract
- 3) Determine the transaction price
- 4) Allocate the transaction price to the performance obligations in the contract
- 5) Recognise revenue when (or as) the entity satisfies a performance obligation

Key changes to current practice are:

- Any bundled goods or services that are distinct must be separately recognised, and any discounts or rebates on the contract price must generally be allocated to the separate elements
- Revenue may be recognised earlier than under current standards if the consideration varies for any reasons (such as for incentives, rebates, performance fees, royalties, success of an outcome etc.) - minimum amounts must be recognised if they are not at significant risk of reversal
- The point at which revenue is able to be recognised may shift: some revenue which is currently recognised at a point in time at the end of a contract may have to be recognised over the contract term and vice versa
- There are new specific rules on licenses, warranties, non-refundable upfront fees and, consignment arrangements
- As with any new standard, there are also increased disclosures.

The Group intends to adopt the standard using the modified retrospective approach which means that the cumulative impact of the adoption will be recognised in retained earnings as of 1 January 2019 and that comparatives will not be restated. The Group's management is currently assessing the final impact of adoption of this standard.

2.2.3 Revised financial reporting standards will become effect for annual periods beginning on or after 1 January 2019 and are relevant to the Group. The Group has not yet adopt these standards.

TFRS 2 (revised 2018)	Share-based Payment
TFRS 4 (revised 2018)	Insurance Contracts
TAS 28 (revised 2018)	Investments in associates and joint ventures
TAS 40 (revised 2018)	Investment Property
TFRIC 22	Foreign Currency Transactions and Advance Consideration

TFRS 2 (revised 2018) "Share-based Payment", the amendments clarify;

- The measurement basis for cash-settled share-based payments, vesting conditions, other than market conditions, shall not be taken into account when estimating the fair value of the cash-settled share-based payment at the measurement date. Instead, vesting conditions, other than market conditions, shall be taken into account by adjusting the number of awards included in the measurement of the liability arising from the transaction.

- Where an employer is obliged to withhold an amount for the employee's tax obligation associated with a share-based payment and pay that amount to the tax authority, the whole award will be treated as if it was equity-settled provided it would have been equity-settled without the net settlement feature, and
- The accounting for modifications that change an award from cash-settled to equity-settled.

TFRS 4 (revised 2018) "Insurance Contracts" has been amended to provide insurance companies an optional exemption from compliance with TFRS 9 and TFRS 7. The exemption is temporarily effective and not mandatory. Entities who choose to use the exemption must follow the 'financial instruments and disclosure for insurance companies' accounting guidelines to be issued by the Federation of Accounting Professions (upon announcement) until TFRS 17 becomes effective.

TAS 28 (revised 2018) "Investments in Associates and Joint Ventures", the amendment clarifies that the election by venture capital organisations, mutual funds, unit trusts and similar entities to measure investments in associates or joint ventures at fair value through profit or loss should be made separately for each associate or joint venture at initial recognition.

TAS 40 (revised 2018) "Investment Property", the amendments clarify that transfers to, or from, investment property can only be made if there has been a change in use that is supported by evidence. A change in use occurs when the property meets, or ceases to meet, the definition of investment property. A change in intention alone is not sufficient to support a transfer.

TFRIC 22 "Foreign Currency Transactions and Advance Consideration" provides guidance for determining the exchange rate to be used on the initial recognition of a related asset, expense or income where an entity pays or receives an advance consideration in a foreign currency. The interpretation requires an entity to use the exchange rate at the date on which an entity recognises the non-monetary assets, such as prepayments and advances, or non-monetary liability, such as deferred income arising from the advance consideration. If there are multiple advance payments or receipts of payments, the exchange rate is to be used on the date when each non-monetary asset or liability is recognised.

The Group's management has assessed and considered that the above revised standards will not have a material impact on the Group.

2.2.4 The Group of financial instruments reporting standards will become effect for annual periods beginning on or after 1 January 2020. The Group has not yet adopted these standards.

TAS 32	Financial Instruments: Presentation
TFRS 7	Financial Instruments: Disclosures
TFRS 9	Financial Instruments

TFRIC 16	Hedges of a Net Investment in a Foreign Operation
TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments

The above new standards and interpretations will supersede the following standards:

TAS 101	Bad and Doubtful Debts
TAS 103	Disclosures in the Financial Statements of Bank and Similar Financial Institutions
TAS 104	Accounting for Troubled Debt Restructuring
TAS 105	Accounting for Investment in Debts and Equity securities
TAS 106	Accounting for Investment Companies
TAS 107	Financial Instruments: Disclosure and Presentation

TAS 32 “Financial Instruments: Presentation”, provides the requirements for the presentation financial instruments as liabilities or equity and for offsetting financial assets and financial liabilities. It applies to the classification of financial instruments, from the perspective of the issuer, into financial assets, financial liabilities and equity instruments; the classification of related interest, dividends, losses and gains; and the circumstances in which financial assets and financial liabilities should be offset.

TFRS 7 “Financial Instruments: Disclosures”, provides the requirements for the disclosure that are intended to enable users to evaluate the significance of financial instruments for an entity’s financial position and performance, and to understand the nature and extent of risks arising from those financial instruments to which the entity is exposed during the period and at the end of the reporting period, and how the entity manages those risks.

TFRS 9 “Financial Instruments”, establishes principles for the classification, measurement and derecognition of financial assets and financial liabilities, impairment requirement and hedge accounting as follow:

- Classification and measurement:
 - The classification and measurement of debt instrument financial assets has three classification categories, which are amortised cost, fair value through profit or loss and fair value through other comprehensive income. Classification of debt assets will be driven by the entity’s business model for managing the financial assets and contractual cash flows characteristics of the financial assets.

- Equity instrument financial assets shall be measured at fair value through profit or loss. An entity can make an irrevocable election to recognise the fair value change in other comprehensive income without subsequent recycling to profit or loss.
- Financial liabilities are classified and measured at amortised cost. An entity can choose to measure a liability at fair value through profit or loss when the conditions are met.
- Derivatives are classified and measured at fair value through profit or loss.
- The impairment requirements relating to the accounting for an entity's expected credit losses on its financial assets measured at amortised cost, investments in debt instruments measured at fair value through other comprehensive income, lease receivables, loan commitments and financial guarantee contracts. It is no longer necessary for a credit event to have occurred before credit losses are recognised. The entity always accounts for expected credit losses which involves a three stage approach. The stage dictates how the entity measures impairment losses and applies the effective interest rate method. Except for trade receivables and contractual assets which apply in TFRS 15 and are no significant financial components and lease receivables, they are permitted to measure by simplified approach for credit impaired consideration.
- The objective of hedge accounting is to represent, in the financial statements, the effect of an entity's risk management activities that use financial instruments to manage exposures arising from particular risks that could affect profit or loss (or other comprehensive income, in the case of investments in equity instruments for which an entity has elected to present changes in fair value in other comprehensive income). This approach aims to convey the context of hedging instruments for which hedge accounting is applied in order to allow insight into their purpose and effect.

TFRIC 16 "Hedges of a Net Investment in a Foreign Operation", clarifies the accounting treatment in respect of net investment hedging, provides guidance on identifying the foreign currency risks that qualify as a hedged risk. Clarifying that hedging instruments that are hedges of a net investment in a foreign operation may be held anywhere in the group not only by the parent. This includes the guidance on how an entity should determine the amount to be reclassified from equity to profit or loss for both the hedging instrument and the hedged item.

TFRIC 19 "Extinguishing Financial Liabilities with Equity Instruments", provides the requirements for accounting treatment when the entity issues equity instruments to a creditor to extinguish all or part of a financial liability. The equity instruments issued shall be measured at fair value. The entity shall remove a financial liability (or part of a financial liability) from its statement of financial position when it is extinguished in accordance with TFRS 9. The difference between the carrying amount of the financial liability (or part of a financial liability) extinguished and the fair value of equity instruments issued shall be recognised in profit or loss.

The Group's management is currently assessing the impact of initial adoption of these standards.

2.3 Group accounting - Investments in subsidiaries, associates and joint arrangements

2.3.1 Subsidiaries

Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

The Group applies the acquisition method to account for business combinations except business combination under common control. The consideration transferred for the acquisition of a subsidiary is the fair value of the assets transferred, the liabilities incurred to the former owners of acquiree and the equity interests issued by the Group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Acquisition-related costs are expensed as incurred. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. On an acquisition-by-acquisition basis, the Group recognises any non-controlling interest in the acquiree either at fair value or at the non-controlling interest's proportionate share of the acquiree's net assets.

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measurement are recognised in profit or loss.

Any contingent consideration to be transferred by the Group is recognised at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration that is deemed to be an asset or liability is recognised in profit or loss. Contingent consideration that is classified as equity is not re-measured, and its subsequent settlement is accounted for within equity.

The excess of the consideration transferred, the amount of any non-controlling interest in the acquiree and the acquisition-date fair value of any previous equity interest in the acquiree over the fair value of the identifiable net assets acquired is recorded as goodwill. If the total of consideration transferred, non-controlling interest recognised and previously held interest measured is less than the fair value of the net assets of the subsidiary acquired in the case of a bargain purchase, the difference is recognised directly in profit or loss.

Intercompany transactions, balances and unrealised gains on transactions between group companies are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

A list of the Group's subsidiaries is shown in Note 13.6.

2.3.2 Transactions with non-controlling interests

The Group treats transactions with non-controlling interests as transactions with equity owners of the Group. For purchases from non-controlling interests, the difference between any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

2.3.3 Disposal of subsidiaries

When the Group ceases to have control it shall cease to consolidate its subsidiaries. Any retained interest in the entity is re-measured to its fair value, with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities.

2.3.4 Business combination under common control

The Group accounts for business combination under common control by measuring acquired assets and liabilities of the acquiree in the proportion of interests under common control at the carrying values of the acquiree presented in the highest level of the consolidation prior to the business combination under common control at the acquisition date. The Group retrospectively adjusted the business combination under common control transactions as if the combination occurred from the beginning of the period for which the financial statements in the previous period are comparatively presented in accordance with the guidance of business combination under common control as issued by the Federation of Accounting Professions.

Costs of business combination under common control are the aggregated amount of fair value of assets transferred, liabilities incurred and equity instruments issued by the acquirer at the date of which the exchange in control occurs. Other costs directly attribute to business combination under common control, such as professional fees of legal advisors and other advisors, registration fees, and costs relating to preparation of information for shareholders, are capitalised as an investment in the separate financial statements while immediately recognised as expenses in the consolidated financial statements in the period of which the business combination occurs.

The difference between costs of business combination under common control and the acquirer's interests in the carrying value of the acquiree is presented as "Surplus arising from business combination under common control" in equity and is derecognised when the investment is disposed and transferred to retained earnings.

2.3.5 Associates

Associates are all entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method of accounting.

A list of the Group's associates is shown in Note 13.6.

2.3.6 Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangements.

Joint operations

A joint operation is a joint arrangement whereby the Group has rights to the assets, and obligations for the liabilities relating to the arrangement. The Group recognises its direct right to the assets, liabilities, revenues and expenses of joint operations and its share of any jointly held or incurred assets, liabilities, revenues and expenses. These have been incorporated in the financial statements under the appropriate headings.

Joint ventures

A joint venture is a joint arrangement whereby the Group has rights to the net assets of the arrangement. Interests in joint ventures are accounted for using the equity method in the consolidated financial statements.

A list of the Group's principal joint arrangements is shown in Note 13.6.

2.3.7 Accounting under the equity method

Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to recognise the investor's share of the profit or loss of the investee after the date of acquisition. The Group's investment in associates includes goodwill identified on acquisition.

If the ownership interest in associates and joint ventures is reduced but significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate. Profit or loss from a reduced ownership interest in associates and joint ventures is recognised in profit or loss.

The Group's share of its associates and joint ventures' post-acquisition profits or losses is recognised in the profit or loss, and its share of post-acquisition movements in other comprehensive income is recognised in other comprehensive income. The cumulative post-acquisition movements are adjusted against the carrying amount of the investment. When the Group's share of losses in associates and joint ventures equals or exceeds its interest in the associates and joint ventures, together with any long-term interests that, in substance, form part of the entity's net investment in the associates or joint ventures, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associates and joint ventures.

The Group determines at each reporting date whether there is any objective evidence that the investments in the associates and joint ventures are impaired. If this is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the investments and its carrying value and recognises the amount adjacent to share of profit (loss) of associates and joint ventures in profit or loss.

Unrealised gains on transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interest in the associates and joint ventures. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates and joint ventures have been changed where necessary to ensure consistency with the policies adopted by the Group.

2.3.8 Separate financial statements

In the separate financial statements, investments in subsidiaries, associates and joint ventures are accounted for at cost less impairment. Cost is adjusted to reflect changes in consideration arising from contingent consideration amendments. Cost also includes direct attributable costs of investment.

A test for impairment of investments in subsidiaries is carried out when there is a factor indicating that an investment might be impaired. If the carrying value of the investment is higher than its recoverable amount, impairment loss is charged to profit or loss.

2.4 Foreign currency translation

(a) Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the Functional Currency). The financial statements are presented in US Dollar, which is the Company's functional currency and presentation currency.

(b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transaction. Foreign exchange gains and losses resulting from the

settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the profit or loss.

When a gain or loss on a non-monetary item is recognised in other comprehensive income, any exchange component of that gain or loss is recognised in other comprehensive income. Conversely, when a gain or loss on a non-monetary item is recognised in profit and loss, any exchange component of that gain or loss is recognised in profit and loss.

(c) Group companies

The results and financial position of all of the Group's entities (none of which has the currency of a hyper-inflationary economy) that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- assets and liabilities for each statement of financial position presented are translated at the closing rate at the date of that statement of financial position;
- income and expenses for each statement of comprehensive income are translated at average exchange rates; and
- all resulting exchange differences are recognised in other comprehensive income.

Goodwill and fair value adjustments arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated at the closing rate.

To comply with the regulations of the Stock Exchange of Thailand and Department of Business Development, the Group has to present the financial statements in Thai Baht that are converted from the US Dollar financial statements by using the basis as described in Note 2.4 (c).

2.5 Cash and cash equivalents

In the consolidated and separate statements of cash flows, cash and cash equivalents includes cash on hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less and bank overdrafts. Bank overdrafts are shown within borrowings in current liabilities in the consolidated and separate statements of financial position.

2.6 Trade accounts receivable and notes receivable

Trade accounts receivable are carried at original invoice amount and subsequently measured at the remaining amount less allowance for doubtful receivables based on a review of all outstanding amounts at the year end. The amount of the allowance is the difference between the carrying amount of the receivable and the amount expected to be collectible. Bad debts are recognised in the profit or loss within administrative expenses.

Notes receivable are notes received from customers that are issued by financial institutions from sales of electricity and steam from subsidiaries in the People's Republic of China in the ordinary

course of business. If collection is expected in one year or less, they are classified as current assets. If not, they are presented as non-current assets.

2.7 Inventories, spare parts and machinery supplies

Inventories

Inventories consist of coal and fuel and are valued at the lower of cost or net realisable value. Cost is determined on a weighted average method. The cost of coal comprises direct labour, other direct costs and related production overhead. The cost of fuel comprises both the purchase price and costs directly attributable to the acquisition of fuel.

Net realisable value is the estimate of the selling price in the ordinary course of business, less the costs of completion and selling expenses. The Group recognises allowance for slow-moving of coal and fuel based on a specific case.

Spare parts and machinery supplies

Spare parts and machinery supplies are stated at cost less allowance for obsolescence, slow-moving and defective. Cost is determined on a weighted average method. The cost of purchase comprises both the purchase price and costs directly attributable to the acquisition of spare parts and machinery supplies, such as import duties and transportation charge, less all attributable discounts, allowances or rebates. Spare parts and machinery supplies are charged to production costs in the period in which they are used.

Allowance is made for obsolete, slow-moving and defective spare parts and machinery supplies on a specific case.

2.8 Accounting for derivative financial instruments and hedging activities

The Group recognises derivative financial instruments at fair value on the date a derivative financial instrument contract is entered into and subsequently remeasured to their fair value. Changes in fair value of any derivative financial instrument that does not qualify for hedge accounting are recognised in profit and loss within “net gains (losses) from financial derivatives”.

When the Group applies hedge accounting, which is appropriate based upon the specific criteria in accordance to hedging, the impact of recording the derivatives is offset to the extent that the hedging relationship is effective. If a hedge is designated and qualified as a cash flow hedge, the portion of the gain or loss on the hedging instrument that is determined to be an effective hedge shall be recognised in other comprehensive income and amounts accumulated in equity are reclassified to profit or loss in the periods when the hedged items affects profit or loss. The gain or loss relating to the ineffective portion is recognised immediately in profit or loss. If a hedge is designated and qualified as a fair value hedge, changes in the fair value of derivative financial instruments are recorded in profit or loss, together with any changes in fair value of the hedged items that are attributable to the hedged risk.

2.9 Other investments

Investments other than investments in subsidiaries, associates and joint ventures are classified into three categories:

1) held-to-maturity, 2) available-for-sale and 3) general investments. The classification depends on the purpose for which the investments were acquired. Management determines the appropriate classification of its investments at the time of the purchase and re-evaluates such designation on a regular basis.

- Investments with a fixed maturity that the management has the intent and ability to hold to maturity are classified as held-to-maturity.
- Investments intended to be held for an indefinite period of time, which may be sold in response to liquidity needs or changes in interest rates, are classified as available-for-sale.
- Investments in non-marketable equity securities are classified as general investments.

All categories of investment are initially recognised at cost, which is equal to the fair value of consideration paid plus transaction cost.

Available-for-sale investments are subsequently measured at fair value. The unrealised gains and losses of available for sale investments are recognised in other comprehensive income.

Held-to-maturity investments are carried at amortised cost using the effective yield method less impairment loss.

General investments are carried at cost less impairment.

A test for impairment is carried out when there is a factor indicating that an investment might be impaired. If the carrying value of the investment is higher than its recoverable amount, impairment loss is charged to the profit or loss.

On disposal of an investment, the difference between the net disposal proceeds and the carrying amount is recognised to the profit or loss. When disposing of part of the Group's holding of a particular investment in debt or equity securities, the carrying amount of the disposed part is determined by the weighted average carrying amount of the total holding of the investment.

2.10 Investment property

Property that is held for long-term rental or for capital appreciation or both, and that is not occupied by the companies in the Group, is classified as investment property. Investment property also includes property that is being constructed or developed for future use as investment property or land held for a currently undetermined future use. The Group's investment property is land held for a currently undetermined future use.

Investment property is measured initially at its cost including related transaction costs. Subsequently, the investment property is carried at cost less accumulated impairment losses.

Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Group and the cost of the item can be measured reliably. All other repair and maintenance costs are expensed when incurred.

2.11 Property, plant and equipment

Property, plant and equipment are initially recorded at cost. All plant and equipment are stated at historical cost less accumulated depreciation and allowance for impairment.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognised. All other repairs and maintenance are charged to profit or loss during the financial period in which they are incurred.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives as follows:

Land improvement	10 years
Buildings, construction and building improvement	shorter period of the mine or 5 to 30 years and 30 years for power plants
Machinery and equipment	5 to 40 years
Furniture	3 and 5 years
Office equipment and tools	3 and 5 years
Motor vehicles	4 and 5 years
Equipment under finance lease	5 to 15 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

Where the carrying amount of an asset is greater than its estimated recoverable amount, it is written down immediately to its recoverable amount.

Gains or losses on disposals are determined by comparing proceeds with carrying amount and are recognised in the profit or loss.

Gas exploration and producing assets

Costs of properties comprise total acquisition costs of natural gas rights or the acquisition costs of the portion of properties, decommissioning costs as well as equipment and support equipment.

Exploratory drilling costs are capitalised and will be classified as natural gas of the projects if their exploratory wells have identified proved reserves that have been found to be commercially viable. However, if proved reserves are not identified or are not commercially viable, such drilling costs will be expensed in the profit or loss.

Exploration costs, comprising geological and geophysical costs as well as area reservation fees during the exploration stage, are charged to expenses in the profit or loss when incurred.

Development costs, whether relating to the successful or unsuccessful development of wells, are capitalised.

The capitalised acquisition costs of natural gas rights are amortised using the unit of production method based on proved reserves. Depreciation of exploratory wells, development costs and decommissioning costs, except unsuccessful projects, are calculated using the unit of production method based on proved reserves or proved developed reserves. The Group recognises changes in reserve estimates prospectively.

Proved reserves and proved developed reserves are calculated by the Group's engineers based on the information received from the joint operators.

Midstream assets

Costs of properties comprise purchase prices and other direct costs necessary to bring the asset to working condition suitable for its intended use. Depreciation is calculated on the straight-line method over their estimated useful life as follows:

Compressor station and meter station	25 years
Pipelines	40 years

2.12 Goodwill

Goodwill represents the excess of the cost of an acquisition over the fair value of the Group's share of the net assets of the acquired subsidiary, joint venture or associated undertaking at the date of acquisition. Goodwill on acquisitions of subsidiaries is separately reported in the consolidated statement of financial position. Goodwill on acquisitions of interests in joint ventures or associates is included in interests in joint ventures and investments in associates and is tested for impairment as part of the overall balance.

Separately recognised goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed. Gains and losses on the disposal of an entity include the carrying amount of goodwill relating to the entity sold.

Goodwill is allocated to cash-generating units for the purpose of impairment testing. The allocation is made to those cash-generating units or group of cash-generating units that are expected to benefit from the business combination in which the goodwill arose, identified according to operating segment.

2.13 Other non-current assets

2.13.1 Computer software

Computer software development costs recognised as assets are amortised over their estimated useful lives, which do not exceed 5 years.

2.13.2 Mining property rights

Mining property rights represent the excess of the cost of an acquisition over the fair value of net assets, which in managements' view represents future economic benefits attributable to the mining rights held by subsidiaries. Mining property rights are amortised using the units of coal production.

2.13.3 Deferred unfavourable contract liabilities

Deferred unfavourable contract liabilities are recognised as identifiable liabilities of acquiree as part of the purchase price allocation at the acquisition date. The unfavourable contract liabilities incurred from an excess of the fair value of long-term coal sales contracts than sales values specified in such coal sales contracts. The deferred unfavourable contract liabilities are amortised based on delivered units of coal.

2.13.4 Deferred exploration and development expenditures

Exploration expenditures are capitalised on an area of interest basis. Such expenditures comprise net direct costs such as licence, geology and geophysics expenditures and do not include general overheads or administrative expenditures not directly attributable to a particular area of interest. Exploration expenditures are capitalised as deferred expenditures when the following conditions are met:

- a) such costs are expected to be recouped through successful development and exploitation of the area of interest or, by its sales; and
- b) exploration activities in the area of interest have not yet reached the stage which permits a reasonable assessment of the existence of economically recoverable reserves, and active operations in the area are continuing.

Recoupment of exploration expenditure carried forward is dependent upon successful development and commercial exploitation, or sale of the respective area. Each area of interest is reviewed at the end of period. Exploration expenditures in respect of an area of interest, which has been abandoned or for which a decision has been made by the Group against the commercial viability of the area of interest, are written-off in the period the decision is made to the profit or loss.

Development expenditures and incorporated costs in developing an area of interest prior to commencement of operations in the respective area, as long as they meet the criteria for deferral, are capitalised.

Deferred exploration and development expenditure is principally amortised using the units of coal production of each area of interest starting from the commencement of commercial operations.

2.13.5 Stripping costs/Overburden costs

The Group recognises the production stripping costs as assets if, and only if, all of the following are met:

- a) it is probable that the future economic benefit associated with the stripping activity will flow to the entity;
- b) the entity can identify the component of the ore body for which access has been improved; and
- c) The costs relating to the stripping activity associated with that component can be measured reliably.

The deferred overburden expenditures/stripping costs shall be initially measured at cost and subsequently stated at cost less accumulated amortisation and impairment loss, if any. Amortisation is calculated using the units of production method.

2.13.6 Probable reserves

Probable reserves represent reserves that are assessed by the Group at the time when there is an acquisition of business. Probable reserves will be classified as gas properties once they are proved reserves and amortised using the unit of production method.

2.13.7 Exploration and evaluation assets

Exploration and evaluation expenditures are capitalised at cost as intangible assets. If the projects have identified the proved reserves that have been found to be commercially producible, the capitalised exploration and evaluation expenditures under these projects will be transferred to assets of the projects with proved reserves. Subsequent accounting is described in Note 2.11 the accounting policy for property, plant and equipment - Gas exploration and producing properties.

The capitalised exploration and evaluation expenditure is charged the profit or loss in the period in which the projects have not identified proved reserves or have identified proved reserves, but have not been found to be commercially producible.

2.13.8 Rights to operate the power plants

The rights to operate the power plants arising on acquisition of subsidiaries are amortised over the periods of estimated useful life of the power plants.

2.14 Impairment of assets

Assets that have an indefinite useful life, for example goodwill, are not subject to amortisation and are tested annually for impairment. Assets that are subject to amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the carrying amount of the assets exceeds its recoverable amount which is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest level for which there are separately identifiable cash flows. Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at each reporting date.

2.15 Long-term leases

The determination of whether an arrangement is or contains a lease shall be based on the substance of the arrangement, and not merely the legal form. It requires an assessment of whether (a) the fulfilment of the arrangement is dependent on the use of specific assets and (b) the arrangement conveys a right to use such assets.

If the arrangement is a lease or contains a lease, payments and other consideration required by the arrangement shall be separated into those for the lease and those for other elements (e.g. for services and the cost of inputs) on the basis of their relative fair values. The lease element of the arrangement shall be classified as a finance lease or an operating lease.

Leases – where the Group is the lessee

Leases of assets where the Group has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalised at the inception of the lease at the lower of the fair value of the leased property and the present value of the minimum lease payments. Each lease payment is allocated between the liability and finance charges so as to achieve a constant rate on the finance balance outstanding. The corresponding rental obligations, net of finance charges, are included in other long-term payables. The interest element of the finance cost is charged to profit or loss over the lease period so as to achieve a constant periodic rate of interest on the remaining balance of the liability for each period. The property, plant or equipment acquired under finance leases is depreciated over the shorter period of the useful life of the asset and the lease term.

Long-term leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to profit or loss on a straight-line basis over the period of the lease.

Leases – where the Group is the lessor

Leases in which a significant portion of risks and rewards of ownership are retained by the lessee are classified as finance lease. When assets are leased out under a finance lease, the present value of the lease payments is recognised as a receivable. The difference between the gross receivable and the present value of the receivable is recognised as unearned finance income. Finance lease income (interest income from finance leases) is recognised over the term of the lease using the net investment method, which reflects a constant periodic rate of return. Initial direct costs are included in initial measurement of the finance lease receivable and reduce the amount of income recognised over the lease term. The recognition follows accounting policy in Note 2.22.

Leases in which a significant portion of risks and rewards of ownership are retained by lessor are classified as operating leases. Assets leased out under operating leases are included in property, plant and equipment in the statement of financial position. They are depreciated over their expected useful lives on a basis consistent with other similar property, plant and equipment owned by the Group. Rental income is recognised on a straight-line basis over the lease term. The recognition follows accounting policy in Note 2.22.

2.16 Borrowings

Borrowings are recognised initially at the fair value of proceeds received, net of transaction costs incurred. Borrowings are subsequently stated at amortised cost using the effective yield method; any difference between proceeds (net of transaction costs) and the redemption value is recognised in the statement of comprehensive income over the period of the borrowings.

Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the draw-down occurs. To the extent that there is no evidence that it is probable that some or all of the facility will be draw down, the fee is capitalised as a pre-payment for liquidity services and amortised over the period of the facility to which it relates.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the end of reporting date.

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation.

All other borrowing costs are recognised in profit or loss in the period in which they are incurred.

2.17 Employee benefits

The Group operates various post-employment benefits schemes. The Group has both defined benefit and defined contribution plans.

Defined contribution

The Group operates a provident fund that is funded by payments from employees and by the relevant Group companies which are managed by trustee. The Group has no legal or constructive obligations to pay further contributions once the contributions have been paid even if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. Contributions to the provident fund are charged to the profit or loss in the year in which they are due.

Furthermore, the Group contributes to a monthly defined contribution retirement benefit plan administered by the government of the People's Republic of China. The relevant government agencies undertake to assume the retirement benefit obligation payable to all existing and future retired employees under this plan and the Group has no further obligation for post-retirement benefits beyond the contributions made. Contributions to this plan are recognised as an expense in profit or loss when incurred.

Retirement benefits

Employees are entitled to receive benefits reaching normal retirement age under the labour law applicable in Thailand and those countries in which the Group operates, or such other dates of entitlement as maybe agreed between the Group and employees. Retirement benefits depend on one or more factors such as age, years of service and compensation.

The liability recognised in the statement of financial position in respect of defined benefit retirement plans is the present value of the defined benefit obligation at the end of the reporting period. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using the interest rates of government securities that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related retirement liability.

Remeasurement of gains and losses arising from experienced adjustments and changes in actuarial assumptions are charged or credited to equity in other comprehensive income in the period in which they arise.

Past-service costs are recognised immediately in profit or loss.

Other employee benefits

Other employee benefits of the Indonesian subsidiaries, which consist of long service reward and long leave benefit, are recognised in the consolidated statement of financial position at the present value of the defined benefit obligation. The actuarial gains and losses and the past service costs are recognised immediately in the profit or loss.

Other employee benefits of the Australian subsidiaries, which consist of annual leave, sick leave and long service leave, are paid monthly in accordance with Coal Mining Industry (Long Service Leave Funding Corporation) and recognised as expenses in profit or loss.

2.18 Share-based payment

The Group operates a number of equity-settled, share-based compensation plans, under which the entity receives services from employees as consideration for equity instruments (warrants) of the Group. The fair value of the employee services received in exchange for the grant of the warrants is recognised as an expense. The total amount to be expensed is determined by reference to the fair value of the warrants granted:

- including any market performance conditions;
- excluding the impact of any service and non-market performance vesting conditions (for example, profitability, sales growth targets and remaining an employee of the entity over a specified time period); and
- excluding the impact of any non-vesting conditions (for example, the requirement for employees to save or hold shares for a specific period of time).

Non-market performance and service conditions are included in assumptions about the number of warrants that are expected to vest. The total expense is recognised over the vesting period, which is the period over which all of the specified vesting conditions are to be satisfied. At the end of each reporting period, the entity revises its estimates of the number of warrants that are expected to vest based on the non-marketing vesting conditions. It recognises the impact of the revision to original estimates, if any, in profit or loss, with a corresponding adjustment to equity.

When the warrants are exercised, an entity issues new shares. The proceeds received net of any directly attributable transaction costs are credited to share capital (nominal value) and share premium.

The grant by an entity of warrants over its equity instruments to the employees of subsidiary undertakings in the Group is treated as a capital contribution. The fair value of employee services received, measured by reference to the grant date fair value, is recognised over the vesting period as an increase to investment in subsidiary, in separate financial statements undertakings, with a corresponding credit to equity.

2.19 Provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate of the amount can be made.

Provision for environmental rehabilitation is recognised by units of sale at the rate determined by the Group's geologist. The provisioning rate is based on the estimated cost for mine rehabilitation through to the end of the mine. The Group reviews and revises the rate to reflect the actual expenses incurred on a regular basis.

The Group records a provision for decommissioning costs whenever it is probable that there would be an obligation as a result of a past event and the amount of that obligation is reliably estimated by the Group's engineers and management's judgement. The Group recognises provision for decommissioning costs as part of oil and gas properties, using the discounted present value on the estimated eventual costs that relate to the removal of the production facilities and amortised based on the unit of production of the proved reserve or the proved developed reserve. The Group recognises an increase that reflects the passage of time from the unwinding discount in each period, as a finance cost in profit or loss. The provisions are based on the current situation such as regulations, technologies and prices. The actual results could differ from these estimates as future confirming events occur.

2.20 Current and deferred income taxes

The tax expense for the year comprises current and deferred tax. Tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity. In this case the tax is also recognised in other comprehensive income or directly in equity, respectively.

The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the end of reporting period in the countries where the Company and its subsidiaries operate and generate taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax is recognised, using the liability method, on temporary differences arising from differences between the tax base of assets and liabilities and their carrying amounts in the financial statements. However, the deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. Deferred income tax is determined using tax rates (and laws) that have been enacted or substantially enacted by the end of the reporting period and are expected to apply when the related deferred income tax asset is realised or the deferred income tax liability is settled.

Deferred income tax assets are recognised only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised. Deferred income tax is provided on temporary differences arising from investments in subsidiaries and associates, except where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

2.21 Share capital

Ordinary shares with discretionary dividends are classified as equity.

Incremental external costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

Where any Group company purchases the Company's equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs (net of income taxes) is deducted from equity attributable to the company's equity holders until the shares are cancelled or reissued. Where such shares are subsequently reissued, any consideration received, net of any directly attributable incremental transaction costs and the related income tax effects, is included in equity attributable to the company's equity holders.

2.22 Revenue recognition

Revenue comprises the invoiced value for the sale of goods and services net of value-added tax, rebates, discounts and transportation. Revenue from sales of goods is recognised when significant risks and rewards of ownership of the goods are transferred to the buyer.

Sales of coal are quantified by weight at the mine site. The increment or reduction of coal values as a result of quality and weight noticed by customers will be recorded in the month of goods delivery.

Sales of electricity and steam in accordance with Power Purchase Agreement and Steam Purchase Agreement which is not considered a financial lease are shown net of output tax and discount. Sales will be recognised upon transmission of electricity and steam at delivery points stipulated in Power Purchase Agreement and Steam Purchase Agreement.

Revenues from sales of natural gas are recognised upon transfer of title, according to the terms of related contracts and based on actual volumes sold.

Finance lease income under power purchase agreements is recognised on an effective interest method over the period of the agreement. Rental income from operating lease under power purchase agreements is recognised on a straight-line basis over the period of the agreements.

Service income under finance and operating lease agreements related to power purchase agreements, which comprises servicing income and fuel cost received from leases with respect to the leased assets, is recognised when the services have been rendered. Contingent rents are recognised in the income

statement in the period in which they are incurred. Contingent rent is that portion of lease payments that is not fixed in amount but varies based on a future factor, such as the amount of use or production.

Service income is recognised when services are rendered.

Other revenues are recognised on the following basis:

- Interest income is recognised using the effective interest method.
- Dividend income is recognised when the Group's right to receive payment is established.

2.23 Dividends

Dividends distribution to the Group's shareholders is recognised as a liability in the consolidated and separate financial statements in the period in which the dividends are approved by the shareholders and interim dividends are approved by the Board of Directors.

2.24 Segment reporting

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The Chief Executive Officer is the chief operating decision-maker, responsible for allocating resources, assessing performance of the operating segments, and making strategic decisions.

3 Financial risk management

3.1 Financial risk factors

The Group's activities expose it to a variety of financial risks, including the effects of changes in foreign currency exchange rates, interest rates, coal price, oil price and natural gas price. The Group's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the financial performance of the Group. The Group uses derivative financial instruments such as forward foreign exchange contracts, currency swaps contracts, interest rate swap contracts, coal swap contracts, fuel swap contracts and natural gas swap and options to hedge certain exposure.

Risk management is carried out by a central treasury department under policies approved by the Board of Directors. Group Treasury identifies, evaluates and hedges financial risks in close co-operation with the Group's operating units.

3.2 Foreign exchange rate risk

The Group operates internationally and is exposed to foreign exchange rate risk arising from various currency exposures, primarily with respect to Thai Baht, Indonesian Rupiah, Australian Dollar and Chinese Yuan. The Group uses forward foreign exchange contracts and currency swaps contracts to hedge their

exposure to foreign exchange rate risk in connection with their measurement currency.

3.3 Interest rate risk

The Group manages interest rate risk by closely monitoring the trend of interest rates in the world's markets as well as in Thailand. The Group allocates its debt portfolio in either short and long term contracts or loans with fixed and floating interest rates corresponding to their types of investments. The Company has chosen financial instruments to create an alternative source of funding and to manage its financial structure properly in every country in which it invests. For example, interest rate swaps are being used to manage the proportion of fixed interest rates necessary to meet the market trends.

3.4 Coal price fluctuation risk

The Group is exposed to coal price risk from substantial fluctuations in coal prices in the world market. The Group uses coal swap contracts to minimise its exposure to fluctuations in coal prices in its business operations and maintains on emphasis on a balance of overall coal price in the Group by entering into both short-term and long-term sales agreements.

3.5 Oil price fluctuation risk

The Group is exposed to oil price risk from substantial fluctuations in oil prices in the world market. The Group uses fuel swap contracts to minimise its exposure to fluctuation in oil prices in its business operations of the Group.

3.6 Natural gas price fluctuation risk

The Group is exposed to substantial fluctuations in the price of natural gas price on the world market. The Group uses natural gas swap and options to minimise its exposure to actual prices in its business operations of the Group.

3.7 Credit risk

The Group has no significant concentrations of credit risk. The Group has policies in place to ensure that sales of goods and services are made to customers with an appropriate credit history. Derivative counter parties and cash transactions are limited to high credit quality financial institutions. The Group has policies that limit the amount of credit exposure to any financial institutions.

3.8 Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities, the availability of funding through an adequate amount of credit facilities and the ability to close out market positions. Due to the dynamic nature of the underlying business, Group Treasury aims at maintaining flexibility in funding by keeping credit lines available.

4 Critical accounting estimates and assumptions and judgements

Estimates, assumption and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

During 2018, the Group makes estimates and assumptions concerning the future. The results of accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are outlined below.

Coal reserves

The Group estimates coal reserves based on its best estimate of products that can be economically extracted from the relevant mining area. Estimates are supported by geological studies and drilling samples to determine the reserves.

Estimated impairment of goodwill

The Group annually tests for impairment of goodwill in accordance with the accounting policy stated in Note 2.12. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations use cash flow projections based on financial budgets covering the lives of mine in each country as discussed in Note 18. If the discount rate used in the calculation increases by 0.5% per annum, no impairment of goodwill is recognised in the consolidated financial statements for the year ended 31 December 2018.

Estimated recoverable amounts of prepaid taxes

Prepaid taxes are recognised as assets in the financial statements. The Group considers the recoverable amounts of these prepaid taxes by assessing the evidence, including related taxation law and the conformity of the Group's tax management, tax objection, and tax appeals. However, recoverable amounts of prepaid taxes depend on the tax investigation and decision by the related tax bureau and/or tax court.

Estimate of the fair value of the net identifiable assets acquired from the business acquisitions

Acquisition of an interest in natural gas business

The identification of fair values of the gas exploration and producing assets and proved reserve arising from the business combination is based on valuation techniques and significant judgement and assumptions made by the management. The significant assumptions applied by the management are for example estimated gas price, production volume, capital expenditures, operating costs and discount rate. (Note 35.1)

Acquisition of investment in clean energy business

The identification of fair values of intangible assets which are right in long-term power purchase agreement is based on valuation techniques and significant judgement and assumptions made by the management. The significant assumptions applied by the management are for example selling price per unit, capacity of power plants, growth rate, operating costs, capital expenditures and discount rate. (Note 35.2)

5 Capital risk management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern to provide returns for shareholders and benefits for other stakeholders. And to maintain an optimal capital structure to reduce the cost of capital.

To maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, return capital to shareholders, issue new shares or sell assets to reduce debt.

6 Segment Information

Consolidated financial statements										
US Dollar'000										
	Coal			Power			Natural gas	Total	Eliminated entries	Total
	Thailand	Republic of Indonesia	Australia	People's Republic of China and Mongolia	Thailand	People's Republic of China	Lao People's Democratic Republic	Japan	The United States of America	Head Office
For the year ended										
31 December 2018										
Quantity of coal sales										
(unit : thousand tons)										
	1,697	22,314	13,702	314	-	-	-	-	-	38,027
										38,027
Sales and service income	158,946	2,015,134	1,039,260	21,617	-	196,182	-	-	143,734	1,238
Cost of sales and services	(136,613)	(1,188,444)	(768,326)	(20,646)	-	(156,628)	-	-	(75,746)	(1,218)
Gross profit	22,333	826,690	270,934	971	-	39,554	-	-	67,988	20
Gross profit margin (%)	14%	41%	26%	4%		20%			47%	2%
Share of profit (loss) from joint ventures and associates	-	-	696	117,891	41,925	(578)	105,872	945	-	(3,089)
Selling expenses	(7,928)	(104,129)	(68,713)	(868)	-	-	-	-	-	(828)
Administrative expenses	-	(28,340)	(15,282)	(5,031)	(7,086)	(19,354)	-	(3,706)	(20,399)	(62,334)
Indemnity payment	-	-	-	-	(28,809)	-	-	-	-	(57,240)
Royalty fee	-	(234,611)	(56,329)	-	-	-	-	-	-	-
Interest income	108,872	4,850	800	36	7,745	3,725	-	1	20,721	77,030
Profit (loss) from operation										
before interest expenses										
and income taxes	123,277	464,460	132,106	112,999	13,775	23,347	105,872	(2,760)	68,310	(46,441)
										994,945
										(212,963)
										781,982

* Revenue is allocated to the geographic areas where the sale originated and there is no customer who generates significant revenue to the Group.

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Consolidated financial statements
US Dollar'000

	Coal				Power			Natural gas		Total	Eliminated entails	Total
	Thailand	Republic of Indonesia	Australia	People's Republic of China and Mongolia	Thailand	People's Republic of China	Lao People's Democratic Republic	Japan	The United States of America	Head Office		
For the year ended												
31 December 2017												
Quantity of coal sales												
(unit : thousand tons)	2,633	20,474	13,187	339	-	-	-	-	-	-	-	36,633
Sales and service income	197,531	1,695,053	882,503	29,443	2	189,218	-	-	36,958	16	(154,086)	2,876,638
Cost of sales and services	(174,129)	(970,789)	(581,859)	(27,798)	(1)	(143,870)	-	-	(23,725)	(7)	155,763	(1,766,415)
Gross profit	23,402	724,264	300,644	1,645	1	45,348	-	-	13,233	9	1,677	1,110,223
Gross profit margin (%)	12%	43%	34%	6%	50%	24%			36%	56%		39%
Share of profit (loss) from joint ventures and associates	-	-	-	94,841	43,004	(1,080)	66,257	(54)	-	1,695	-	204,663
Selling expenses	(6,988)	(70,299)	(83,146)	(38)	-	-	-	-	-	-	-	(160,471)
Administrative expenses	-	(29,012)	(14,167)	(8,652)	(7,081)	(18,265)	-	(1,481)	(10,884)	(43,515)	2,073	(130,984)
Royalty fee	-	(212,721)	(55,561)	-	-	-	-	-	-	-	-	(268,282)
Interest income	83,446	3,387	132	57	8,446	3,697	-	1	7,583	71,696	(172,717)	5,728
Profit (loss) from operation												
before interest expenses												
and income taxes	99,860	415,619	147,902	87,853	44,370	29,700	66,257	(1,534)	9,932	29,885	(168,967)	760,877

* Revenue is allocated to the geographic areas where the sale originated and there is no customer who generates significant revenue to the Group.

[illegible]

Consolidated financial statements
Bant'000

	Coal				Power				Natural gas				
	Thailand	Republic of Indonesia	Australia	People's Republic of China and Mongolia	Thailand	People's Republic of China	Lao People's Democratic Republic	Japan	The United States of America	Head Office	Total	Eliminated entates	Total
For the year ended													
31 December 2018													
Quantity of coal sales													
(unit : thousand tons)	1,697	22,314	13,702	314	-	-	-	-	-	-	38,027	-	38,027
Sales and service income	5,142,666	65,349,235	33,607,227	703,682	-	6,322,461	-	-	4,657,798	40,615	115,823,684	(3,053,165)	112,770,519
Cost of sales and services	(4,416,923)	(38,528,606)	(24,857,009)	(672,092)	-	(5,050,673)	-	-	(2,449,219)	(39,960)	(76,014,482)	3,053,605	(72,960,877)
Gross profit	725,743	26,820,629	8,750,218	31,590	-	1,271,788	-	-	2,208,579	655	39,809,202	440	39,809,642
Gross profit margin (%)	14%	41%	26%	4%		20%			47%	2%	34%		35%
Share of profit (loss) from joint ventures and associates	-	-	22,843	3,809,843	1,340,126	(18,410)	3,414,706	31,274	-	(100,408)	8,499,974	-	8,499,974
Selling expenses	(256,732)	(3,382,851)	(2,212,830)	(28,390)	-	-	-	-	-	(26,818)	(5,907,621)	27,944	(5,879,677)
Administrative expenses	-	(917,748)	(492,970)	(162,366)	(229,245)	(626,446)	-	(120,546)	(653,902)	(2,022,104)	(5,225,327)	53,396	(5,171,931)
Indemnity payment	-	-	-	-	(908,656)	-	-	-	-	(1,805,423)	(2,714,079)	-	(2,714,079)
Royalty fee	-	(7,607,467)	(1,822,142)	-	-	-	-	-	-	-	(9,429,609)	-	(9,429,609)
Interest income	3,519,552	157,310	26,163	1,167	250,256	120,238	-	42	669,801	2,490,766	7,235,295	(6,965,533)	269,762
Profit (loss) from operation													
before interest expenses and income taxes	3,988,563	15,069,873	4,271,282	3,651,844	452,841	747,170	3,414,706	(89,230)	2,224,478	(1,463,332)	32,267,835	(6,883,753)	25,384,082

* Revenue is allocated to the geographic areas where the sale originated and there is no customer who generates significant revenue to the Group.

Consolidated financial statements

Consolidated financial statements
Baht'000

	Coal				Power			Natural gas	Head Office	Total	Eliminated entities	Total
	Thailand	Republic of Indonesia	Australia	People's Republic of China and Mongolia	Thailand	People's Republic of China	Lao People's Democratic Republic	Japan	The United States of America			
For the year ended												
31 December 2017												
Quantity of coal sales												
(unit : thousand tons)	2,633	20,474	13,187	339	-	-	-	-	-	36,633	-	36,633
Sales and service income	6,697,466	57,349,488	29,856,303	979,196	64	6,421,391	-	-	1,248,040	532	(5,228,721)	97,323,759
Cost of sales and services	(5,905,444)	(32,850,561)	(19,711,491)	(924,828)	(51)	(4,880,665)	-	-	(800,733)	(217)	5,281,628	(59,792,362)
Gross profit	792,022	24,498,927	10,144,812	54,368	13	1,540,726	-	-	447,307	315	52,907	37,531,397
Gross profit margin (%)	12%	43%	34%	6%	20%	24%	-	-	36%	59%	37%	39%
Share of profit (loss) from joint ventures and associates	-	-	-	3,216,715	1,485,078	(36,355)	2,243,107	(2,000)	-	59,166	-	6,965,711
Selling expenses	(236,688)	(2,383,347)	(2,814,274)	(1,260)	-	-	-	-	-	-	-	(5,435,569)
Administrative expenses	-	(978,497)	(481,813)	(293,955)	(240,055)	(618,239)	-	(49,979)	(364,694)	(1,468,910)	70,845	(4,425,297)
Royalty fee	-	(7,198,080)	(1,878,433)	-	-	-	-	-	-	-	-	(9,076,513)
Interest income	2,828,036	114,795	4,433	1,940	286,184	125,011	-	22	255,600	2,432,196	(5,854,029)	194,188
Profit (loss) from operation												
before interest expenses												
and income taxes	3,383,370	14,053,798	4,974,725	2,977,808	1,531,220	1,011,143	2,243,107	(51,957)	338,213	1,022,767	(5,730,277)	25,753,917

* *Revenue is allocated to the geographic areas where the sale originated and there is no customer who generates significant revenue to the Group.

[illegible]

7 Fair value estimation

The following table presents the Group's financial assets and liabilities that are measured at fair value at 31 December 2018.

	Consolidated financial statements			
	Level 1 US Dollar'000	Level 2 US Dollar'000	Level 3 US Dollar'000	Total US Dollar'000
Assets				
Financial derivative assets recognised at fair value through profit or loss				
- Interest rate swap	-	524	-	524
- Foreign exchange rate forward	-	70	-	70
- Natural gas swap and options	-	2,387	-	2,387
Derivatives used for hedging				
- Interest rate swap	-	2,660	-	2,660
- Foreign exchange rate forward	-	11,646	-	11,646
- Coal swap	-	437	-	437
Available-for-sale investments				
- Equity securities	8,282	-	-	8,282
Total assets	8,282	17,724	-	26,006
Liabilities				
Financial derivative liabilities recognised at fair value through profit or loss				
- Foreign exchange rate forward	-	182	-	182
Derivatives used for hedging				
- Interest rate swap	-	6,435	-	6,435
- Foreign exchange rate forward	-	1,968	-	1,968
- Cross currency and interest rate swap	-	12,540	-	12,540
- Fuel swap	-	413	-	413
- Coal swap	-	1,492	-	1,492
Total liabilities	-	23,030	-	23,030

	Consolidated financial statements			
	Level 1 Baht'000	Level 2 Baht'000	Level 3 Baht'000	Total Baht'000
Assets				
Financial derivative assets recognised at fair value through profit or loss				
- Interest rate swap	-	16,987	-	16,987
- Foreign exchange rate forward	-	2,261	-	2,261
- Natural gas swap and options	-	77,441	-	77,441
Derivatives used for hedging				
- Interest rate swap	-	86,320	-	86,320
- Foreign exchange rate forward	-	377,908	-	377,908
- Coal swap	-	14,196	-	14,196
Available-for-sale investments				
- Equity securities	268,739	-	-	268,739
Total assets	268,739	575,113	-	843,852
Liabilities				
Financial derivative liabilities recognised at fair value through profit or loss				
- Foreign exchange rate forward	-	5,922	-	5,922
Derivatives used for hedging				
- Interest rate swap	-	208,825	-	208,825
- Foreign exchange rate forward	-	63,866	-	63,866
- Cross currency and interest rate swap	-	406,918	-	406,918
- Fuel swap	-	13,388	-	13,388
- Coal swap	-	48,400	-	48,400
Total liabilities	-	747,319	-	747,319

	Separate financial statements			
	Level 1	Level 2	Level 3	Total
	US Dollar'000	US Dollar'000	US Dollar'000	US Dollar'000
Assets				
Financial derivative assets recognised at fair value through profit or loss				
- Foreign exchange rate forward	-	70	-	70
Derivatives used for hedging				
- Interest rate swap	-	2,660	-	2,660
- Foreign exchange rate forward	-	11,646	-	11,646
Available-for-sale investments				
- Equity securities	5,926	-	-	5,926
Total assets	5,926	14,376	-	20,302
Liabilities				
Financial derivative liabilities recognised at fair value through profit or loss				
- Foreign exchange rate forward	-	182	-	182
Derivatives used for hedging				
- Interest rate swap	-	4,812	-	4,812
- Cross currency and interest rate swap	-	12,540	-	12,540
Total liabilities	-	17,534	-	17,534

	Separate financial statements			
	Level 1 Baht'000	Level 2 Baht'000	Level 3 Baht'000	Total Baht' 000
Assets				
Financial derivative assets recognised at fair value through profit or loss				
- Foreign exchange rate forward	-	2,261	-	2,261
Derivatives used for hedging				
- Interest rate swap	-	86,320	-	86,320
- Foreign exchange rate forward	-	377,908	-	377,908
Available-for-sale investments				
- Equity securities	192,297	-	-	192,297
Total assets	192,297	466,489	-	658,786
Liabilities				
Financial derivative liabilities recognised at fair value through profit or loss				
- Foreign exchange rate forward	-	5,922	-	5,922
Derivatives used for hedging				
- Interest rate swap	-	156,147	-	156,147
- Cross currency and interest rate swap	-	406,918	-	406,918
Total liabilities	-	568,987	-	568,987

The following table presents the Group's financial assets and liabilities that are measured at fair value at 31 December 2017.

	Consolidated financial statements			
	Level 1 US Dollar'000	Level 2 US Dollar'000	Level 3 US Dollar'000	Total US Dollar'000
Assets				
Financial derivative assets recognised at fair value through profit or loss				
- Interest rate swap	-	275	-	275
- Foreign exchange rate forward	-	8	-	8
- Natural gas swap	-	390	-	390
Derivatives used for hedging				
- Interest rate swap	-	903	-	903
- Foreign exchange rate forward	-	924	-	924
- Cross currency and interest rate swap	-	9,650	-	9,650
- Coal swap	-	404	-	404
Available-for-sale investments				
- Equity securities	11,496	-	-	11,496
Total assets	11,496	12,554	-	24,050
Liabilities				
Financial derivative liabilities recognised at fair value through profit or loss				
- Interest rate swap	-	45	-	45
- Foreign exchange rate forward	-	945	-	945
Derivatives used for hedging				
- Interest rate swap	-	6,934	-	6,934
- Cross currency and interest rate swap	-	22,235	-	22,235
- Coal swap	-	453	-	453
Total liabilities	-	30,612	-	30,612

Consolidated financial statements				
	Level 1	Level 2	Level 3	Total
	Baht' 000	Baht' 000	Baht' 000	Baht' 000
Assets				
Financial derivative assets recognised at fair value through profit or loss				
- Interest rate swap	-	9,000	-	9,000
- Foreign exchange rate forward	-	271	-	271
- Natural gas swap	-	12,743	-	12,743
Derivatives used for hedging				
- Interest rate swap	-	29,513	-	29,513
- Foreign exchange rate forward	-	30,181	-	30,181
- Cross currency and interest rate swap	-	315,356	-	315,356
- Coal swap	-	13,227	-	13,227
Available-for-sale investments				
- Equity securities	375,689	-	-	375,689
Total assets	375,689	410,291	-	785,980
Liabilities				
Financial derivative liabilities recognised at fair value through profit or loss				
- Interest rate swap	-	1,460	-	1,460
- Foreign exchange rate forward	-	30,883	-	30,883
Derivatives used for hedging				
- Interest rate swap	-	226,595	-	226,595
- Cross currency and interest rate swap	-	726,691	-	726,691
- Coal swap	-	14,798	-	14,798
Total liabilities	-	1,000,427	-	1,000,427

	Separate financial statements			
	Level 1	Level 2	Level 3	Total
	US Dollar'000	US Dollar'000	US Dollar'000	US Dollar'000
Assets				
Financial derivative assets recognised at fair value through profit or loss				
- Foreign exchange rate forward	-	8	-	8
Derivatives used for hedging				
- Interest rate swap	-	903	-	903
- Cross currency and interest rate swap	-	9,650	-	9,650
Available-for-sale investments				
- Equity securities	8,126	-	-	8,126
Total assets	8,126	10,561	-	18,687
Liabilities				
Financial derivative liabilities recognised at fair value through profit or loss				
- Interest rate swap	-	45	-	45
- Foreign exchange rate forward	-	945	-	945
Derivatives used for hedging				
- Interest rate swap	-	6,268	-	6,268
- Cross currency and interest rate swap	-	22,235	-	22,235
Total liabilities	-	29,493	-	29,493

	Separate financial statements			
	Level 1 Baht 000	Level 2 Baht 000	Level 3 Baht 000	Total Baht 000
Assets				
Financial derivative assets recognised at fair value through profit or loss				
- Foreign exchange rate forward	-	271	-	271
Derivatives used for hedging				
- Interest rate swap	-	29,513	-	29,513
- Cross currency and interest rate swap	-	315,356	-	315,356
Available-for-sale investments				
- Equity securities	265,553	-	-	265,553
Total assets	265,553	345,140	-	610,693
Liabilities				
Financial derivative liabilities recognised at fair value through profit or loss				
- Interest rate swap	-	1,460	-	1,460
- Foreign exchange rate forward	-	30,883	-	30,883
Derivatives used for hedging				
- Interest rate swap	-	204,843	-	204,843
- Cross currency and interest rate swap	-	726,691	-	726,691
Total liabilities	-	963,877	-	963,877

There were no transfer between Level 1, 2 and 3 during the year.

(a) Financial instruments in level 1

The fair value of financial instruments traded in active markets is based on quoted market prices on the statement of financial position date referring to the Stock Exchange of Thailand and Australian Securities Exchange. The quoted market price used for financial assets held by the Group is the closing price. These instruments are included in Level 1.

(b) Financial instruments in level 2

The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined by using valuation techniques. These valuation techniques maximise the use of observable market data where it is available and rely as little as possible on entity specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in level 2.

Specific valuation techniques used to value financial instruments include:

- Quoted market prices or dealer quotes for similar instruments.
- The fair value of interest rate swaps is calculated as the present value of the estimated future cash flows based on observable yield curves.
- The fair value of forward foreign exchange contracts is determined by using forward exchange rates on the statement of financial position date, with the resulting value discounted back to present value.
- The fair value of coal and fuel swap is determined by using forward price on the statement of financial position date, with the resulting value discounted back to present value.
- Other techniques, such as discounted cash flow analysis, are used to determine fair value for the remaining financial instruments.

(c) Financial instruments in level 3

The Group has no financial instrument in level 3.

8 Cash and cash equivalents

As at 31 December, cash and cash equivalents consist of:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Cash on hand	555	4,098	18,009	133,933
Deposits held at call with banks	310,733	353,874	10,083,223	11,564,908
Fixed deposits with banks	296,056	325,104	9,606,968	10,624,690
Total cash and cash equivalents	607,344	683,076	19,708,200	22,323,531

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Cash on hand	18	16	595	535
Deposits held at call with banks	28,295	40,798	918,157	1,333,296
Total cash and cash equivalents	28,313	40,814	918,752	1,333,831

As at 31 December 2018, the interest rates on deposits held at call with banks were 0.35% to 1.80% per annum (2017: 0.30% to 1.30% per annum).

As at 31 December 2018, the interest rates on fixed deposits with banks were 0.75% to 8.00% per annum (2017: 0.75% to 5.00% per annum). These fixed deposits have an original maturities of three months.

9 Trade accounts receivable and notes receivable, net

As at 31 December, trade accounts receivable and notes receivable consist of:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Trade accounts receivable - third parties	395,701	322,011	12,840,436	10,523,616
Notes receivable	523	418	16,963	13,671
Total trade accounts receivable and notes receivable	396,224	322,429	12,857,399	10,537,287
<u>Less</u> Allowance for doubtful accounts	(1,493)	(1,493)	(48,461)	(48,806)
Trade accounts receivable and notes receivable, net	394,731	320,936	12,808,938	10,488,481

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Trade accounts receivable – third parties	19,020	16,629	617,205	543,440
Total trade accounts receivable	19,020	16,629	617,205	543,440

Trade accounts receivable and notes receivable are aged as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Trade accounts receivable and notes receivable under credit term	314,289	287,210	10,198,611	9,386,276
Trade accounts receivable due for payment				
- Less than 3 months	75,655	33,341	2,455,007	1,089,617
- Over 3 months but less than 6 months	4,387	371	142,353	12,132
- Over 6 months but less than 12 months	386	-	12,514	-
- Over 12 months	1,507	1,507	48,914	49,262
Total trade accounts receivable and notes receivable	396,224	322,429	12,857,399	10,537,287
<u>Less</u> Allowance for doubtful accounts	(1,493)	(1,493)	(48,461)	(48,806)
Trade accounts receivable and notes receivable, net	394,731	320,936	12,808,938	10,488,481

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Trade accounts receivable under credit term	16,732	16,143	542,957	527,562
Trade accounts receivable due for payment				
- Less than 3 months	2,288	486	74,248	15,878
- Over 3 months but less than 6 months	-	-	-	-
- Over 6 months but less than 12 months	-	-	-	-
- Over 12 months	-	-	-	-
Total trade accounts receivable	19,020	16,629	617,205	543,440

10 Inventories, net

As at 31 December, inventories consist of:

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Coal	103,643	61,239	3,363,182	2,001,341
Fuel	24,860	56,162	806,708	1,835,414
Others	1	1,227	37	40,110
Coal in transits	29,238	14,530	948,771	474,843
Total	157,742	133,158	5,118,698	4,351,708
<u>Less</u> Allowance for slow-moving of coal	(4,069)	(4,069)	(132,029)	(132,969)
Allowance for net realisable value of fuel	(4,041)	-	(131,147)	-
Inventories, net	149,632	129,089	4,855,522	4,218,739

Separate financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Coal	11,715	10,142	380,162	331,455
<u>Less</u> Allowance for slow-moving of coal	(3,854)	(3,854)	(125,071)	(125,962)
Inventories, net	7,861	6,288	255,091	205,493

11 Derivative financial instruments

Consolidated financial statements				
	US Dollar'000		Baht'000	
	Assets	Liabilities	Assets	Liabilities
As at 31 December 2018				
Interest rate swap contracts	3,184	6,435	103,307	208,825
Foreign exchange rate forward contracts	70	2,151	2,262	69,787
Cross currency and interest rate swaps contracts	11,646	12,540	377,908	406,919
Coal swap contracts	437	1,491	14,196	48,400
Fuel swap contracts	-	413	-	13,388
Natural gas swap and options contracts	2,387	-	77,440	-
Total derivative financial instruments	17,724	23,030	575,113	747,319
<u>Less</u> Non-current portion:				
Interest rate swaps contracts	(2,979)	(5,903)	(96,665)	(191,548)
Cross currency and interest rate swaps contracts	(8,146)	(12,540)	(264,323)	(406,918)
Total non-current portion	(11,125)	(18,443)	(360,988)	(598,466)
Total current portion	6,599	4,587	214,125	148,853
As at 31 December 2017				
Interest rate swaps contracts	1,178	6,979	38,513	228,055
Foreign exchange rate forward contracts	932	945	30,452	30,883
Cross currency and interest rate swaps contracts	9,650	22,235	315,356	726,691
Coal swap contracts	404	453	13,227	14,798
Natural gas swap contracts	390	-	12,743	-
Total derivative financial instruments	12,554	30,612	410,291	1,000,427
<u>Less</u> Non-current portion:				
Interest rate swaps contracts	(1,170)	(6,268)	(38,250)	(204,843)
Cross currency and interest rate swaps contracts	(9,650)	(14,626)	(315,356)	(478,001)
Natural gas swap contracts	(3)	-	(109)	-
Total non-current portion	(10,823)	(20,894)	(353,715)	(682,844)
Total current portion	1,731	9,718	56,576	317,583

	Separate financial statements			
	US Dollar'000		Baht'000	
	Assets	Liabilities	Assets	Liabilities
As at 31 December 2018				
Interest rate swap contracts	2,660	4,812	86,320	156,146
Foreign exchange rate forward contracts	70	182	2,262	5,922
Cross currency and interest rate swap contracts	11,646	12,540	377,907	406,919
Total derivative financial instruments	14,376	17,534	466,489	568,987
<u>Less</u> Non-current portion:				
Interest rate swaps contracts	(2,455)	(4,812)	(79,678)	(156,146)
Cross currency and interest rate swap contracts	(8,146)	(12,540)	(264,323)	(406,919)
Total non-current portion	(10,601)	(17,352)	(344,001)	(563,065)
Total current portion	3,775	182	122,488	5,922
As at 31 December 2017				
Interest rate swaps contracts	903	6,313	29,513	206,303
Foreign exchange rate forward contracts	8	945	271	30,883
Cross currency and interest rate swaps contracts	9,650	22,235	315,356	726,691
Total derivative financial instruments	10,561	29,493	345,140	963,877
<u>Less</u> Non-current portion:				
Interest rate swaps contracts	(895)	(6,268)	(29,250)	(204,843)
Cross currency and interest rate swaps contracts	(9,650)	(14,626)	(315,356)	(478,001)
Total non-current portion	(10,545)	(20,894)	(344,606)	(682,844)
Total current portion	16	8,599	534	281,033

The fair value of derivative financial instruments is in Level 2 that are not traded in an active market. These valuation techniques are disclosed in Note 7.

The Group manages the risks by using the instruments as follows:

Foreign exchange rate forward contracts

As at 31 December 2018, the Group had foreign exchange rate forward contracts amounting to US Dollar 158.00 million at the exchange rate of Australian Dollar 0.7020 to 0.7603 per US Dollar 1 and US Dollar 53.94 million at the exchange rate of Baht 32.2740 to 32.7140 per US Dollar 1 (2017: US Dollar 69.00 million at the exchange rate of Australian Dollar 0.7429 to 0.7800 per US Dollar 1 and US Dollar 78.56 million at the exchange rate of Baht 32.5420 to 33.0875 per US Dollar 1).

Cross currency and interest rate swap contracts

As at 31 December 2018, the Group had cross currency and interest rate swap contracts with the financial institutions to manage exposure of fluctuations in foreign currency exchange rates and interest rates for the debentures from Baht 14,596.93 million to be US Dollar 461.49 million at fixed interest rates, starting from 10 June 2011 to 1 April 2026 (2017: Baht 20,096.93 million to be US Dollar 639.35 million at fixed interest rates, starting from 10 June 2011 to 1 April 2026).

Interest rate swap contracts

As at 31 December 2018, the Group had interest rate swap contracts with the financial institutions to manage exposure of fluctuations in interest rates for the borrowings of US Dollar 940 million and Australian Dollar 120 million (2017: US Dollar 460 million and Australian Dollar 120 million) by converting floating interest rates to fixed interest rates, starting from 16 July 2013 to 26 June 2025.

Coal swap contracts

As at 31 December 2018, the Group had coal swap contracts with no physical delivery of selling and buying side of 600,000 tons at the rates between US Dollar 88.00 to 108.25 per ton. (2017: 285,000 tons at the rates between US Dollar 85.00 to 96.00 per ton). Such contracts are due within 1 year.

Fuel swap contracts

As at 31 December 2018, the Group had fuel swap contracts with no physical delivery of selling and buying side of 120,000 barrels at the rates between US Dollar 68.25 to 73.00 per barrel. (2017: the Group had no balance of fuel swap contracts). Such contracts are due within 1 year.

Natural gas swap and options contracts

As at 31 December 2018, the Group had natural gas swap and options contracts with no physical delivery of selling and buying side of 40,005,000 MMBTU at the rates between US Dollar 2.77 to 3.65 per MMBTU. (2017: 5,110,000 MMBTU at the rates between US Dollar 2.65 to 3.50 per MMBTU). Such contracts are due within 1 year.

12 Other current assets

Other current assets consist of:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Prepaid expenses	24,133	22,433	783,099	733,120
Advance for prepayment	32,095	29,047	1,041,479	949,291
Value added tax receivables	20,102	11,279	652,315	368,592
Prepaid income tax	3,946	4,794	128,032	156,681
Restricted deposits at banks	8,910	-	289,140	-
Other receivables	65,827	78,522	2,136,082	2,566,154
Others	889	6,145	28,865	200,864
Total other current assets	155,902	152,220	5,059,012	4,974,702

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Prepaid expenses	979	261	31,757	8,529
Accrued interest income	8	13	271	419
Value added tax receivables	237	67	7,704	2,188
Prepaid income tax	388	372	12,592	12,160
Other receivables	2,134	896	69,309	29,283
Others	10	5	317	164
Total other current assets	3,756	1,614	121,950	52,743

13 Investments in subsidiaries, associates and joint ventures

As at 31 December, investments in associates and joint ventures are as follows:

	Consolidated financial statements (Equity method)			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Joint ventures				
BLCP Power Ltd.	187,649	186,322	6,089,170	6,089,170
BPPR Co., Ltd.	17	2	555	75
Hebi Zhong Tai Mining Co., Ltd.	48,320	48,320	1,567,987	1,579,153
Shanxi Gaohe Energy Co., Ltd.	308,933	308,933	10,024,805	10,096,200
Shanxi Luguang Power Co., Ltd.	43,081	35,053	1,397,966	1,145,548
Hongsa Power Company Limited	403,470	400,617	13,092,534	13,092,534
Phu Fai Mining Company Limited	26	26	836	836
Aura Land Development Pte. Ltd.	2,875	2,855	93,290	93,290
Aizu Energy Pte. Ltd.	24,287	23,224	788,113	758,977
Hokkaido Solar Estate G.K.	1,861	1,848	60,396	60,396
Springvale Coal Sales Pty Limited	289	320	9,380	10,463
Sunseap Group Pte. Ltd.	88,293	55,786	2,865,085	1,823,142
Digital Energy Solutions Corporation	158	-	5,129	-
PT. Nusantara Timur Unggul	491	-	15,926	-
Associates				
Port Kembla Coal Terminal Ltd.	83	92	2,707	3,020
Urban Mobility Tech Co., Ltd.	770	765	25,000	25,000
Durapower Holdings Pte. Ltd. (formerly named "New Resources Technology Pte. Ltd.")	34,174	-	1,108,951	-
Investments in joint ventures and associates - cost method	1,144,777	1,064,163	37,147,830	34,777,804
<u>Add</u> Cumulative equity account of investments in joint ventures and associates	229,342	106,263	7,442,041	3,472,785
Total investments in joint ventures and associates	1,374,119	1,170,426	44,589,871	38,250,589

As at 31 December 2018, under the condition of loans for project finance of joint ventures, the Group pledged its investments in a subsidiary and three joint ventures with a cost of Baht 12,010.76 million and US Dollar 370.82 million (2017: Baht 12,010.76 million and US Dollar 370.82 million), as collateral for loans from financial institutions of such joint ventures.

	Separate financial statements (Cost Method)			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Subsidiaries				
Banpu Minerals Co., Ltd.	102,434	102,434	3,323,973	3,347,646
BP Overseas Development Co., Ltd.	517,963	517,963	16,807,799	16,927,500
Banpu Power Public Company Limited	687,293	687,432	22,302,524	22,465,906
Banpu Engineering Services Co., Ltd.	7,787	7,787	252,702	254,501
BOG Co., Ltd.	43,679	43,679	1,417,370	1,427,464
Banpu International Limited	7,260	7,260	235,568	237,246
Banpu Infinergy Co., Ltd.	17,834	17,834	578,704	582,825
Total investments in subsidiaries	1,384,250	1,384,389	44,918,640	45,243,088

13.1 Changes in investments in subsidiaries, associates and joint ventures

Movements of investments in associates and joint ventures for the years ended 31 December are as follows:

	Consolidated financial statements (Equity method)			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening net book value	1,170,426	891,031	38,250,589	31,926,257
Additional of investments	77,824	65,012	2,514,536	2,206,366
Disposal of a joint venture	-	(2,257)	-	(76,600)
Dividend received from joint ventures	(126,179)	(100,296)	(4,076,921)	(3,403,830)
<u>Add</u> Share of profit from joint ventures and associates during the years	263,662	204,663	8,499,974	6,965,711
Share of other comprehensive income (expense) from joint ventures and associates during the year:				
- Cash flow hedge reserve	5,139	4,254	169,311	187,054
- Remeasurement of post-employment benefit obligations	(2)	(24)	-	-
- Translation differences	(16,751)	108,043	(767,618)	445,631
Closing balance	1,374,119	1,170,426	44,589,871	38,250,589

Movements of investments in subsidiaries for the years ended 31 December are as follows:

	Separate financial statements (Cost method)			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	1,384,389	1,367,050	45,243,088	48,982,374
Additional of investments	-	17,640	-	598,653
Share-based payment of a subsidiary	(139)	(301)	(4,496)	(10,207)
Translation differences	-	-	(319,952)	(4,327,732)
Closing balance	1,384,250	1,384,389	44,918,640	45,243,088

a) Increases in investments

Consolidated financial statements

Digital Energy Solutions Corporation

On 14 February 2018, the Group invested in Digital Energy Solutions Corporation (DES), which is a limited company in Japan and its business objective is to invest in solar power business in Japan at the consideration of JPY 17.50 million or equivalent to US Dollar 0.16 million. The Group owns 35% of the shareholding in such joint venture. The Group fully paid for this investment, which is classified as an investment in a joint venture, because the shareholder agreement determines the management structure including strategic financial decisions and operations which required unanimous votes from all shareholders and their representatives.

Sunseap Group Pte. Ltd.

On 14 September 2017, the Group acquired the newly issued preference shares of Sunseap Group Pte. Ltd. (Sunseap), a limited company in the Republic of Singapore, at the consideration of Singapore Dollar 75 million or equivalent to US Dollar 55.79 million, so the Group has a 28.86% shareholding in Sunseap. The Group fully paid for this investment, which is classified as an investment in a joint venture as described in Note 35.2

On 28 February 2018 and 14 June 2018, the Group acquired additional investment in Sunseap at the total consideration of Singapore Dollar 43.21 million, equivalent to US Dollar 32.51 million. As a result, the Group has a 40.74% shareholding in Sunseap. The Group fully paid for the investment, which is classified as an investment in a joint venture as described in Note 35.2

Sunseap subsequently issued newly shares to third parties, therefore, the Group's shareholding decreased to 38.46%.

Durapower Holdings Pte. Ltd. (formerly named “New Resources Technology Pte. Ltd.”)

On 7 March 2018, the Group invested in Durapower Holding Pte. Ltd., which is a limited company in Singapore at the consideration of Singapore Dollar 45.10 million or equivalent to US Dollar 34.17 million. The Group owns 47.68% of shareholding in such company. The Group fully paid for this investment, which is classified as an investment in an associate as described in Note 35.3.

Shanxi Luguang Power Co., Ltd.

On 30 April 2018, the Group invested in Shanxi Luguang Power Co., Ltd., a joint venture, in the same proportion of shareholding at the consideration of CNY 67.50 million or equivalent to USD 9.57 million. The Group fully paid for this investment.

PT. Nisantara Timur Unggul

On 15 August 2018, the Group acquired an investment in PT. Nusantara Timur Unggul, which is a limited company in Indonesia at the consideration of Indonesian Rupiah 7,718 million or equivalent to US Dollar 0.49 million. As a result, the Group has a 33.34% shareholding of its registered shares.

Aizu Energy Pte. Ltd.

On 30 March 2017, the Group has additionally invested in Aizu Energy Pte. Ltd., a joint venture, in the same proportion of shareholding. The Group converted short-term loans to a related party totalling JPY 934.20 million or equivalent to US Dollar 8.46 million to investment in such joint venture.

On 21 December 2018, the Group additionally acquired an investment in Aizu Energy Pte. Ltd., a joint venture, in the same portion of shareholding at the consideration of Yen 100.13 million or equivalent to US Dollar 0.90 million. The Group fully paid for this investment.

Urban Mobility Tech Co., Ltd.

On 28 November 2017, the Group acquired newly issued shares of Urban Mobility Tech Co., Ltd., a limited company registered in Thailand at the consolidation of Baht 25 million an equivalent to US Dollar 0.76 million, so the Group has 22.50% shareholding in this company. The Group fully paid for this investment, which is classified as an investment in an associate.

Separate financial statements

On 21 February 2017, the Company additionally invested in Banpu Infinergy Co., Ltd., a subsidiary, totalling US Dollar 17.64 million in the same proportion of shareholding. The Company fully paid for this investment.

b) Disposal of an indirect joint venture*Consolidated financial statements*

On 16 November 2017, the Group disposed all investment in Ratchasima Green Energy Co., Ltd. which is a joint venture of the Group to third party. As a result, the Group recognised gains on disposal of such investment of US Dollar 2.36 million in the consolidated statement of comprehensive income for the year ended 31 December 2017.

c) Dividend income from joint ventures

In 2018, dividend income from joint ventures was from BLCP Power Ltd., Hongsa Power Company Limited, Shanxi Gaohe Energy Company Limited, Phu Fai Mining Company Limited and Hebi Zhong Tai Mining Co., Ltd., and Hokkaido Solar Estate G.K. amounting to US Dollar 32.72 million, US Dollar 30.13 million, US Dollar 48.86 million, US Dollar 10.91 million, US Dollar 1.90 million, US Dollar 1.66 million, respectively (2017: from BLCP Power Ltd., Hongsa Power Company Limited and Shanxi Gaohe Energy Company Limited amounting to amounting to US Dollar 44.63 million, US Dollar 28.60 million, and US Dollar 27.07 million, respectively).

Regarding the dividend income from Hongsa Power Company Limited, Banpu Power Public Company Limited, a subsidiary, has provided the Standby Letters of Credit, issued by commercial banks under the subsidiary's name amounting to Baht 1,120 million or equivalent to US Dollar 34.51 million and US Dollar amounting to 22 million to guarantee long-term loans from a financial institutions of Hongsa Power Company Limited.

13.2 Material subsidiaries

As at 31 December, the Group had the following significant subsidiaries:

Name of company	Country	Business	Proportion of ordinary shares held by the Group (%)		Proportion of ordinary shares held by non-controlling interests (%)	
			2018	2017	2018	2017
PT. Indo Tambangraya Megah Tbk. and its subsidiaries	Republic of Indonesia	Investment in coal mining	67.13	67.13	32.87	32.87
Banpu Australia Co., Pty Ltd. and its subsidiaries	Australia	Investment in coal mining	100.00	100.00	-	-
Banpu Power Public Company Limited and its subsidiaries	Thailand	Investment in power business	78.57	78.64	21.43	21.36

List of subsidiaries of the Group is disclosed in Note 13.6.

13.3 Non-controlling interests

Set out below are the summarised financial information for each subsidiary that has non-controlling interests that are material to the Group. The amounts disclosed for each subsidiary are before inter-company eliminations.

Summarised statement of financial position

US Dollar'000				
As at 31 December	PT Indo Tambangraya Megah Tbk		Banpu Power Public Company Limited	
	2018	2017	2018	2017
Current assets	766,484	730,201	130,312	141,928
Current liabilities	(389,898)	(327,508)	(147,645)	(158,885)
Total current net assets	376,586	402,693	(17,333)	(16,957)
Non-current assets	676,243	628,461	1,527,571	1,382,576
Non-current liabilities	(83,045)	(73,014)	(172,387)	(83,242)
Total non-current net assets	593,198	555,447	1,355,184	1,299,334
Net assets	969,784	958,140	1,337,851	1,282,377
Accumulated non-controlling interest	310,871	309,166	305,393	292,038

Baht'000				
As at 31 December	PT Indo Tambangraya Megah Tbk		Banpu Power Public Company Limited	
	2018	2017	2018	2017
Current assets	24,872,238	23,863,617	4,228,621	4,638,336
Current liabilities	(12,652,109)	(10,703,233)	(4,791,064)	(5,192,489)
Total current net assets	12,220,129	13,160,384	(562,443)	(554,153)
Non-current assets	21,943,962	20,538,685	49,569,366	45,183,819
Non-current liabilities	(2,694,796)	(2,386,192)	(5,593,929)	(2,720,426)
Total non-current net assets	19,249,166	18,152,493	43,975,437	42,463,393
Net assets	31,469,295	31,312,877	43,412,994	41,909,240
Accumulated non-controlling interest	10,087,705	10,103,808	9,909,937	9,544,080

Summarised statement of comprehensive income

US Dollar'000				
	PT Indo Tambangraya Megah Tbk		Banpu Power Public Company Limited	
	2018	2017	2018	2017
As at 31 December				
Revenue	2,015,134	1,695,053	195,669	189,147
Profit before income tax	367,363	362,055	128,279	135,660
Income tax expense	(108,607)	(109,352)	(9,060)	(10,661)
Post-tax profit from continuing operations	258,756	252,703	119,219	124,999
Other comprehensive income (expenses)	1,993	(2,999)	(21,689)	(22,015)
Total comprehensive income	260,749	249,704	97,530	102,984
Total comprehensive income allocated				
to non-controlling interests	83,685	79,807	23,573	58,536
Dividend paid to non-controlling interests	81,980	65,437	12,211	11,429

Baht'000				
	PT Indo Tambangraya Megah Tbk		Banpu Power Public Company Limited	
	2018	2017	2018	2017
For the years ended 31 December				
Revenue	65,110,391	57,526,725	6,322,203	6,419,277
Profit before income tax	11,869,738	12,287,434	4,144,797	4,604,026
Income tax expense	(3,509,156)	(3,711,181)	(292,729)	(361,815)
Post-tax profit from continuing operations	8,360,582	8,576,253	3,852,068	4,242,211
Other comprehensive income (expenses)	64,403	(101,784)	(700,784)	(747,133)
Total comprehensive income	8,424,985	8,474,469	3,151,284	3,495,078
Total comprehensive income allocated				
to non-controlling interests	2,703,930	2,708,502	761,660	1,986,586
Dividend paid to non-controlling interests	2,628,552	2,222,964	392,264	357,255

US Dollar'000

For the years ended 31 December	PT Indo Tambangraya Megah Tbk		Banpu Power Public Company Limited	
	2018	2017	2018	2017
Cash flow from operating activities				
Cash generated from (used in) operations	464,152	378,572	(11,058)	30,145
Interest paid	-	-	(6,239)	(2,901)
Income tax paid	(109,257)	(59,595)	(7,735)	(8,504)
Net cash generated from (used in) operating activities	354,895	318,977	(25,032)	18,740
Net cash generated from (used in) investing activities	(108,631)	(73,825)	11,982	(50,008)
Net cash generated from (used in) financing activities	(249,373)	(199,050)	23,844	31,252
Net increase (decrease) in cash and cash equivalents	(3,109)	46,102	10,794	(16)
Cash and cash equivalents at beginning of the year	374,230	328,085	34,552	32,173
Exchange gains (losses) on cash and cash equivalents	(2,905)	43	(878)	2,395
Cash and cash equivalents at ending of the year	368,216	374,230	44,468	34,552

Baht'000

For the years ended 31 December	PT Indo Tambangraya Megah Tbk		Banpu Power Public Company Limited	
	2018	2017	2018	2017
Cash flow from operating activities				
Cash generated from (used in) operations	14,997,076	12,847,977	(357,288)	1,023,074
Interest paid	-	-	(201,573)	(98,468)
Income tax paid	(3,530,170)	(2,022,535)	(249,920)	(288,596)
Net cash generated from (used in) operating activities	11,466,906	10,825,442	(808,781)	636,010
Net cash generated from (used in) investing activities	(3,509,944)	(2,505,473)	387,142	(1,697,185)
Net cash generated from (used in) financing activities	(8,057,416)	(6,755,359)	770,432	1,060,630
Net increase (decrease) in cash and cash equivalents	(100,454)	1,564,610	348,793	(545)
Cash and cash equivalents at beginning of the year	12,230,173	11,755,516	1,129,197	1,152,784
Exchange losses on cash and cash equivalents	(181,183)	(1,089,953)	(35,011)	(23,042)
Cash and cash equivalents at ending of the year	11,948,536	12,230,173	1,442,979	1,129,197

Significant restrictions

As at 31 December 2018, restricted deposits at banks of CNY 11.01 million or equivalent to US Dollar 1.60 million (2017: CNY 4.40 million or equivalent to US Dollar 0.68 million) represented deposits held at banks as reserve for serving bank acceptance bills provided by the banks for a subsidiary in the People's Republic of China. The Group classified these restricted deposits at banks as short-term investments. And restricted deposits at banks of subsidiaries in Indonesia amounting to US Dollar 22.33 million represented restricted cash used in mine closure activities of subsidiaries of US Dollar 13.42 million classified as non-current assets (2017: US Dollar 5.81 million) and capital injection commitment of US Dollar 8.91 million classified as other current assets.

13.4 Investments in associates

The Group has investments in associates. Individually, these investments are immaterial and accounted for using the equity method.

During 2017, the Group had not taken up its share of loss as the accumulated equity accounted loss is in excess of the original cost of investment. As at 31 December 2017, the Group had no commitment from its associates.

Individually immaterial associates

The Group has interests in a number of individually immaterial joint ventures that are accounted for using the equity method.

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Aggregate carrying amount of individually immaterial associates	35,207	765	1,142,472	25,000
Aggregate amounts of the reporting entity's share of:				
Profit from continuing activities	701	-	23,005	-
Total comprehensive income	701	-	23,005	-

13.5 Investments in joint ventures

Below are the joint ventures that are material to the Group. These joint ventures have share capital consisting solely of ordinary shares, which are held directly by the Group, which has voting rights in proportion to the ordinary shares.

Name of company	Country	Business	Measurement method	Percent of ownership interest	
				2018 %	2017 %
BLCP Power Ltd.	Thailand	Power production and trading	Equity	50.00	50.00
Hongsa Power Company Limited	Lao People's Democratic Republic	Power concession	Equity	40.00*	40.00*
Shanxi Gaohe Energy Co., Ltd.	People's Republic of China	Coal mining and trading	Equity	45.00*	45.00*

* Shareholder agreements of the Group's joint ventures determine the management structure including strategic financial decisions and operations which required unanimous votes from all shareholders or their representatives. The Group has classified these as investments in joint ventures.

Commitments and contingent liabilities in respect of joint ventures

Significant commitments in the ownership proportion of the Group's joint ventures:

	Consolidated financial statements			
	Million US Dollar		Million Baht	
	2018	2017	2018	2017
Letter of Guarantee	2	2	68	68
Significant contracts	540	624	17,521	20,381
Total	542	626	17,589	20,449

Commitments relating to its joint ventures to the Group are disclosed in Note 34.1.

Summarised financial information for joint ventures

Set out below are the summarised financial information for the joint ventures that are material to the Group. The information disclosed reflects the amounts presented in the financial statements of the relevant joint ventures (not the Group's shares of those amounts). They have been amended to reflect adjustments made using the equity method, including fair value adjustments and modifications for differences in the accounting policies of the Group and its joint ventures.

Summarised statement of financial position

US Dollar'000						
As at 31 December	BLCP Power Limited		Hongsa Power Company Limited		Shanxi Gaohe Energy Co., Ltd.	
	2018	2017	2018	2017	2018	2017
Current assets						
Cash and cash equivalents	1,840	2,914	270,757	251,590	38,438	25,047
Deposits at financial institutions						
used as collateral	181,850	213,125	65,969	66,212	21,163	22,972
Current portion of lease accounts						
receivable, net	61,325	109,513	147,123	142,222	6,110	15,411
Other current assets	150,665	145,030	166,017	142,000	195,554	243,112
Total current assets	395,680	470,582	649,866	602,024	261,265	306,542
Non-current assets						
Lease accounts receivable	275,747	321,841	2,473,798	2,552,995	-	-
Property, plant and equipment, net	94,887	57,329	106,048	83,811	664,433	724,267
Mining property rights, net	-	-	-	-	790,834	649,605
Other assets	140,331	137,295	331,226	283,687	38,506	36,783
Total non-current assets	510,965	516,465	2,911,072	2,920,493	1,493,773	1,410,655
Current liabilities						
Current portion of long-term						
borrowings, net	39,129	87,781	172,429	157,874	29,141	38,320
Other current liabilities	513,786	529,699	91,616	79,521	644,029	645,278
Total current liabilities	552,915	617,480	264,045	237,395	673,170	683,598
Non-current liabilities						
Long-term borrowings, net	26,705	65,497	2,154,782	2,316,213	43,856	107,129
Other liabilities	29,275	27,427	28,399	39,530	6,309	4,331
Total non-current liabilities	55,980	92,924	2,183,181	2,355,743	50,165	111,460
Net assets	297,750	276,643	1,113,712	929,379	1,031,703	922,139

Baht'000

As at 31 December	BLCP Power Limited		Hongsa Power Company Limited		Shanxi Gaohe Energy Co., Ltd.	
	2018	2017	2018	2017	2018	2017
Current assets						
Cash and cash equivalents	59,700	95,236	8,786,011	8,222,195	1,247,296	818,548
Deposits at financial institutions used as collateral	5,900,983	6,965,123	2,140,697	2,163,867	686,726	750,758
Current portion of lease accounts receivable, net	1,989,997	3,578,988	4,774,104	4,647,928	198,276	503,655
Other current assets	4,889,061	4,739,742	5,387,227	4,640,694	6,345,696	7,945,125
Total current assets	12,839,741	15,379,089	21,088,039	19,674,684	8,477,994	10,018,086
Non-current assets						
Lease accounts receivable	8,947,944	10,518,065	80,274,261	83,434,189	-	-
Property, plant and equipment, net	3,079,062	1,873,572	3,441,239	2,739,005	21,560,727	23,669,692
Mining property rights, net	-	-	-	-	25,662,360	21,229,685
Other assets	4,553,712	4,486,913	10,748,209	9,271,131	1,249,505	1,202,085
Total non-current assets	16,580,718	16,878,550	94,463,709	95,444,325	48,472,592	46,101,462
Current liabilities						
Current portion of long-term borrowings, net	1,269,731	2,868,769	5,595,274	5,159,474	945,617	1,252,334
Other current liabilities	16,672,258	17,311,041	2,972,939	2,598,818	20,898,608	21,088,275
Total current liabilities	17,941,989	20,179,810	8,568,213	7,758,292	21,844,225	22,340,609
Non-current liabilities						
Long-term borrowings, net	866,561	2,140,516	69,922,261	75,695,926	1,423,105	3,501,061
Other liabilities	949,959	896,335	921,527	1,291,863	204,714	141,525
Total non-current liabilities	1,816,520	3,036,851	70,843,788	76,987,789	1,627,819	3,642,586
Net assets	9,661,950	9,040,978	36,139,747	30,372,928	33,478,542	30,136,353

Summarised statement of comprehensive income

US Dollar'000						
For the years ended 31 December	BLCP Power Limited		Hongsa Power Company Limited		Shanxi Gaohe Energy Co., Ltd.	
	2018	2017	2018	2017	2018	2017
Sales and service income	447,739	432,944	681,349	618,138	899,068	744,090
Cost of sales and services	(347,178)	(327,937)	(251,548)	(218,684)	(373,097)	(326,388)
Depreciation and amortisation	(3,582)	(3,420)	(2,088)	(2,206)	(164,131)	(133,081)
Interest income	1,756	2,149	4,254	3,672	1,397	489
Interest expense	(5,491)	(9,143)	(162,361)	(161,521)	(14,565)	(22,746)
Income taxes	(6,902)	15,622	-	-	(95,025)	(72,999)
Profit for the year	83,850	86,008	242,002	154,230	253,647	189,365
Other comprehensive income (expense) for the year	2,654	32,758	17,129	90,158	(35,512)	28,198
Total comprehensive income for the year	86,504	118,766	259,131	244,388	218,135	217,563
Dividend receivables from related parties	65,397	89,182	74,798	71,492	108,571	60,143

Baht'000						
For the years ended 31 December	BLCP Power Limited		Hongsa Power Company Limited		Shanxi Gaohe Energy Co., Ltd.	
	2018	2017	2018	2017	2018	2017
Sales and service income	14,466,747	14,693,260	22,014,862	20,978,359	29,049,923	25,252,917
Cost of sales and services	(11,217,552)	(11,129,537)	(8,127,704)	(7,421,695)	(12,055,017)	(11,076,950)
Depreciation and amortisation	(115,729)	(116,069)	(67,472)	(74,869)	(5,303,203)	(4,516,497)
Interest income	56,748	72,922	137,455	124,623	45,152	16,581
Interest expense	(177,409)	(310,298)	(5,245,992)	(5,481,705)	(470,610)	(771,966)
Income taxes	(223,008)	530,176	-	-	(3,070,332)	(2,477,429)
Profit for the year	2,680,253	2,970,157	7,797,541	5,200,002	8,195,513	6,426,656
Other comprehensive income (expense) for the year	40,719	217,742	423,278	467,635	(1,345,316)	(1,649,593)
Total comprehensive income for the year	2,720,972	3,187,899	8,220,819	5,667,637	6,850,197	4,777,063
Dividend receivables from related parties	2,100,000	2,999,256	2,454,000	2,400,000	3,508,008	2,041,128

Reconciliation of the summarised financial information

Reconciliation of the summarised financial information presented to the carrying amount of its interest in joint ventures.

US Dollar'000						
	BLCP Power Limited		Hongsa Power Company Limited		Shanxi Gaohe Energy Co., Ltd.	
	2018	2017	2018	2017	2018	2017
Net assets as at 1 January	276,643	247,059	929,379	756,483	922,139	764,719
Profit for the year	83,850	86,008	242,002	154,230	253,647	189,365
Other comprehensive income (expense)	2,654	32,758	17,129	90,158	(35,512)	28,198
Dividend paid	(65,397)	(89,182)	(74,798)	(71,492)	(108,571)	(60,143)
Net assets as at 31 December	297,750	276,643	1,113,712	929,379	1,031,703	922,139
Ownership percentage in joint ventures by the Group	50%	50%	40%	40%	45%	45%
Interests in joint ventures	148,875	138,322	445,485	371,752	464,266	414,963
Impacts of change in functional currency of joint ventures	-	-	32,540	29,687	-	-
Carrying value as at 31 December	148,875	138,322	478,025	401,439	464,266	414,963

Baht'000						
	BLCP Power Limited		Hongsa Power Company Limited		Shanxi Gaohe Energy Co., Ltd.	
	2018	2017	2018	2017	2018	2017
Net assets as at 1 January	9,040,978	8,852,335	30,372,928	27,105,291	30,136,353	27,400,418
Profit for the year	2,680,253	2,970,157	7,797,541	5,200,002	8,195,513	6,426,656
Other comprehensive income (expense)	40,719	217,742	423,278	467,635	(1,345,316)	(1,649,593)
Dividend paid	(2,100,000)	(2,999,256)	(2,454,000)	(2,400,000)	(3,508,008)	(2,041,128)
Net assets as at 31 December	9,661,950	9,040,978	36,139,747	30,372,928	33,478,542	30,136,353
Ownership percentage in joint ventures by the Group	50%	50%	40%	40%	45%	45%
Interests in joint ventures	4,830,975	4,520,489	14,455,899	12,149,171	15,065,344	13,561,359
Impacts of change in functional currency of joint ventures	-	-	1,055,912	970,191	-	-
Carrying value as at 31 December	4,830,975	4,520,489	15,511,811	13,119,362	15,065,344	13,561,359

Individually immaterial joint ventures

In addition to the interests in joint ventures disclosed above, the Group also has interests in a number of individually immaterial joint ventures that are accounted for using the equity method.

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Aggregate carrying amount of individually immaterial joint ventures	247,745	214,938	8,039,270	7,024,379
Aggregate amounts of the reporting entity's share of:				
Profit from continuing activities	10,094	14,753	329,845	508,637
Other comprehensive income (expense)	(36,353)	17,455	(1,238,498)	108,886
Total comprehensive income (expense)	(26,259)	32,208	(908,653)	617,523

13.6 List of subsidiaries and associates and joint arrangements

			Percentage of direct shareholding	
Name of company	Country	Business	2018 %	2017 %
<u>Direct shareholding</u>				
Banpu Minerals Co., Ltd.	Thailand	Coal trading and investment in coal mining	99.99	99.99
BP Overseas Development Co., Ltd.	Mauritius Islands	Investment in coal mining and trading	100.00	100.00
Banpu Power Public Company Limited	Thailand	Investment in power	78.57	78.64
Banpu Engineering Services Co., Ltd.	Thailand	Investment in renewable energy	99.99	99.99
BOG Co., Ltd.	Thailand	Investment in power	99.99	99.99
Banpu International Limited	Thailand	Coal trading and project feasibility study	99.99	99.99
Banpu Infinergy Co., Ltd.	Thailand	Investment in renewable energy business, to generate and sell electricity from solar rooftop system and sell solar rooftop system	99.99	99.99

				Percentage of direct shareholding	
Name of company	Country	Business	2018 %	2017 %	
Indirect - shareholding					
Banpu Minerals Co., Ltd.					
Subsidiaries and a joint venture are as follows:					
<u>Subsidiaries</u>					
1) Chiang Muan Mining Co., Ltd.	Thailand	Coal mining and trading	99.99	99.99	
2) Silamani Co., Ltd.	Thailand	Coal trading	-	99.99	
3) Silamani Marble Co., Ltd.	Thailand	Coal trading	-	99.96	
4) Banpu Coal Sales Co., Ltd.	Thailand	Coal trading	99.99	99.99	
5) Banpu Singapore Pte. Ltd. and subsidiaries	Singapore	Coal trading	-	25.00 ⁽²⁾	
6) Banpu Coal Investment Company Limited	Mauritius Islands	Investment in coal mining	100.00	100.00	
- Banpu Minerals (Singapore) Pte. Ltd.	Singapore	Investment in coal mining	50.00 ⁽³⁾	50.00 ⁽³⁾	
7) Banpu Minerals (Singapore) Pte. Ltd.	Singapore	Investment in coal mining	50.00 ⁽³⁾	50.00 ⁽³⁾	
and subsidiaries					
- PT. Indo Tambangraya Megah Tbk. (ITM)	Republic of Indonesia	Investment in coal mining	67.13	67.13	
and subsidiaries					
<u>Subsidiaries</u>					
- PT. ITM Indonesia and subsidiaries	Republic of Indonesia	Coal mining and trading	99.99 ⁽⁶⁾	99.99 ⁽⁶⁾	
and a joint venture					
<u>Subsidiary</u>					
- PT. Gas Emas	Republic of Indonesia	Fuel trading	75.00	75.00	
<u>Joint arrangement - Joint venture</u>					
- PT. Nusantara Timur Unggul	Republic of Indonesia	Logistic service	33.34 ⁽¹⁾	-	
- PT. Indominco Mandiri (IMM)	Republic of Indonesia	Coal mining and trading	99.99 ⁽⁶⁾	99.99 ⁽⁶⁾	
- PT. Kitadin (KTD) and related parties	Republic of Indonesia	Coal mining and trading	99.99 ⁽⁶⁾	99.99 ⁽⁶⁾	
- PT. ITM Indonesia	Republic of Indonesia	Coal mining and trading	0.01 ⁽⁶⁾	0.01 ⁽⁶⁾	
- PT. Indominco Mandiri	Republic of Indonesia	Coal mining and trading	0.01 ⁽⁶⁾	0.01 ⁽⁶⁾	
- PT. Bharinto Ekatama (BEK)	Republic of Indonesia	Coal mining and trading	0.01 ⁽⁶⁾	0.01 ⁽⁶⁾	
- PT. Jorong Barutama Greston (JBG)	Republic of Indonesia	Coal mining and trading	0.01 ⁽⁶⁾	0.01 ⁽⁶⁾	
- PT. Tambang Raya Usaha Tama	Republic of Indonesia	Coal mining and trading	0.01 ⁽⁶⁾	0.01 ⁽⁶⁾	
- PT. Trubaindo Coal Mining (TCM)	Republic of Indonesia	Coal mining and trading	1.00 ⁽⁶⁾	1.00 ⁽⁶⁾	
- PT. ITM Batubara Utama	Republic of Indonesia	Investment in coal mining	0.01 ⁽⁶⁾	0.01 ⁽⁶⁾	
- PT. Trubaindo Coal Mining (TCM)	Republic of Indonesia	Coal mining and trading	99.00 ⁽⁶⁾	99.00 ⁽⁶⁾	
- PT. Bharinto Ekatama (BEK)	Republic of Indonesia	Coal mining and trading	99.99 ⁽⁶⁾	99.99 ⁽⁶⁾	

Name of company	Country	Business	Percentage of direct shareholding	
			2018 %	2017 %
- PT. Jorong Barutama Greston (JBG)	Republic of Indonesia	Coal mining and trading	99.99 ⁽⁶⁾	99.99 ⁽⁶⁾
- PT. Tambang Raya Usaha Tama	Republic of Indonesia	Coal mining and trading	99.99 ⁽⁶⁾	99.99 ⁽⁶⁾
- PT. ITM Energi Utama	Republic of Indonesia	Investment in power	99.99 ⁽⁶⁾	99.99 ⁽⁶⁾
- PT. Energi Batubara Perkasa	Republic of Indonesia	Coal Trading	99.99 ⁽⁶⁾	-
- PT. Nusa Persada Resources	Republic of Indonesia	Coal mining and trading	99.99 ⁽⁶⁾	-
- PT. ITM Banpu Power	Republic of Indonesia	Investment in power	70.00 ⁽⁵⁾	70.00 ⁽⁵⁾
- PT. ITM Batubara Utama	Republic of Indonesia	Investment in coal mining	99.99 ⁽⁶⁾	99.99 ⁽⁶⁾
- PT. Nusa Persada Resources	Republic of Indonesia	Coal mining and trading	0.01 ⁽⁶⁾	-
- PT. Energy Batubara Perkasa	Republic of Indonesia	Coal Trading	0.10 ⁽⁶⁾	-
- PT. Tepian Indah Sukses	Republic of Indonesia	Coal mining and trading	70.00	70.00
- BMS Coal Sales Pte. Ltd.	Singapore	Coal trading and provide service in mining	100.00	100.00
- Hunnu Coal Pty Ltd. and subsidiaries	Australia	Investment in coal mining and trading	100.00	100.00
- Hunnu Resources LLC and subsidiaries	Mongolia	Coal Trading	100.00	100.00
- Munkh Sumber Uul LLC	Mongolia	Coal mining and trading	100.00	100.00
- Golden Gobi Mining LLC	Mongolia	Coal mining and trading	100.00	100.00
- Great East Minerals LLC	Mongolia	Coal mining and trading	99.99	99.99
- Bilegt Khaikhan Uul LLC	Mongolia	Coal mining and trading	100.00	100.00
- Hunnu Power LLC	Mongolia	Coal trading	100.00	100.00
- Borganchan LLC	Mongolia	Coal trading	-	100.00
- Munkhnoyon Suvraga LLC	Mongolia	Business consult in coal mining and trading	100.00	100.00
- Hunnu Investments Pte. Ltd. and a subsidiary	Singapore	Coal trading	100.00	100.00
- Hunnu Altai LLC and subsidiaries	Mongolia	Coal mining and trading	100.00	100.00
- Hunnu Gobi Altai LLC	Mongolia	Coal mining and trading	80.00	80.00
- Hunnu Altai Minerals LLC	Mongolia	Coal mining and trading	100.00	100.00
- Banpu (Shanghai) Trading Co., Ltd.	People's Republic of China	Coal trading	100.00	100.00
<u>Joint arrangement – Joint Venture</u>				
1) Hebi Zhong Tai Mining Co., Ltd.	People's Republic of China	Coal mining and trading	40.00 ⁽¹⁾	40.00 ⁽¹⁾

				Percentage of direct shareholding	
Name of company	Country	Business	2018 %	2017 %	
BP Overseas Development Co., Ltd.					
Subsidiaries are as follows:					
Subsidiaries					
- Asian American Coal Inc. and Subsidiaries and a joint venture	British Virgin Islands	Investment in coal mining	100.00	100.00	
1) AACI SAADEC (BVI) Holdings Limited	British Virgin Islands	Investment in coal mining	100.00	100.00	
2) Banpu Singapore Pte. Ltd. and subsidiaries	Singapore	Coal trading	100.00 ⁽²⁾	75.00 ⁽²⁾	
- Banpu Australia Co. Pty Ltd. and subsidiaries	Australia	Investment in coal mining	100.00	100.00	
- AFE Investments Pty Ltd.	Australia	Investment in coal mining	100.00	100.00	
- Banpu Australia Resources Pty. Ltd.	Australia	Investment in coal mining	100.00	100.00	
- Centennial Coal Co., Ltd. and subsidiaries and associate and joint venture	Australia	Investment in coal mining and trading	100.00	100.00	
Subsidiaries					
- Centennial Inglenook Pty Ltd.	Australia	Coal mining and trading	100.00	100.00	
- Centennial Coal Services and Marketing Pty Ltd.	Australia	Sales and marketing	100.00	100.00	
- Centennial Northern Coal Services Pty Ltd.	Australia	Mining Services	100.00	100.00	
- Centennial Airly Pty Ltd.	Australia	Coal mining and trading	100.00	100.00	
- Berrima Coal Pty Ltd.	Australia	Coal mining and trading	100.00	100.00	
- Centennial Angus Place Pty Ltd.	Australia	Coal mining and trading	100.00	100.00	
- Centennial Coal Infrastructure Pty Ltd.	Australia	Coal mining and trading	100.00	100.00	
- Centennial Fassifern Pty Ltd. and subsidiaries	Australia	Coal mining and trading	100.00	100.00	
- Powercoal Pty Ltd. and subsidiaries	Australia	Investment in coal mining and trading	100.00	100.00	
- Elcom Collieries Pty Ltd.	Australia	Coal mining and trading	100.00	100.00	
- Huntley Colliery Pty Ltd.	Australia	Coal mining and trading	100.00	100.00	
- Mandalong Pastoral Management Pty Ltd.	Australia	Investment in coal mining and trading	100.00	100.00	
- Collieries Superannuation Pty Ltd.	Australia	Manage provident fund	100.00	100.00	
- Powercoal Superannuation Pty Ltd.	Australia	Manage provident fund	100.00	100.00	
- Centennial Northern Mining Services Pty Ltd.	Australia	Coal service provider	100.00	100.00	
- Centennial Mandalong Pty Ltd.	Australia	Coal mining and trading	100.00	100.00	

Name of company	Country	Business	Percentage of direct shareholding	
			2018 %	2017 %
- Centennial Mannering Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Centennial Munmorah Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Centennial Myuna Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Centennial Springvale Holdings Pty Ltd. and subsidiaries and a joint venture	Australia	Coal mining and trading	100.00	100.00
<u>Subsidiaries</u>				
- Centennial Springvale Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Boulder Mining Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Springvale Coal Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
<u>Joint arrangement - Joint Venture</u>				
- Springvale Coal Sales Pty Ltd.	Australia	Coal trading	50.00	50.00
- Centennial Newstan Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Charbon Coal Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Coalex Pty Ltd. and subsidiaries	Australia	Coal mining and trading	100.00	100.00
- Clarence Coal Investments Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Clarence Coal Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Clarence Colliery Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Hartley Valley Coal Company Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Centennial Clarence Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Ivanhoe Coal Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
- Powercoal Employee Entitlements Company Pty Ltd.	Australia	Manage provident fund	100.00	100.00
- Centennial Drilling Services Pty Ltd.	Australia	Coal mining and trading	100.00	100.00
<u>Associate</u>				
- Port Kembla Coal Terminal Ltd	Australia	Port service	16.66	16.66
<u>Joint arrangement - Joint operations</u>				
- Charbon Joint Venture	Australia	Coal mining and trading	95.00	95.00
- Clarence Joint Venture	Australia	Coal mining and trading	85.00	85.00
- Springvale Joint Venture	Australia	Coal mining and trading	50.00	50.00
- Angus Place Joint Venture	Australia	Coal mining and trading	50.00	50.00
<u>Joint arrangement - Joint venture</u>				
- Shanxi Gaohe Energy Co., Ltd.	People's Republic of China	Coal mining and trading	45.00 ⁽¹⁾	45.00 ⁽¹⁾

			Percentage of direct shareholding	
Name of company	Country	Business	2018 %	2017 %
Banpu Power Public Company Limited				
Subsidiaries and joint ventures and an associate are as follows;				
<u>Subsidiaries</u>				
1) Banpu Coal Power Limited and a joint venture	Thailand	Investment in power	99.99	99.99
- BLCP Power Limited	Thailand	Power production and trading	50.00 ⁽¹⁾	50.00 ⁽¹⁾
2) Banpu Renewable Energy Co., Ltd.	Thailand	Investment in renewable energy	99.99	99.99
and subsidiaries and a joint venture are as follows;				
<u>Subsidiaries</u>				
1) Banpu Renewable Singapore Pte. Ltd.	Singapore	Investment in renewable energy	100.00	100.00
<u>Subsidiaries</u>				
- Banpu Power Trading GK	Japan	Power and purchase and trading	100.00	-
<u>Joint arrangement – Joint venture</u>				
- Digital Energy Solutions Corporation	Japan	Power and purchase and trading	35.00 ⁽¹⁾	-
2) Akira Energy Limited and subsidiaries	Hong Kong	Investment in power	100.00	100.00
- Akira Energy (South) Limited	Hong Kong	Investment in power	100.00	100.00
3) BPP Renewable Investment (China) Co., Ltd.	People's Republic of China	Investment in renewable energy	100.00	100.00
and subsidiaries				
- Anqiu Huineng New Energy Co.,Ltd.	People's Republic of China	Solar power generation	100.00	100.00
- Weifang Tian'en Jinshan Comprehensive Energy Co., Ltd.	People's Republic of China	Solar power generation	100.00	100.00
- Dongping Haoyuan Solar Power Generation Co., Ltd.	People's Republic of China	Solar power generation	100.00	100.00

Name of company	Country	Business	Percentage of direct shareholding	
			2018 %	2017 %
- Anqiu City Hui'en PV Technology Co., Ltd.	People's Republic of China	Solar power generation	100.00	100.00
- Jiaxing Deyuan Energy – Saving Technology Co., Ltd.	People's Republic of China	Solar power generation	100.00	100.00
- Feicheng Xingyu Solar Power PV Technology Co., Ltd.	People's Republic of China	Solar power generation	100.00	-
4) Macao Deyuan Energy – Saving & Environmental Protection Technology Co., Ltd.	People's Republic of China	Solar power generation	-	100.00
5) BRE Singapore Pte.Ltd.and subsidiaries	Singapore	Investment in renewable energy	100.00	-
- BPP Vinh Chau Wind Power Limited Liability Company	The Socialist Republic of Vietnam	Investment in renewable energy	100.00	-
<u>Joint arrangement – Joint venture</u>				
Aizu Energy Pte. Ltd.	Singapore	Investment in renewable energy	75.00 ⁽¹⁾	75.00 ⁽¹⁾
3) Banpu Power International Limited and subsidiaries and joint ventures are as follows;	Mauritius Islands	Investment in power	100.00	100.00
<u>Subsidiaries</u>				
- Banpu Power Investment Co., Ltd. subsidiaries and a joint venture are as follows	Singapore	Investment in power	100.00	100.00
<u>Subsidiaries</u>				
1) Shijiazhuang Chengfeng Cogen Co., Ltd.	People's Republic of China	Power and steam production and trading	100.00	100.00
2) Zouping Peak Pte. Ltd. and a subsidiary	Singapore	Investment in power	100.00	100.00
- Zouping Peak CHP Co., Ltd.	People's Republic of China	Power and steam production and trading	70.00	70.00
3) Banpu Investment (China) Co., Ltd. and subsidiaries	People's Republic of China	Investment in power	100.00	100.00
- Tangshan Banpu Heat & Power Co., Ltd.	People's Republic of China	Power and steam production and trading	12.08 ⁽⁴⁾	12.08 ⁽⁴⁾

Name of company	Country	Business	Percentage of direct shareholding	
			2018 %	2017 %
- Banpu Power Trading (Shandong) Co., Ltd.	People's Republic of China	Power and purchase and trading	100.00	100.00
- Banpu Power Trading (Hebei) Co., Ltd.	People's Republic of China	Power and purchase and trading	100.00	100.00
4) Pan-Western Energy Corporation LLC and a subsidiary	Cayman Islands	Investment in power	100.00	100.00
- Tangshan Banpu Heat & Power Co., Ltd.	People's Republic of China	Power and steam production and trading	87.92 ⁽⁴⁾	87.92 ⁽⁴⁾
<u>Joint arrangement - Joint venture</u>				
- Shanxi Lu Guang Power Co., Ltd.	People's Republic of China	Power and steam production and trading	30.00 ⁽¹⁾	30.00 ⁽¹⁾
4) Banpu Power (Japan) Co., Ltd.	Thailand	Investment in renewable energy	100.00	100.00
<u>Joint arrangement - Joint ventures</u>				
- Hongsa Power Company Limited	Lao People's Democratic Republic	Power concession	40.00 ⁽¹⁾	40.00 ⁽¹⁾
- Phu Fai Mining Company Limited	Lao People's Democratic Republic	Mining concession	37.50 ⁽¹⁾	37.50 ⁽¹⁾
<u>An associate</u>				
- PT. ITM Banpu Power BOG Co., Ltd.	Republic of Indonesia	Investment in power	30.00 ⁽⁵⁾	30.00 ⁽⁵⁾
A subsidiary is as follows;				
1) Banpu North America Corporation and a structured entity	United States of America	Investment in power	100.00	100.00
- BKV Oil and Gas Capital Partners, L.P and joint operations	United States of America	Investment in power	100.00 ⁽⁷⁾	100.00 ⁽⁷⁾
- Chaffee project	United States of America	Natural gas business	29.40*	29.40*
- Chelsea project	United States of America	Natural gas business	12.80*	12.80*
- Zurich project	United States of America	Natural gas business	12.06*	12.06*
- Cardiff project	United States of America	Natural gas business	80.00*	80.00*
- West Brom project	United States of America	Natural gas business	72.10*	-
* Average ownership interest				

				Percentage of direct shareholding	
Name of company	Country	Business	2018 %	2017 %	
Banpu Engineering Services Co., Ltd.					
Subsidiaries are as follows:					
1) Biofuels Development Holding Co., Ltd.	Thailand	Investment in renewable energy	99.99	99.99	
2) Banpu Energy Services (Thailand) Co., Ltd. and a subsidiary and joint ventures	Thailand	Investment in renewable energy	99.99	99.99	
<u>A subsidiary</u>					
- Banpu Energy Services Japan Co., Ltd.	Japan	Investment in power	100.00	100.00	
<u>Joint arrangement - Joint ventures</u>					
- Aura Land Development Pte. Ltd.	Singapore	Investment in renewable energy	75.00 ⁽¹⁾	75.00 ⁽¹⁾	
- BPPR Co., Ltd.	Thailand	Investment in advisory for power business	75.00 ⁽¹⁾	75.00 ⁽¹⁾	
- Hokkaido Solar Estate G.K.	Japan	Investment property	60.00 ⁽¹⁾	60.00 ⁽¹⁾	
Banpu Infinergy Co., Ltd.					
A subsidiary and associate are as follows;					
<u>A subsidiary</u>					
- BPIN Investment Co. Ltd. and its joint venture	Mauritius Islands	Investment in renewable energy	100.00	100.00	
<u>An associate</u>					
- Durapower Holdings Pte. Ltd. (Formerly named “New Resources Technology Pte. Ltd.”)	Singapore	Energy storage system	47.68	-	
<u>Joint arrangement - Joint ventures</u>					
- Sunseap Group Pte. Ltd and its subsidiaries	Singapore	Investment in renewable energy	38.46 ^{(1), (8)}	28.86 ^{(1), (8)}	
<u>Associate</u>					
- Urban Mobility Tech Co., Ltd.	Thailand	Electric vehicle business	22.50 ⁽⁹⁾	22.50 ⁽⁹⁾	

Percentage of shareholding by the Group

- (1) Shareholder agreements of the Group's joint ventures have determined the management structure including strategic financial decisions and operations which required unanimous votes/consents from all shareholders or their representatives. The Group has classified these as investments in joint ventures.
- (2) The Group owns 100% shareholding in Banpu Singapore Pte. Ltd. of which 25% shareholding held by Banpu Minerals Co., Ltd. and 75% shareholding held by Asian American Coal Inc. During the year, the Group restructured investment of which Asian American Coal Inc. owns 100% shareholding.
- (3) The Group owns 100% shareholding in Banpu Minerals (Singapore) Pte. Ltd., which is held by Banpu Mineral Co., Ltd. and Banpu Coal Investment Company Limited in the proportion of 50% each.
- (4) The Group owns 100% shareholding in Tangshan Banpu Heat & Power Co., Ltd. of which 12.08% shareholding held by Banpu Investment (China) Co., Ltd. and 89.92% shareholding held by Pan-Western Energy Corporation LLC.
- (5) PT. ITM Banpu Power is owned by Banpu Power Public Company Limited and PT. Indo Tambangraya Megah Tbk. in the proportion of 30% and 70%, respectively.
- (6) PT. Indo Tambangraya Megah Tbk. Group (ITM Group) owns 100% shareholding (both direct and indirect) of registered shares.
- (7) BKV Oil and Gas Capital Partners, L.P. is a structured entity incorporated as a fund which is held by Banpu North America Corporation to invest in natural gas business in the United States of America totalling US Dollar 521 million.

Preference shares held by the Group

- (8) The Group holds an investment in Sunseap Group Pte. Ltd. by non-cumulative convertible preference shares in the proportion of 38.46 of total registered shares.
- (9) The Group holds investments in Urban Mobility Tech Co., Ltd. by newly issued preference shares which are entitled to dividends and voting rights equal to the number of ordinary shares in the proportion of 22.50 of total registered shares.

14 Property, plant and equipment, net

Consolidated financial statements									
US Dollar'000									
	Land	Land improvement	Building and infrastructures	Machinery and equipment gas exploration and producing assets and pipelines	Furniture and office equipment	Tools	Motor vehicles	Construction in progress	Total
As at 1 January 2017									
Cost	51,328	154,238	257,215	2,103,178	22,509	26,065	7,637	33,994	2,656,164
Less Accumulated depreciation	-	(98,956)	(166,009)	(1,063,718)	(17,309)	(21,203)	(5,128)	-	(1,372,323)
Net book amount	51,328	55,282	91,206	1,039,460	5,200	4,862	2,509	33,994	1,283,841
Year ended 31 December 2017									
Opening net book amount	51,328	55,282	91,206	1,039,460	5,200	4,862	2,509	33,994	1,283,841
Additions	2,029	7	762	144,075	1,478	835	1,066	97,684	247,936
Increase from business acquisition	-	-	-	349,886	-	-	-	10,456	360,342
Disposals – Net book value	(1,971)	-	-	(4,034)	(25)	-	(28)	(36)	(6,094)
Reclassification	-	6,663	33,084	36,424	358	264	60	(87,883)	(11,030)
Write-off	-	-	(435)	(758)	(18)	(54)	(92)	(971)	(2,328)
Translation differences	3,917	312	3,564	61,109	22	28	54	2,374	71,380
Depreciation charge	-	(9,845)	(11,602)	(138,929)	(2,124)	(1,896)	(918)	-	(165,314)
Closing net book amount	55,303	52,419	116,579	1,487,233	4,891	4,039	2,651	55,618	1,778,733
As at 31 December 2017									
Cost	55,303	161,221	295,975	2,676,314	23,555	26,941	7,520	55,618	3,302,447
Less Accumulated depreciation	-	(108,802)	(179,396)	(1,189,081)	(18,664)	(22,902)	(4,869)	-	(1,523,714)
Net book amount	55,303	52,419	116,579	1,487,233	4,891	4,039	2,651	55,618	1,778,733

Consolidated financial statements
US Dollar'000

	Land	Land improvement	Building and infrastructures	Machinery and equipment and gas exploration and producing assets and pipelines	Furniture and office equipment	Tools	Motor vehicles	Construction in progress	Total
Year ended 31 December 2018									
Opening net book amount	55,303	52,419	116,579	1,487,233	4,891	4,039	2,651	55,618	1,778,733
Additions	1,841	-	1,178	187,265	2,058	1,732	372	69,697	264,143
Increase from business acquisition	-	-	-	141,884	-	2	30	200	142,116
Disposals – Net book value	(1,432)	-	(15)	(10,421)	(6)	-	(161)	(72)	(12,107)
Reclassification	(1,658)	14,222	10,728	34,519	240	294	133	(61,681)	(3,203)
Write-off	-	-	(17)	(334)	(45)	(45)	(57)	(1,365)	(1,863)
Translation differences	(5,100)	(1,015)	(3,905)	(84,350)	(76)	(92)	(64)	(2,034)	(96,636)
Depreciation charge	-	(9,065)	(13,046)	(185,547)	(1,472)	(1,817)	(846)	-	(211,793)
Closing net book amount	48,954	56,561	111,502	1,570,249	5,590	4,113	2,058	60,363	1,859,390
As at 31 December 2018									
Cost	48,954	174,154	300,951	2,790,336	24,791	27,136	7,127	60,363	3,433,812
Less Accumulated depreciation	-	(117,593)	(189,449)	(1,220,087)	(19,201)	(23,023)	(5,069)	-	(1,574,422)
Net book amount	48,954	56,561	111,502	1,570,249	5,590	4,113	2,058	60,363	1,859,390

Consolidated financial statements
Baht'000

	Land	Land improvement	Building and infrastructures	Machinery and equipment and gas exploration and producing assets and pipelines	Furniture and office equipment	Tools	Motor vehicles	Construction in progress	Total
As at 1 January 2017									
Cost	1,839,130	5,526,439	9,216,184	75,358,352	806,520	933,951	273,641	1,218,003	95,172,220
Less Accumulated depreciation	-	(3,545,672)	(5,948,224)	(38,113,778)	(620,198)	(759,712)	(183,724)	-	(49,171,308)
Net book amount	1,839,130	1,980,767	3,267,960	37,244,574	186,322	174,239	89,917	1,218,003	46,000,912
Year ended 31 December 2017									
Opening net book amount	1,839,130	1,980,767	3,267,960	37,244,574	186,322	174,239	89,917	1,218,003	46,000,912
Additions	68,851	244	25,872	4,889,609	50,173	28,325	36,184	3,315,216	8,414,474
Increase from business acquisition	-	-	-	11,834,118	-	-	-	354,842	12,188,960
Disposals – Net book value	(66,887)	-	-	(136,912)	(842)	-	(943)	(1,225)	(206,809)
Reclassification	-	226,125	1,122,797	1,236,150	12,140	8,969	2,046	(2,982,570)	(374,343)
Write-off	-	-	(14,772)	(25,722)	(595)	(1,846)	(3,116)	(32,953)	(79,004)
Translation differences	(33,751)	(159,947)	(198,196)	(1,722,713)	(15,256)	(13,350)	(6,293)	(53,667)	(2,203,173)
Depreciation charge	-	(334,105)	(393,739)	(4,714,986)	(72,082)	(64,353)	(31,151)	-	(5,610,416)
Closing net book amount	1,807,343	1,713,084	3,809,922	48,604,118	159,860	131,984	86,644	1,817,646	58,130,601
As at 31 December 2017									
Cost	1,807,343	5,268,837	9,672,738	87,464,351	769,811	880,449	245,773	1,817,646	107,926,948
Less Accumulated depreciation	-	(3,555,753)	(5,862,816)	(38,860,233)	(609,951)	(748,465)	(159,129)	-	(49,796,347)
Net book amount	1,807,343	1,713,084	3,809,922	48,604,118	159,860	131,984	86,644	1,817,646	58,130,601

Consolidated financial statements
Baht'000

	Land	Land improvement	Building and infrastructures	Machinery and equipment and gas exploration assets and pipelines	Furniture and office equipment	Tools	Motor vehicles	Construction in progress	Total
Year ended 31 December 2018									
Opening net book amount	1,807,343	1,713,084	3,809,922	48,604,118	159,860	131,984	86,644	1,817,646	58,130,601
Additions	59,475	-	38,054	6,050,648	66,484	55,967	12,033	2,251,908	8,534,569
Increase from business acquisition	-	-	-	4,462,660	-	94	970	6,597	4,470,321
Disposals – Net book value	(46,270)	-	(483)	(336,695)	(191)	-	(5,197)	(2,333)	(391,169)
Reclassification	(53,561)	459,518	346,633	1,115,319	7,767	9,484	4,298	(1,992,937)	(103,479)
Write-off	-	-	(547)	(10,805)	(1,443)	(1,451)	(1,841)	(44,069)	(60,156)
Translation differences	(178,437)	(44,332)	(153,816)	(2,935,828)	(3,503)	(3,898)	(2,796)	(78,046)	(3,400,656)
Depreciation charge	-	(292,891)	(421,532)	(5,995,153)	(47,570)	(58,705)	(27,342)	-	(6,843,193)
Closing net book amount	1,588,550	1,835,379	3,618,231	50,954,264	181,404	133,475	66,769	1,958,766	60,336,838
As at 31 December 2018									
Cost	1,588,550	5,651,263	9,765,785	90,545,859	804,455	880,556	231,270	1,958,766	111,426,504
Less Accumulated depreciation	-	(3,815,884)	(6,147,554)	(39,591,595)	(623,051)	(747,081)	(164,501)	-	(51,089,666)
Net book amount	1,588,550	1,835,379	3,618,231	50,954,264	181,404	133,475	66,769	1,958,766	60,336,838

Separate financial statements US Dollar'000									
	Land	Land improvement	Building and infrastructures	Machinery and equipment	Furniture and office equipment	Tools	Motor vehicles	Construction in progress	in progress
As at 1 January 2017									
Cost	-	2,638	3,605	42,902	4,480	385	1,474	217	55,701
Less Accumulated depreciation	-	(2,494)	(2,378)	(42,610)	(3,317)	(375)	(771)	-	(51,945)
Net book amount	-	144	1,227	292	1,163	10	703	217	3,756
Year ended 31 December 2017									
Opening net book amount	-	144	1,227	292	1,163	10	703	217	3,756
Additions	2,028	-	254	-	497	21	295	1	3,096
Disposals – Net book value	-	-	-	(22)	(7)	-	-	(36)	(65)
Write-off	-	-	-	-	-	-	-	(2)	(2)
Depreciation charge	-	(30)	(196)	(85)	(567)	(6)	(265)	-	(1,149)
Closing net book amount	2,028	114	1,285	185	1,086	25	733	180	5,636
As at 31 December 2017									
Cost	2,028	2,638	3,859	41,747	4,605	406	1,339	180	56,802
Less Accumulated depreciation	-	(2,524)	(2,574)	(41,562)	(3,519)	(381)	(606)	-	(51,166)
Net book amount	2,028	114	1,285	185	1,086	25	733	180	5,636

Separate financial statements US Dollar'000									
	Land	Land improvement	Building and infrastructures	Machinery and equipment	Furniture and office equipment	Tools	Motor vehicles	Construction in progress	Total
Year ended 31 December 2018									
Opening net book amount	2,028	114	1,285	185	1,086	25	733	180	5,636
Additions	-	-	778	6	822	10	-	74	1,690
Disposals — Net book value	-	-	(15)	-	(4)	-	(104)	(72)	(195)
Write-off	-	-	-	-	(1)	-	-	-	(1)
Depreciation charge	-	(31)	(235)	(75)	(470)	(8)	(213)	-	(1,032)
Closing net book amount	2,028	83	1,813	116	1,433	27	416	182	6,098
As at 31 December 2018									
Cost	2,028	2,638	4,592	21,191	5,399	348	1,016	182	37,394
Less Accumulated depreciation	-	(2,555)	(2,779)	(21,075)	(3,966)	(321)	(600)	-	(31,296)
Net book amount	2,028	83	1,813	116	1,433	27	416	182	6,098

Separate financial statements									
Baht'000									
	Land	Land improvement	Building and infrastructures	Machinery and equipment	Furniture and office equipment	Tools	Motor vehicles	Construction in progress	Total
As at 1 January 2017									
Cost	-	94,529	129,169	1,537,213	160,533	13,789	52,813	7,761	1,995,807
Less Accumulated depreciation	-	(89,373)	(85,222)	(1,526,756)	(118,865)	(13,414)	(27,606)	-	(1,861,236)
Net book amount	-	5,156	43,947	10,457	41,668	375	25,207	7,761	134,571
Year ended 31 December 2017									
Opening net book amount	-	5,156	43,947	10,457	41,668	375	25,207	7,761	134,571
Additions	68,827	-	139	-	14,919	217	10,025	10,978	105,105
Disposals – Net book value	-	-	-	(748)	(223)	-	-	(1,225)	(2,196)
Reclassification	-	-	8,490	-	1,925	525	-	(10,940)	-
Write-off	-	-	-	-	-	-	-	(68)	(68)
Translation differences	(2,549)	(415)	(3,937)	(785)	(3,564)	(53)	(2,255)	(607)	(14,165)
Depreciation charge	-	(1,034)	(6,647)	(2,889)	(19,254)	(213)	(8,981)	-	(39,018)
Closing net book amount	66,278	3,707	41,992	6,035	35,471	851	23,996	5,899	184,229
As at 31 December 2017									
Cost	66,278	86,219	126,123	1,364,320	150,503	13,274	43,749	5,899	1,856,365
Less Accumulated depreciation	-	(82,512)	(84,131)	(1,358,285)	(115,032)	(12,423)	(19,753)	-	(1,672,136)
Net book amount	66,278	3,707	41,992	6,035	35,471	851	23,996	5,899	184,229

		Separate financial statements							Baht'000
	Land	Land improvement	Building and infrastructures	Machinery and equipment	Furniture and office equipment	Tools	Motor vehicles	Construction in progress	Total
Year ended 31 December 2018									
Opening net book amount	66,278	3,707	41,992	6,035	35,471	851	23,996	5,899	184,229
Additions	-	-	25,148	202	26,569	309	-	2,392	54,620
Disposals - Net book value	-	-	(483)	-	(137)	-	(3,376)	(2,333)	(6,329)
Write-off	-	-	-	-	(12)	-	-	-	(12)
Translation differences	(469)	(30)	(224)	(52)	(203)	(6)	(214)	(41)	(1,239)
Depreciation charge	-	(985)	(7,601)	(2,470)	(15,178)	(266)	(6,899)	-	(33,399)
Closing net book amount	65,809	2,692	58,832	3,715	46,510	888	13,507	5,917	197,870
As at 31 December 2018									
Cost	65,809	85,609	149,003	687,630	175,197	11,295	32,972	5,917	1,213,432
Less Accumulated depreciation	-	(82,917)	(90,171)	(683,915)	(128,687)	(10,407)	(19,465)	-	(1,015,562)
Net book amount	65,809	2,692	58,832	3,715	46,510	888	13,507	5,917	197,870

Leased assets included above, where the Group is a lessee under finance lease, are presented below:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Cost of assets under finance lease	10,911	36,277	354,048	1,185,553
Less Accumulated depreciation	(4,993)	(17,548)	(162,012)	(573,484)
Net book amount	5,918	18,729	192,036	612,069

As at 31 December 2018 and 2017, the Group has capital commitments which are shown in Note 34.1.

15 Deferred income taxes and Income tax

Corporate income tax for the years ended 31 December 2018 and 2017 are calculated based on the net profit (tax base) which excludes the interests in joint ventures and associates. The rates are as follows:

	2018	2017
Thailand	20%	20%
Australia	30%	30%
Hong Kong Special Administrative Region of the People's Republic of China	16.5%	16.5%
Macau Special Administrative Region of the People's Republic of China	0% to 12%	0% to 12%
Republic of Indonesia	25%	25% to 30%
Japan	23.4%	23.4%
Singapore	17%	17%
Republic of Mauritius	15%	15%
People's Republic of China	0% to 25%	0% to 25%
Mongolia	10% to 25%	10% to 25%
The United States of America	21%	35%
The Socialist Republic of Vietnam	20%	-

15.1 Deferred income tax assets and deferred income tax liabilities

15.1.1 The analysis of deferred tax assets and deferred tax liabilities is as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Deferred tax assets:				
Deferred tax asset to be recovered within 12 months	952	5,340	30,874	174,524
Deferred tax asset to be recovered after more than 12 months	112,547	120,228	3,652,132	3,929,159
	113,499	125,568	3,683,006	4,103,683
Deferred tax liabilities:				
Deferred tax liability to be settled within 12 months	-	-	-	-
Deferred tax liability to be settled after more than 12 months	(272,031)	(234,349)	(8,827,341)	(7,658,735)
	(272,031)	(234,349)	(8,827,341)	(7,658,735)
Deferred income taxes, net	(158,532)	(108,781)	(5,144,335)	(3,555,052)
	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Deferred tax assets:				
Deferred tax asset to be recovered within 12 months	23	187	732	6,122
Deferred tax asset to be recovered after more than 12 months	23,955	33,312	777,334	1,088,654
Total	23,978	33,499	778,066	1,094,776

Deferred income tax assets are recognised for tax loss and carried forwards only to the extent that realisation of the related tax benefit through the future taxable profits is probable. The Group did not recognise deferred income tax assets amounting to US Dollar 73.19 million from tax losses of US Dollar 365.93 million that could be carried forward against future taxable income, these tax losses will be expired in 2023 (2017: deferred income tax asset amounting to US Dollar 9.59 million from tax losses of US Dollar 47.92 million will be expired in 2022).

15.1.2 The movement of deferred tax assets and deferred tax liabilities is as follows:

Consolidated financial statements US Dollar'000						
	At 1 January 2018	Charged (credited) to profit or loss	Charged (credited) to other comprehensive income or expense	Increase (decrease) from business combination	Translation differences	At 31 December 2018
Deferred tax assets:						
Employee benefit obligation	11,836	464	(605)	-	(238)	11,457
Loss carried forward	263,515	(36,913)	-	-	(22,975)	203,627
Financial derivative	13,029	71	5,045	-	-	18,145
Depreciation and amortisation	39,125	6,349	-	-	(843)	44,631
Investments in joint ventures	23,486	-	-	-	(189)	23,297
Provision for mine rehabilitation	6,506	2,947	-	-	-	9,453
Provision for decommissioning	898	-	-	-	-	898
Allowance for slow moving of spare part	2,136	1,044	-	-	-	3,180
Other reserves	39,362	(1,323)	-	-	(3,928)	34,111
Others	53,193	4,402	636	-	5,126	63,357
Total	453,086	(22,959)	5,076	-	(23,047)	412,156
Deferred tax liabilities:						
Investments in joint ventures	(17,658)	(7,158)	-	-	4,887	(19,929)
Mining property rights	(385,236)	1,722	-	-	(12,155)	(395,669)
Financial derivative	(151)	-	(42)	-	-	(193)
Depreciation and amortisation	(167,295)	(15,607)	-	-	14,310	(168,592)
Fair value uplift from the acquisition of power plant in the People's Republic of China	(2,763)	-	-	(47)	77	(2,733)
Amortisation of fair value of building and equipment from the acquisition of power plants	1,012	80	-	-	1	1,093
Connection fee	(2,595)	1,231	-	-	97	(1,267)
Tax effect of currency translation on tax base	18,386	2,830	-	-	(1)	21,215
Others	(5,567)	314	-	-	640	(4,613)
Total	(561,867)	(16,588)	(42)	(47)	7,856	(570,688)
Net	(108,781)	(39,547)	5,034	(47)	(15,191)	(158,532)

Consolidated financial statements
US Dollar'000

	At 1 January 2017	Charged (credited) to profit or loss	Charged (credited) to other comprehensive income or expense	Decrease from business combination	Translation differences	At 31 December 2017
Deferred tax assets:						
Employee benefit obligation	10,288	1,218	319	-	11	11,836
Loss carried forward	238,159	8,482	-	-	16,874	263,515
Financial derivative	36,281	112	(23,364)	-	-	13,029
Depreciation and amortisation	36,259	1,747	-	-	1,119	39,125
Investments in joint ventures	23,526	-	-	-	(40)	23,486
Provision for mine rehabilitation	5,548	958	-	-	-	6,506
Provision for decommissioning	601	297	-	-	-	898
Allowance for slow moving of spare part	1,933	203	-	-	-	2,136
Other reserves	39,680	(3,315)	-	-	2,997	39,362
Others	52,207	3,366	(1,278)	-	(1,102)	53,193
Total	444,482	13,068	(24,323)	-	19,859	453,086
Deferred tax liabilities:						
Investments in joint ventures	(10,624)	(9,740)	-	-	2,706	(17,658)
Mining property rights	(396,380)	2,225	-	-	8,919	(385,236)
Financial derivative	(32)	-	(119)	-	-	(151)
Depreciation and amortisation	(127,422)	(29,829)	-	-	(10,044)	(167,295)
Fair value uplift from the acquisition of power plant in the People's Republic of China	(2,284)	-	-	(424)	(55)	(2,763)
Amortisation of fair value of building and equipment from the acquisition of power plants	931	80	-	-	1	1,012
Connection fee	(1,791)	(652)	-	-	(152)	(2,595)
Tax effect of currency translation on tax base	(10,134)	28,520	-	-	-	18,386
Others	(5,084)	(26)	-	-	(457)	(5,567)
Total	(552,820)	(9,422)	(119)	(424)	918	(561,867)
Net	(108,338)	3,646	(24,442)	(424)	20,777	(108,781)

Consolidated financial statements						
Baht'000						
	At 1 January 2018	Charged (credited) to profit or loss	Charged (credited) to other comprehensive income or expense	Increase (decrease) from business combination	Translation differences	At 31 December 2018
Deferred tax assets:						
Employee benefit obligation	386,833	14,978	(19,542)	-	(10,501)	371,768
Loss carried forward	8,611,891	(1,192,695)	-	-	(811,530)	6,607,666
Financial derivative	425,780	2,303	163,021	-	(2,301)	588,803
Depreciation and amortisation	1,278,636	205,137	-	-	(35,516)	1,448,257
Investments in joint ventures	767,524	-	-	-	(11,530)	755,994
Provision for mine rehabilitation	212,616	95,232	-	-	(1,093)	306,755
Provision for decommissioning	29,348	-	-	-	(208)	29,140
Allowance for slow moving of spare part	69,801	33,740	-	-	(348)	103,193
Other reserves	1,286,411	(42,740)	-	-	(136,776)	1,106,895
Others	1,738,373	142,261	20,537	-	154,725	2,055,896
Total	14,807,213	(741,784)	164,016	-	(855,078)	13,374,367
Deferred tax liabilities:						
Investments in joint ventures	(577,015)	(231,287)	-	-	161,625	(646,677)
Mining property rights	(12,589,878)	55,645	-	-	(305,127)	(12,839,360)
Financial derivative	(2,379)	-	(1,363)	-	(2,511)	(6,253)
Depreciation and amortisation	(5,467,234)	(504,288)	-	-	500,760	(5,470,762)
Fair value uplift from the acquisition of power plant in the People's Republic of China	(92,809)	-	-	(1,531)	5,657	(88,683)
Amortisation of fair value of building and equipment from the acquisition of power plants	33,068	2,593	-	-	(199)	35,462
Connection fee	(84,819)	39,773	-	-	3,919	(41,127)
Tax effect of currency translation on tax base	600,857	91,429	-	-	(3,856)	688,430
Others	(182,056)	10,132	-	-	22,192	(149,732)
Total	(18,362,265)	(536,003)	(1,363)	(1,531)	382,460	(18,518,702)
Net	(3,555,052)	(1,277,787)	162,653	(1,531)	(472,618)	(5,144,335)

Consolidated financial statements
Baht'000

	At 1 January 2017	Charged (credited) to profit or loss	Charged (credited) to other comprehensive income or expense	Decrease from business combination	Translation differences	At 31 December 2017
Deferred tax assets:						
Employee benefit obligation	368,632	41,346	10,838	-	(33,983)	386,833
Loss carried forward	8,533,399	287,864	-	-	(209,372)	8,611,891
Financial derivative	1,299,977	3,790	(792,941)	-	(85,046)	425,780
Depreciation and amortisation	1,299,189	59,292	-	-	(79,845)	1,278,636
Investments in joint ventures	842,944	-	-	-	(75,420)	767,524
Provision for mine rehabilitation	198,767	32,527	-	-	(18,678)	212,616
Provision for decommissioning	21,519	10,095	-	-	(2,266)	29,348
Allowance for slow moving of spare part	69,269	6,876	-	-	(6,344)	69,801
Other reserves	1,421,779	(112,493)	-	-	(22,875)	1,286,411
Others	1,870,570	114,230	(43,379)	-	(203,048)	1,738,373
Total	15,926,045	443,527	(825,482)	-	(736,877)	14,807,213
Deferred tax liabilities:						
Investments in joint ventures	(380,613)	(330,553)	-	-	134,151	(577,015)
Mining property rights	(14,202,560)	75,496	-	-	1,537,186	(12,589,878)
Financial derivative	(1,142)	-	(4,026)	-	2,789	(2,379)
Depreciation and amortisation	(4,565,592)	(1,012,329)	-	-	110,687	(5,467,234)
Fair value uplift from the acquisition of power plant in the People's Republic of China	(81,839)	-	-	(14,376)	3,406	(92,809)
Amortisation of fair value of building and equipment from the acquisition of power plants	33,354	2,718	-	-	(3,004)	33,068
Connection fee	(64,186)	(22,139)	-	-	1,506	(84,819)
Tax effect of currency translation on tax base	(363,113)	967,902	-	-	(3,932)	600,857
Others	(182,183)	(893)	-	-	1,020	(182,056)
Total	(19,807,874)	(319,798)	(4,026)	(14,376)	1,783,809	(18,362,265)
Net	(3,881,829)	123,729	(829,508)	(14,376)	1,046,932	(3,555,052)

	Separate financial statements US Dollar'000			
	At 1 January 2018	Charged (credited) to profit or loss	Charged (credited) to other comprehensive income or expense	At 31 December 2018
Deferred tax assets:				
Employee benefit obligation	1,568	86	121	1,775
Loss carried forward	8,818	(8,818)	-	-
Financial derivative	3,787	(1,330)	(1,824)	633
Tax effect of currency translation on tax base	18,800	2,025	-	20,825
Others	526	(226)	445	745
Total	33,499	(8,263)	(1,258)	23,978
Deferred tax liability:				
Tax effect of currency translation on tax base	-	-	-	-
Total	-	-	-	-
Net	33,499	(8,263)	(1,258)	23,978

Separate financial statements				
US Dollar'000				
	At 1 January 2017	Charged (credited) to profit or loss	Charged (credited) to other comprehensive income or expense	At 31 December 2017
Deferred tax assets:				
Employee benefit obligation	1,441	135	(8)	1,568
Loss carried forward	9,958	(1,140)	-	8,818
Financial derivative	16,271	5	(12,489)	3,787
Tax effect of currency translation on tax base	-	18,800	-	18,800
Others	1,396	(73)	(797)	526
Total	29,066	17,727	(13,294)	33,499
Deferred tax liability:				
Tax effect of currency translation on tax base	(7,095)	7,095	-	-
Total	(7,095)	7,095	-	-
Net	21,971	24,822	(13,294)	33,499

Separate financial statements
Baht'000

	At 1 January 2018	Charged (credited) to profit or loss	Charged (credited) to other comprehensive income or expense	Translation adjustment	At 31 December 2018
Deferred tax assets:					
Employee benefit obligation	51,248	2,804	3,954	(392)	57,614
Loss carried forward	288,183	(289,344)	-	1,161	-
Financial derivative	123,748	(42,746)	(57,800)	(2,703)	20,499
Tax effect of currency translation on tax base	614,444	66,301	-	(4,949)	675,796
Total	17,153	(7,278)	14,651	(369)	24,157
Net	1,094,776	(270,263)	(39,195)	(7,252)	778,066
Deferred tax liability:					
Tax effect of currency translation on tax base	-	-	-	-	-
Total	-	-	-	-	-
Net	1,094,776	(270,263)	(39,195)	(7,252)	778,066

Separate financial statements
Baht'000

	At 1 January 2017	Charged (credited) to profit or loss	Charged (credited) to other comprehensive income or expense	Translation adjustment	At 31 December 2017
Deferred tax assets:					
Employee benefit obligation	51,625	4,654	-	(5,031)	51,248
Loss carried forward	356,804	(36,852)	-	(31,769)	288,183
Financial derivative	582,989	(414)	(428,331)	(30,496)	123,748
Tax effect of currency translation on tax base	-	614,444	-	-	614,444
Total	49,999	(2,550)	(25,641)	(4,655)	17,153
Net	1,041,417	579,282	(453,972)	(71,951)	1,094,776
Deferred tax liability:					
Tax effect of currency translation on tax base	(254,188)	270,731	-	(16,543)	-
Total	(254,188)	270,731	-	(16,543)	-
Net	787,229	850,013	(453,972)	(88,494)	1,094,776

15.2 Income taxes

15.2.1 Income taxes for the years ended 31 December are as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Current tax:				
Current tax on profit for the year	118,031	117,298	3,823,967	3,975,690
Tax assessment	13,398	6,622	435,508	230,149
Withholding tax for dividends	18,165	13,361	582,213	453,904
Total current taxes	149,594	137,281	4,841,688	4,659,743
Deferred tax:				
Origination and reversal of temporary differences	39,547	(3,646)	1,268,277	(136,196)
Total deferred tax	39,547	(3,646)	1,268,277	(136,196)
Total tax expenses	189,141	133,635	6,109,965	4,523,547

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Current tax:				
Current tax on profit for the year	-	-	-	-
Total current tax	-	-	-	-
Deferred tax:				
Origination and reversal of temporary differences	8,263	(24,822)	270,263	(850,013)
Total deferred tax	8,263	(24,822)	270,263	(850,013)
Total tax expenses	8,263	(24,822)	270,263	(850,013)

15.2.2 The tax on the Group's profit before tax differs from the theoretical amount that would arise using the basic tax rate of the home country of the company as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Profit before tax	504,024	476,845	16,346,046	16,139,683
Tax calculated at a tax rate of 20%	100,805	95,369	3,269,209	3,227,937
Tax effect of:				
Income not subject to tax	(28,781)	(1,965)	(929,918)	(66,694)
Expenses not deductible for tax purpose	11,663	10,491	376,835	356,050
Tax losses for which no deferred income tax asset was recognised	33,965	28,063	1,097,421	952,400
Write-off deferred tax asset	17,404	-	562,337	-
Utilisation of previously unrecognised tax losses	(346)	-	(11,181)	-
Deferred income tax assets (liabilities) from exchange rate translation	405	(35,537)	13,073	(1,206,066)
Effect from difference of tax rate from the privilege of International Headquarter	324	395	10,465	13,416
Tax assessment	13,386	6,735	432,511	228,587
Withholding tax for dividends	18,165	13,361	586,929	453,458
Tax effect from different tax rates of foreign entities	16,882	24,311	545,456	825,083
Others	5,269	(7,588)	156,828	(260,624)
Tax expense	189,141	133,635	6,109,965	4,523,547

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Profit before tax	60,346	53,275	1,979,181	1,755,230
Tax calculated at a tax rate of 20%	12,069	10,655	395,836	351,046
Tax effect of:				
Income not subject to tax	(29,205)	(19,394)	(943,619)	(658,188)
Expenses not deductible for tax purpose	838	405	27,049	13,732
Write-off deferred tax assets	8,818	-	284,919	-
Recognition of previously unrecognised tax losses	18,760	18,781	606,158	637,375
Deferred income tax assets (liabilities) from exchange rate translation	234	(33,598)	7,571	(1,140,246)
Effect from difference of tax rate from the privilege of International Headquarter	(3,251)	(2,811)	(105,055)	(95,394)
Others	-	1,140	(2,596)	41,662
Income taxes	8,263	(24,822)	270,263	(850,013)

On 30 June 2015, the Revenue Department approved the Company as an International Headquarters (IHQ) for management, technical, and supportive services. The Company will receive tax privileges for 15 accounting periods, effective from 1 July 2015 to 31 December 2029. Tax privileges are as follows:

1. Corporate income tax exemption on net profit from providing services and royalties from its overseas affiliates.
2. Corporate income tax rate reduction from 20% to 10% on net profit from providing services and royalties from its Thai affiliates. However, the Company made a request to cancel this privilege on 11 February 2016.
3. Personal income tax rate reduction for expatriate employees of the IHQ to 15% of their income.

16 Deferred exploration and development expenditures and deferred overburden expenditures/stripping costs, net

Deferred exploration and development expenditures and deferred overburden expenditures/stripping costs, net as at 31 December consist of:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Current portion:				
- Deferred overburden expenditures/stripping costs	30,796	47,737	999,327	1,560,089
	30,796	47,737	999,327	1,560,089
Non-current portion:				
- Deferred exploration and development expenditures	707,539	686,057	22,959,502	22,420,953
- Deferred overburden expenditures/stripping costs	161,718	90,503	5,247,726	2,957,743
	869,257	776,560	28,207,228	25,378,696
Total deferred exploration and development expenditures and deferred overburden expenditures/stripping costs, net	900,053	824,297	29,206,555	26,938,785

Movement of deferred exploration and development expenditures and deferred overburden expenditures/stripping costs, net for the years ended 31 December are as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
As at 1 January				
Cost	3,905,856	3,202,890	127,646,935	114,761,786
Less Accumulated amortisation	(3,080,060)	(2,428,630)	(100,659,146)	(87,019,480)
Allowance for impairment	(1,499)	(1,499)	(49,004)	(53,727)
Net book amount	824,297	772,761	26,938,785	27,688,579
For the years ended 31 December				
Opening net book amount	824,297	772,761	26,938,785	27,688,579
Additions	829,846	628,582	26,812,960	21,332,816
Amortisation	(695,475)	(616,204)	(22,471,316)	(20,912,724)
Translation differences	(58,615)	39,158	(2,073,874)	(1,169,886)
Net book amount	900,053	824,297	29,206,555	26,938,785

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
As at 31 December				
Cost	4,650,423	3,905,856	150,905,307	127,646,935
<u>Less</u> Accumulated amortisation	(3,748,871)	(3,080,060)	(121,650,094)	(100,659,146)
Allowance for impairment	(1,499)	(1,499)	(48,658)	(49,004)
Net book amount	900,053	824,297	29,206,555	26,938,785

The majority of additions and amortisation represents overburden expenditures. The Group presents the amortisation incurred during the year under cost of sales in the consolidated statements of comprehensive income.

17 Mining property rights, net

Movements of mining property rights for the years ended 31 December are as follows:

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening net book amount	1,767,883	1,826,113	57,776,009	65,430,907
Amortisation	(57,117)	(58,230)	(1,845,493)	(1,976,260)
Translation differences	-	-	(416,505)	(5,678,638)
Closing net book amount	1,710,766	1,767,883	55,514,011	57,776,009

18 Goodwill

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
As at 1 January				
Cost	524,267	524,330	17,133,737	18,787,098
<u>Less</u> Allowance for impairment	(147)	-	(5,013)	-
Net book amount	524,120	524,330	17,128,724	18,787,098
For the years ended 31 December				
Opening net book amount	524,120	524,330	17,128,724	18,787,098
Decrease from disposal of subsidiary	(147)	(63)	(4,750)	(2,208)
Impairment charge	-	(147)	-	(5,013)
Reversal of impairment charge	147	-	4,750	-
Translation differences	-	-	(121,124)	(1,651,153)
Closing net book amount	524,120	524,120	17,007,600	17,128,724
As at 31 December				
Cost	524,120	524,267	17,007,600	17,133,737
<u>Less</u> Allowance for impairment	-	(147)	-	(5,013)
Net book amount	524,120	524,120	17,007,600	17,128,724

Goodwill is not considered as taxable expenses for the Group.

Goodwill allocation for each material cash generation unit (CGU) is presented as:

Consolidated financial statements						
	2018			2017		
	Indonesia	Australia	Mongolia	Indonesia	Australia	Mongolia
Goodwill allocation						
- US Dollar'000	17,418	466,928	38,506	17,418	466,928	38,506
- Baht'000	565,204	15,151,727	1,249,515	569,229	15,259,634	1,258,414

Impairment tests for goodwill

Goodwill arising from the acquisition of a group of mining businesses in each country is tested annually for impairment by comparing the carrying amount to the recoverable amount for each cash-generating unit, which is determined based on value-in-use calculations. These calculations use cash flow projections based on financial budgets approved by the management covering the mine lives in each country. Cash inflow from revenues is based on the estimated coal production quantities of each mine and estimated selling prices and cash outflow using the inflation rate for the five-year period and using the constant inflation rate for periods beyond five years. The discount rates used are WACC for mines in each country as detailed below:

Consolidated financial statements						
	2018			2017		
	Indonesia	Australia	Mongolia	Indonesia	Australia	Mongolia
Inflation rate used in the projections of cash outflow	4.2%	2.2% to 2.4%	3.4%	1.8% to 2.1%	1.9% to 2.6%	1.9% to 2.5%
Discount rate	10.21%	9.15%	13.35%	9.9%	9.15%	13%

If the discount rate used in the calculation is increased by 0.5% per annum, there is no impairment of goodwill recorded in the consolidated financial statements for the year ended 31 December 2018.

19 Other non-current assets

Other non-current assets consist of:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Value added tax receivable	28,319	18,237	918,942	595,994
Prepaid income tax	43,267	158,233	1,404,001	5,171,188
Deposits	17,259	23,601	560,060	771,307
Advances to a joint venture	5,601	5,505	181,736	179,921
Rights to operate the power plants, net	6,558	6,961	212,815	227,479
Land used right, net	10,783	12,531	349,902	409,529
Restricted deposits at banks (Note 13.3)	13,425	5,814	435,626	190,010
Accrued income	32,705	18,600	1,061,274	607,856
Others	61,989	57,300	2,011,540	1,872,643
Total other non-current assets	219,906	306,782	7,135,896	10,025,927

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Prepaid income tax	140	1,460	4,556	47,698
Deposits	247	238	8,009	7,785
Others	2,756	2,617	89,440	85,517
Total other non-current assets	3,143	4,315	102,005	141,000

20 Short-term loans from financial institutions

Movements of short-term loans from financial institutions for the years ended 31 December are as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	419,100	282,967	13,696,553	10,138,897
Cash flows:				
Additions	872,232	1,185,889	28,182,416	40,246,691
Repayments of loans	(775,225)	(1,061,975)	(25,048,057)	(36,041,314)
Other non-cash movements:				
(Gains) losses on exchange rate	(3,243)	6,117	(104,280)	207,605
Translation differences	(991)	6,102	(116,461)	(855,326)
Closing net book amount	511,873	419,100	16,610,171	13,696,553

As at 31 December 2018, short-term loans from financial institutions are unsecured liabilities, which were denominated in CNY of 243.58 million or equivalent to US Dollar 35.45 million, Thai Baht of 7,120 million or equivalent to US Dollar 219.42 million, and US Dollar of 257 million (31 December 2017: CNY loan of 114.39 million or equivalent to US Dollar 17.55 million, Thai Baht loan of 1,750 million or equivalent to US Dollar 53.55 million, and US Dollar loan of 348 million). Such loans bore interest at the rates of 1.71% to 5.67% per annum (31 December 2017: 1.70% to 5.22% per annum). The repayments are due within one year.

The fair value of short-term loans equal their carrying amount, as short-term borrowings had a short period of maturity.

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	348,000	215,000	11,372,953	7,703,601
Cash flows:				
Additions	700,102	922,182	22,620,798	31,297,014
Repayments of loans	(577,837)	(795,299)	(18,670,302)	(26,990,865)
Other non-cash movements:				
(Gains) losses on exchange rate	(3,711)	6,117	(119,500)	207,605
Translation differences	-	-	(64,350)	(844,402)
Closing net book amount	466,554	348,000	15,139,599	11,372,953

As at 31 December 2018, short-term loans from financial institutions are unsecured liabilities, which were denominated in US Dollar of 257 million and Thai Baht loan of 6,800 million or equivalent to US Dollar 209.55 million (31 December 2017: US Dollar of 348 million). Such loans bore interest at the rates of 1.71% to 3.72% per annum (2017: 1.95% to 2.50% per annum). The repayments are due within one year.

The fair value of short-term loans equal their carrying amount, as short-term borrowings had a short period of maturity.

21 Long-term borrowings, net

As at 31 December, long-term borrowings consist of:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
<u>Current portion</u>				
Long-term loans from financial institutions, net	369,057	147,423	11,975,824	4,817,914
Finance lease liabilities, net	624	5,905	20,263	192,999
Total current portion, net	369,681	153,328	11,996,087	5,010,913
<u>Non-current portion</u>				
Long-term loans from financial institutions, net	1,427,814	1,457,675	46,332,295	47,638,137
Private placement notes, net	224,180	224,562	7,274,564	7,338,888
Finance lease liabilities, net	2,837	8,281	92,076	270,618
Total non-current portion, net	1,654,831	1,690,518	53,698,935	55,247,643
Total long-term borrowings, net	2,024,512	1,843,846	65,695,022	60,258,556

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Long-term loans from financial institutions				
- Current portion, net	235,992	136,787	7,657,887	4,470,308
- Non-current portion, net	1,015,418	963,268	32,950,113	31,480,476
Total long-term borrowings, net	1,251,410	1,100,055	40,608,000	35,950,784

Long-term loans from financial institutions

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Long-term US Dollar loans	1,357,000	1,229,953	44,034,379	40,195,971
Long-term foreign currency loans	448,414	383,894	14,550,947	12,545,992
Total	1,805,414	1,613,847	58,585,326	52,741,963
<u>Less</u> Deferred financing service fee	(8,543)	(8,749)	(277,207)	(285,912)
	1,796,871	1,605,098	58,308,119	52,456,051
<u>Less</u> Current portion of long-term loans from financial institutions	(369,057)	(147,423)	(11,975,824)	(4,817,914)
Long-term loans from financial institutions, net	1,427,814	1,457,675	46,332,295	47,638,137

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Long-term US Dollar loans	1,257,000	1,105,000	40,789,399	36,112,395
<u>Less</u> Deferred financing service fee	(5,590)	(4,945)	(181,399)	(161,611)
	1,251,410	1,100,055	40,608,000	35,950,784
<u>Less</u> Current portion of long-term loans from financial institutions	(235,992)	(136,787)	(7,657,887)	(4,470,308)
Long-term loans from financial institutions, net	1,015,418	963,268	32,950,113	31,480,476

Movements in long-term loans from financial institutions of the Group for the years ended 31 December are as follows:

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening net balance	1,605,098	1,469,948	52,456,051	52,669,276
Cash flows:				
Additions	497,644	813,705	16,079,238	27,615,528
Repayment of loans	(276,349)	(705,100)	(8,929,024)	(23,929,668)
Financing service fees	(2,551)	(1,954)	(82,414)	(66,331)
Other non-cash movements:				
Amortisation of deferred financing service fees	2,660	3,044	85,952	103,295
Net (gains) losses on exchange rate	(945)	997	(30,527)	33,838
Translation differences	(28,686)	24,458	(1,271,157)	(3,969,887)
Closing net balance	1,796,871	1,605,098	58,308,119	52,456,051

Separate financial Statement				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening net balance	1,100,055	1,022,990	35,950,784	36,654,454
Cash flows:				
Additions	289,000	400,000	9,337,792	13,575,200
Repayment of loans	(137,000)	(323,150)	(4,426,566)	(10,967,065)
Financing service fees	(2,137)	(1,311)	(69,033)	(44,513)
Other non-cash movements:				
Amortisation of deferred financing service fees	1,492	1,526	48,192	51,800
Translation differences	-	-	(233,169)	(3,319,092)
Closing net balance	1,251,410	1,100,055	40,608,000	35,950,784

During 2018, the Group made an early repayment of Australian Dollar loans of 170 million (2017: Australian Dollar 90 million). The Group did not pay penalties of early repayment of loans.

As at 31 December, long-term loans of subsidiaries were unsecured loans from banks. Details of loans are shown as follow:

Million US Dollar (Original currency)				
No.	2018	2017	Interest rate	Due of loan payment
1	-	3.00	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 24 December 2016 to expiry of agreement on 24 December 2018.
2	100.00	100.00	BBA LIBOR plus applicable fixed margin	Repayment on 25 July 2019.
	100.00	103.00		

Million Australian Dollar (Original currency)				
No.	2018	2017	Interest rate	Due of loan payment
1	330.00	380.00	BBSY plus applicable fixed margin	Repayment on 18 December 2022.
2	20.00	30.00	BBSY plus applicable fixed margin	Repayment on 18 December 2020.
	350.00	410.00		

Million CNY (Original currency)				
No.	2018	2017	Interest rate	Due of loan payment
1	53.73	72.65	BBA LIBOR plus applicable fixed margin	Repayment every 3 months commencing 21 February 2018 to expiry of agreement on 21 August 2020.
2	43.87	62.67	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 11 June 2018 to expiry of agreement on 9 June 2020.
3	5.43	7.75	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 11 June 2018 to expiry of agreement on 9 June 2020.
4	2.01	-	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 11 June 2018 to expiry of agreement on 9 June 2020.
5	203.30	-	BBA LIBOR plus applicable fixed margin	Repayment every 3 months commencing 11 April 2018 to expiry of agreement on 11 January 2027.
	308.34	143.07		

Million Baht (Original currency)				
No.	2018	2017	Interest rate	Due of loan payment
1	2,100.00	2,100.00	THB FIX plus applicable fixed margin	Repayment every 6 months commencing 27 June 2019 to expiry of agreement on 27 December 2021.
2	1,500.00	-	THB FIX plus applicable fixed margin	Repayment every 6 months commencing 21 August 2022 to expiry of agreement on 21 August 2025.
3	1,500.00	-	THB FIX plus applicable fixed margin	Repayment every 6 months commencing 20 December 2022 to expiry of agreement on 20 December 2025.
	5,100.00	2,100.00		

As at 31 December, long-term loans of the Company were unsecured loans denominated in US Dollar as details below:

Million US Dollar (Original currency)				
No.	2018	2017	Interest rate	Due of loan payment
1	-	75.00	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 21 September 2016 to expiry of agreement on 14 September 2018.
2	23.00	45.00	Fixed interest rate	Repayment every 6 months commencing 12 November 2015 to expiry of agreement on 12 November 2019.
3	80.00	100.00	BBA LIBOR plus applicable fixed margin	Repayment annually commencing 27 June 2018 to expiry of agreement on 25 June 2022.
4	100.00	100.00	BBA LIBOR plus applicable fixed margin	Repayment of principal as agreement expires on 25 December 2022.
5	90.00	90.00	BBA LIBOR plus applicable fixed margin	Repayment of principal as agreement expires on 31 March 2019.
6	75.00	75.00	BBA LIBOR plus applicable fixed margin	Repayment of principal as agreement expires on 11 April 2019.

Million US Dollar (Original currency)				
No.	2018	2017	Interest rate	Due of loan payment
7	40.00	60.00	BBA LIBOR plus applicable fixed margin	Repayment annually commencing 27 April 2016 to expiry of agreement on 26 April 2020.
8	15.00	15.00	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 6 February 2021 to expiry of agreement on 5 February 2025.
9	85.00	85.00	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 6 February 2021 to expiry of agreement on 5 February 2025.
10	60.00	60.00	BBA LIBOR plus applicable fixed margin	Repayment of principal as agreement expires on 22 December 2021.
11	160.00	160.00	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 22 March 2020 to expiry of agreement on 23 March 2022.
12	240.00	240.00	BBA LIBOR plus applicable fixed margin	Repayment of principal as agreement expires on 22 December 2021.
13	50.00	-	BBA LIBOR plus applicable fixed margin	Repayment annually commencing 26 June 2021 to expiry of agreement on 26 June 2025.
14	75.00	-	BBA LIBOR plus applicable fixed margin	Repayment on 14 September 2019, 2020 and 2023.
15	100.00	-	BBA LIBOR plus applicable fixed margin	Repayment of principal as agreement expires on 7 December 2022.
16	34.00	-	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 10 September 2019 to expiry of agreement on 10 September 2025.
17	30.00	-	BBA LIBOR plus applicable fixed margin	Repayment every 6 months commencing 18 June 2020 to expiry of agreement on 18 December 2025.
	1,257.00	1,105.00		

As at 31 December, the effective interest rates are as follows:

	Consolidated financial statements		Separated financial statements	
	2018 %	2017 %	2018 %	2017 %
Loans from financial institutions	2.87 - 5.74	0.97 - 4.99	3.67 - 5.71	3.27 - 4.57
Finance lease	6.49	6.49	-	-

Interest rate risk on long-term loans of the Group is as follows:

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
- at fixed rates	23,000	45,000	746,345	1,470,641
- at floating rates	1,782,414	1,568,847	57,838,981	51,271,322
Total loans	1,805,414	1,613,847	58,585,326	52,741,963

Separate financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
- at fixed rates	23,000	45,000	746,345	1,470,641
- at floating rates	1,234,000	1,060,000	40,043,054	34,641,754
Total loans	1,257,000	1,105,000	40,789,399	36,112,395

The fair value of long-term borrowings equal their carrying amount, as the impact of discounting is not significant. The fair value is based on discounted cash flows using a discount rate based on the current lending rate as at the reporting date and are within level 2 of the fair value hierarchy.

Maturities of long-term loans from financial institutions are as follows:

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Within 1 year	369,648	147,636	11,994,998	4,824,890
Later than 1 year but not later than 5 years	1,229,316	1,366,211	39,891,051	44,648,983
Later than 5 years	206,450	100,000	6,699,277	3,268,090
Total loans	1,805,414	1,613,847	58,585,326	52,741,963

Separate financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Within 1 year	236,400	137,000	7,671,133	4,477,283
Later than 1 year but not later than 5 years	906,600	868,000	29,418,989	28,367,022
Later than 5 years	114,000	100,000	3,699,277	3,268,090
Total loans	1,257,000	1,105,000	40,789,399	36,112,395

The Group is required to comply with certain criteria and conditions; for example, maintaining debt to equity ratio.

Private Placement Notes

As at 31 December 2018 and 2017, Private Placement Notes amounting to US Dollar 225 million which are unsecured liabilities comprise senior debt notes to the institutional investor in the United States of America with a range of maturities of 10 to 15 years. The notes have the weighted average effective interest rate of 4.55% per annum.

The fair value of current Private Placement Notes equals their carrying amount, as the impact of discount is not significant. The fair values are based on discounted cash flows using the weighted average interest rate of 5.28% per annum. This fair value estimation is in level 2.

Finance lease liabilities

Minimum lease payments under finance lease liabilities are as follows:

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Not later than 1 year	624	5,905	20,263	192,999
Later than 1 year but not later than 5 years	2,837	8,281	92,076	270,618
Present value of finance lease liabilities	3,461	14,186	112,339	463,617
Finance lease liabilities:				
- Current portion	624	5,905	20,263	192,999
- Non-current portion	2,837	8,281	92,076	270,618
Total finance lease liabilities	3,461	14,186	112,339	463,617

22 Debentures, net

Consolidated and separate financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
US Dollar debentures	200,000	150,000	6,489,960	4,902,135
Thai Baht debentures	1,286,603	1,445,799	41,750,000	47,250,000
<u>Less</u> Deferred financing service fee	(1,655)	(1,905)	(53,697)	(62,260)
	1,484,948	1,593,894	48,186,263	52,089,875
<u>Less</u> Current portion of debentures	(87,818)	(168,287)	(2,849,677)	(5,499,759)
Debentures, net	1,397,130	1,425,607	45,336,586	46,590,116

Movements of debentures for the years ended 31 December are as follows:

Consolidated and separate financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening net balance	1,593,894	1,187,804	52,089,875	42,559,861
Cash flows:				
Additions	50,000	286,570	1,615,535	9,725,609
Repayment of debentures	(177,867)	-	(5,746,993)	-
Financing service fee	(67)	(409)	(2,170)	(13,873)
Other non-cash movements:				
Amortisation of deferred financing fee	317	310	10,257	10,542
Net losses on exchange rate	18,671	119,619	603,262	4,059,576
Translation differences	-	-	(383,503)	(4,251,840)
Closing net balance	1,484,948	1,593,894	48,186,263	52,089,875

Debentures are unsecured liabilities. However, the Group is required to comply with certain procedure and conditions; for example, maintaining debt to equity ratio.

The interest rates on the debentures of the Group are as follows:

	Consolidated and separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
- at fixed rates	1,486,603	1,595,799	48,239,960	52,152,135
- at floating rates	-	-	-	-
Total debentures	1,486,603	1,595,799	48,239,960	52,152,135

The weighted average effective interest rate of debentures of the Group after recognising the effect from interest rate swap contracts is 4.53% per annum (2017: 4.35% per annum).

Book value and fair value of debentures are as follow:

	Consolidated and separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Book value	1,486,603	1,595,799	48,239,960	52,152,135
Fair value	1,556,849	1,674,004	50,519,434	54,707,965

Fair value estimation of debentures is in level 2. The fair values are based on discounted cash flows carrying interest rates of debentures published in Thai Bond Market Association.

Maturities of debentures are as follows:

	Consolidated and separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Within 1 year	87,828	168,294	2,850,000	5,500,000
Later than 1 year but not later than 5 years	667,723	494,173	21,667,470	16,150,000
Later than 5 years	731,052	933,332	23,722,490	30,502,135
Total debentures	1,486,603	1,595,799	48,239,960	52,152,135

23 Other current liabilities

As at 31 December, other current liabilities consist of:

Consolidated financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Accrued expenses	308,821	220,497	10,021,188	7,206,082
Value added tax payable	8,984	9,564	291,526	312,579
Withholding tax payable	6,227	9,795	202,076	320,102
Other payables for purchase of property, plant and equipment	22,848	20,815	741,421	680,249
Accrued expense for purchase of investment	2,784	4,844	90,347	158,307
Others	456	3,754	14,768	122,704
Total other current liabilities	350,120	269,269	11,361,326	8,800,023

Separate financial statements				
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Accrued expenses	14,596	6,054	473,646	197,885
Value added tax payable	410	273	13,308	8,923
Withholding tax payable	724	695	23,498	22,707
Other payables for purchase of property, plant and equipment	686	79	22,256	2,576
Total other current liabilities	16,416	7,101	532,708	232,091

24 Share capital and premium on share capital

	Number of registered shares Share	Issued and paid-up share capital		Share premium US Dollar'000	Total US Dollar'000
		Number of shares Share	Ordinary shares US Dollar'000		
As at 1 January 2017	5,163,757,100	4,937,170,022	143,496	417,938	561,434
Add Increase share capital	1,500,000	224,755,493	6,465	25,686	32,151
As at 31 December 2017	5,165,257,100	5,161,925,515	149,961	443,624	593,585
As at 31 December 2018	5,165,257,100	5,161,925,515	149,961	443,624	593,585

	Number of registered shares Share	Issued and paid-up share capital		Share premium Baht'000	Total Baht'000
		Number of shares Share	Ordinary shares Baht'000		
As at 1 January 2017	5,163,757,100	4,937,170,022	4,937,170	14,479,494	19,416,664
Add Increase share capital	1,500,000	224,755,493	224,755	892,944	1,117,699
As at 31 December 2017	5,165,257,100	5,161,925,515	5,161,925	15,372,438	20,534,363
As at 31 December 2018	5,165,257,100	5,161,925,515	5,161,925	15,372,438	20,534,363

At the Annual General Shareholders' meeting on 4 April 2017, the shareholders approved an increase in the Company's registered share capital of Baht 1,500,000 at a par value of Baht 1 each from Baht 5,163,757,100 to Baht 5,165,257,100.

During 2017, the warrants (BANPU-W3) were exercised and the Company received additional paid-up share capital as below:

Exercise date	Number of warrants exercised Unit	Number of ordinary shares issued Share	Ordinary shares		Date registered with The Ministry of Commerce	Effective date as registered securities of SET
			US Dollar' 000	Baht' 000		
3 March 2017	123,464,191	123,464,191	3,525	123,464	7 March 2017	9 March 2017
5 June 2017	99,992,461	101,291,302	2,940	101,291	7 June 2017	9 June 2017
Total	223,456,652	224,755,493	6,465	224,755		

The BANPU-W3 warrants expired on 6 June 2017. The outstanding number of these warrants issued to shareholders but not exercised after the expiry date are 3,130,426 units.

25 Legal reserve

The movement of legal reserve for the year ended 31 December is as follow:

Consolidated and separate financial statements						
	US Dollar'000			Baht'000		
	Company	Subsidiaries	Total	Company	Subsidiaries	Total
At 1 January 2017	12,585	80,980	93,565	426,782	2,655,327	3,082,109
Appropriation during the year	2,411	-	2,411	89,411	-	89,411
At 31 December 2017	14,996	80,980	95,976	516,193	2,655,327	3,171,520
At 31 December 2018	14,996	80,980	95,976	516,193	2,655,327	3,171,520

Under the Public Company Act, the Company is required to set aside a statutory reserve of at least 5% of its net profit after accumulated deficit is brought forward (if any) until the reserve reaches not less than 10% of the registered capital. The legal reserve is non-distributable. During the year ended 31 December 2017, the Company set aside legal reserve totalling Baht 89.41 million or equivalent to US Dollar 2.41 million. As at 31 December 2017, the legal reserve was fully recognised at 10% of registered capital.

26 Other reserves

Other reserves of the Group comprised the reserves of a joint venture in the People's Republic of China. These reserves are in accordance with the regulation of a government unit in the People's Republic of China with the objective of future development, safety, transformation and environment.

27 Share-based payment

At the annual general shareholders' meeting of Banpu Power Public Company Limited (BPP) on 3 April 2017, the shareholders approved the issuance of ordinary shares to the directors and employees of BPP and subsidiaries (BPP-ESOP) based on their position, duty, and responsibility towards BPP and subsidiaries. The terms and conditions of the rights to purchase ordinary shares are summarised as follows:

Descriptions	Detail		
Number of issued and offered shares	Not exceeding 30,000,000 shares. 18,300,000 shares to be allocated and not exceeding 11,700,000 shares, which BPP's ad-hoc Compensation Committee will consider and allocate as appropriate.		
Term of the plan	Not exceeding 5 years from the date of approval by BPP shareholders' meeting. The offering will be completed by 19 October 2021.		
Period of the offering	BPP will make the primary offering within 1 year from the date approved by the shareholders' meeting.		
Exercise price, period and conditions	Exercise price (Baht per share)	Exercise period	Number of exercised shares
	23.10	The date of issue and offering ordinary shares - 19 Oct 2021	10% of the total allocated shares
	25.20	From 19 October 2017 to 19 October 2021	15% of the total allocated shares
	27.30	From 19 October 2018 to 19 October 2021	20% of the total allocated shares
	29.40	From 19 October 2019 to 19 October 2021	25% of the total allocated shares
	31.50	From 19 October 2020 to 19 October 2021	30% of the total allocated shares
Subscription dates	ESOP can be exercised 4 times a year on the last business day of March, June, September and December from the first exercise date, except for the last exercise date, which is 19 October 2021.		

At the Annual General Shareholders' meeting on 2 April 2018, the shareholders approved the new issuance of the ordinary shares of the Company under the Employee Stock Option Plan for directors and employees of the Company and subsidiaries (BPP-ESOP) to a director in the amount of 300,000 shares

The Group has no legal or constructive obligation to repurchase or settle such rights in cash.

The Group recognised and presented the rights to purchase ordinary shares for the selected directors and employees of Banpu Group under BPP-W and the right to purchase ordinary shares for the directors and employees of BPP under BPP-ESOP totalling Baht 13 million or equivalent to US Dollar 0.4 million (2017: Baht 33.34 million or equivalent to US Dollar 0.98 million) in the consolidated statement of changes in equity for the year ended 31 December 2018.

The number of the rights to purchase ordinary shares and the related weighted average exercise prices are as follows:

Consolidated financial statements

	2018		2017	
	Weighted average exercise price Baht per share	Number of warrants	Weighted average exercise price Baht per share	Number of warrants
At 1 January	28.90	41,910,300	28.35	28,800,000
Granted during the period	29.09	300,000	28.35	18,300,000
Exercised during the period	23.10	(140,000)	23.94	(5,189,700)
At 31 December	28.92	42,070,300	28.90	41,910,300

For share-based payment to the directors and employees of BPP and subsidiaries under BPP-ESOP, the weighted average fair value of granted rights during the period determined using the Black-Scholes valuation model was Baht 2.11 per unit. The significant inputs into the model were a weighted average share price of Baht 25.75 at the grant date, exercise price of Baht 23.10 to Baht 31.50, volatility of 20%, dividend yield of 4.60%, an expected life of 5 years, and an annual risk-free interest rate of 2.13%.

On 30 June 2017 rights totalling 2,543,000 units were exercised causing BPP to have additional ordinary shares of 2,543,000. This was also done on 29 September 2017, 120,000 units for 120,000 shares; and 29 December 2017 2,526,700 units for 2,526,700 shares. BPP registered the paid-up addition of share capital with the Ministry of Commerce on 5 July 2017, 4 October 2017, and 5 January 2018 respectively.

On 30 March 2018 rights totalling 140,000 units were exercised causing BPP to have additional ordinary shares of 140,000. BPP registered the paid-up addition of share capital with the Ministry of Commerce on 5 April 2018.

28 Other components of equity

Movements of other components of equity for the years ended 31 December are as follows:

Consolidated financial statements					
US Dollar'000					
	Surplus on changes of percentage shareholding in subsidiaries	Fair value reserve of available- for-sale investments	Cash flow hedge	Translation differences	Total
Opening balance as at 1 January 2017, net of taxes	312,296	(6,673)	(42,571)	(501,300)	(238,248)
Changes in fair value	-	5,491	-	-	5,491
Share of other comprehensive income	-	-	63,352	192,940	256,292
Tax charge (credit) to other comprehensive income	-	(1,158)	(34,159)	-	(35,317)
Closing balance as at 31 December 2017, net of taxes	312,296	(2,340)	(13,378)	(308,360)	(11,782)
Opening balance as at 1 January 2018, net of taxes	312,296	(2,340)	(13,378)	(308,360)	(11,782)
Changes portion in investment in subsidiaries	87	-	-	-	87
Changes in fair value	-	(2,457)	-	-	(2,457)
Share of other comprehensive income	-	-	(21,265)	(137,942)	(159,252)
Tax charge (credit) to other comprehensive income	-	523	15,414	-	15,982
Closing balance as at 31 December 2018, net of taxes	312,383	(4,274)	(19,229)	(446,302)	(157,422)

Consolidated financial statements

Baht'000

	Surplus on changes of percentage shareholding in subsidiaries	Fair value reserve of available- for-sale investments	Cash flow hedge	Translation differences	Total
Opening balance as at 1 January 2017, net of taxes	11,338,447	(239,059)	(1,525,361)	(12,090,369)	(2,516,342)
Changes in fair value	-	182,891	-	-	182,891
Share of other comprehensive income	-	-	2,171,724	-	2,171,724
Tax charge (credit) to other comprehensive income	-	(38,432)	(1,184,209)	-	(1,222,641)
Translation differences	-	18,201	100,634	(1,034,146)	(915,311)
Closing balance as at 31 December 2017, net of taxes	11,338,447	(76,399)	(437,212)	(13,124,515)	(2,299,679)
Opening balance as at 1 January 2018, net of taxes	11,338,447	(76,399)	(437,212)	(13,124,515)	(2,299,679)
Changes portion in investment in subsidiaries	2,827	-	-	-	2,827
Changes in fair value	-	(78,253)	-	-	(78,253)
Share of other comprehensive income	-	-	(692,236)	-	(692,236)
Tax charge (credit) to other comprehensive income	-	16,670	505,466	-	522,136
Translation differences	-	(688)	14	(5,147,843)	(5,148,517)
Closing balance as at 31 December 2018, net of taxes	11,341,274	(138,670)	(623,968)	(18,272,358)	(7,693,722)

Separate financial statements

US Dollar'000

	Fair value reserve of available-for-sale investments	Cash flow hedge reserve	Total
Opening balance as at 1 January 2017, net of taxes	215	14,086	14,301
Changes in fair value	4,292	12,245	16,537
Tax charge (credit) to other comprehensive income (expense)	(797)	(12,488)	(13,285)
Closing balance as at 31 December 2017, net of taxes	3,710	13,843	17,553
Opening balance as at 1 January 2018, net of taxes	3,710	13,843	17,553
Changes in fair value	(2,200)	7,644	5,444
Tax charge (credit) to other comprehensive income (expense)	445	(1,825)	(1,380)
Closing balance as at 31 December 2018, net of taxes	1,955	19,662	21,617

Separate financial statements

Baht'000

	Fair value reserve of available-for-sale investments	Cash flow hedge reserve	Translation differences	Total
Opening balance as at 1 January 2017, net of taxes	7,713	504,683	3,440,120	3,952,516
Changes in fair value	143,423	406,488	-	549,911
Tax charge (credit) to other comprehensive income (expense)	(26,592)	(423,480)	-	(450,072)
Translation differences	(3,288)	(35,323)	(3,854,651)	(3,893,262)
Closing balance as at 31 December 2017, net of taxes	121,256	452,368	(414,531)	159,093
Opening balance as at 1 January 2018, net of taxes	121,256	452,368	(414,531)	159,093
Changes in fair value	(69,680)	233,063	-	163,383
Tax charge (credit) to other comprehensive income (expense)	14,099	(56,769)	-	(42,670)
Translation differences	(2,218)	9,350	(343,809)	(336,677)
Closing balance as at 31 December 2018, net of taxes	63,457	638,012	(758,340)	(56,871)

29 Non-controlling interests

Movements of non-controlling interests for the years ended 31 December are as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	600,180	536,620	19,614,386	19,227,453
Dividend paid of subsidiaries	(94,191)	(76,866)	(3,024,567)	(2,609,879)
Net effect from changes in shareholding in subsidiaries	1,936	1,837	63,111	62,379
Issued warrants of a subsidiary	57	144	1,807	4,719
Share of net profit from subsidiaries	109,408	109,633	3,542,350	3,715,892
Share of other comprehensive income (expense) of subsidiaries				
- Remeasurement of post-employment benefits obligations, net of taxes	975	(483)	32,580	(4,348)
- Cash flow hedge reserve, net of taxes	744	469	24,351	19,836
- Translation differences	(4,241)	28,826	(301,668)	(801,666)
Closing balance	614,868	600,180	19,952,350	19,614,386

30 Expenses by nature

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Staff costs	325,369	312,815	10,512,871	10,616,306
Depreciation and amortisation	909,007	821,216	29,370,617	27,870,424
Write-off of assets	1,863	2,328	60,193	79,008
Operating leases	41,980	33,591	1,356,402	1,140,027
Allowance for slow-moving of spare parts and machinery supplies	2,131	895	68,854	30,363
Allowance for slow-moving of coal	-	969	-	32,878
Provision of net realisable value of inventory	4,042	-	130,600	-

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Staff costs	27,067	22,523	874,563	764,386
Depreciation and amortisation	1,351	1,743	43,667	59,162
Write-off of assets	1	11	12	370
Operating leases	1,332	1,239	43,042	42,065
Allowance for slow-moving of coal	-	969	-	32,878
Management expense to related parties	6,733	6,453	217,532	218,672

31 Earnings per share

31.1 Basic earnings per share

Basic earnings per share is calculated by dividing the net profit attributable to shareholders by the weighted average number of ordinary shares in issue and paid-up during the year.

Basic earnings per share for the years ended 31 December are as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
US Dollar				
Net profit attributable to ordinary shareholders (US Dollar'000)	205,475	233,577	52,083	78,097
Weighted average ordinary shares (Thousand shares)	5,161,926	5,096,370	5,161,926	5,096,370
Basic earnings per share (US Dollar)	0.040	0.046	0.010	0.015
Baht				
Net profit attributable to ordinary shareholders (Baht'000)	6,693,731	7,900,243	1,708,918	2,605,243
Weighted average ordinary shares (Thousand shares)	5,161,926	5,096,370	5,161,926	5,096,370
Basic earnings per share (Baht)	1.297	1.550	0.331	0.511

31.2 Diluted earnings per share

Diluted earnings per share is calculated by dividing the diluted net profit attributable to shareholders by adjusting the weighted average number of ordinary shares outstanding to assume conversion of all dilutive potential ordinary shares. The Company has one category of dilutive potential ordinary shares: the warrants (BANPU-W3). The Company assumed to convert all warrants into ordinary shares and net profit is adjusted the effect of diluted profit from a subsidiary. For the warrant, a calculation is made to determine the number of shares that could have been acquired at fair value (determined as the average annual market price of the Company's shares) based on the monetary value of the subscription rights attached to outstanding warrants.

Diluted earnings per share for the years ended 31 December are as follows:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
US Dollar				
Net profit attributable to ordinary shareholders (US Dollar'000)	205,475	233,577	52,083	78,097
Dilution effect from warrants issuance of a subsidiary	(3)	(19)	-	-
Net profit assumed the exercise of the warrants	205,472	233,558	52,083	78,097
Weighted average ordinary shares (Thousand shares)	5,161,926	5,096,370	5,161,926	5,096,370
Adjustment for:				
Assumed conversion of warrants	-	49,218	-	49,218
Weighted average number of ordinary shares for diluted earnings per share	5,161,926	5,145,588	5,161,926	5,145,588
Diluted earnings per share (US Dollar)	0.040	0.045	0.010	0.015
Baht				
Net profit attributable to ordinary shareholders (Baht'000)	6,693,731	7,900,243	1,708,918	2,605,243
Dilution effect from warrants issuance of a subsidiary	(100)	(627)	-	-
Net profit assumed the exercise of the warrants	6,693,631	7,899,616	1,708,918	2,605,243
Weighted average ordinary shares (Thousand shares)	5,161,926	5,096,370	5,161,926	5,096,370
Adjustment for:				
Assumed conversion of warrants	-	49,218	-	49,218
Weighted average number of ordinary shares for diluted earnings per share	5,161,926	5,145,588	5,161,926	5,145,588
Diluted earnings per share (Baht)	1.297	1.535	0.331	0.506

32 Dividend paid

At the Annual General Shareholders' meeting on 3 April 2018, the shareholders approved a payment of final dividends for 2017 of Baht 0.35 per share for 5,161,925,515 shares, totalling Baht 1,806.67 million or equivalent to US Dollar 57.79 million. The Thailand Securities Depository Company Limited notified the Company that certain shareholders were not entitled to receive dividend totalling Baht 0.02 million or equivalent to US Dollar 655. This dividend was paid to the shareholders on 30 April 2018.

At the Board of Directors' meeting on 30 August 2018, the Board approved a payment of interim dividends for 2018 of Baht 0.35 per share for 5,161,925,515 shares, totalling Baht 1,806.67 million or equivalent to US Dollar 54.69 million. The Thailand Securities Depository Company Limited notified the Company that certain shareholders were not entitled to receive dividend totalling Baht 0.02 million or equivalent to US Dollar 614. This dividend was paid to the shareholders on 28 September 2018.

At the Annual General Shareholders' meeting on 4 April 2017, the shareholders approved a payment of final dividends for 2016 of Baht 0.25 per share for 5,060,634,213 shares, totalling Baht 1,265.16 million or equivalent to US Dollar 36.26 million. The Thailand Securities Depository Company Limited notified the Company that certain shareholders were not entitled to receive dividend totalling Baht 0.02 million or equivalent to US Dollar 407.65. This dividend was paid to the shareholders on 28 April 2017.

At the Board of Directors' meeting on 31 August 2017, the Board approved a payment of interim dividends for 2017 of Baht 0.30 per share for 5,161,925,515 shares, totalling Baht 1,548.58 million or equivalent to US Dollar 46.55 million. The Thailand Securities Depository Company Limited notified the Company that certain shareholders were not entitled to receive dividend totalling of Baht 0.07 million or equivalents to US Dollar 1,983.18. This dividend was paid to the shareholders on 29 September 2017.

33 Related party transactions

Enterprises and individuals that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under common control with, the Company, including holding companies, subsidiaries and fellow subsidiaries are related parties of the company. Associates and individuals owning, directly or indirectly, an interest in the voting power of the company that gives them significant influence over the enterprise, key management personnel, including directors and officers of the company and close members of the family of these individuals and companies associated with these individuals also constitute related parties.

In considering each possible related party relationship, attention is directed to the substance of the relationship, and not merely the legal form.

The pricing policies for transactions between subsidiaries, joint ventures and related parties are:

- The prices of sales and services charged between the Company and subsidiaries approximate to those charged to third parties.
- Management income represents fee charged to subsidiaries and joint ventures for rendering the management services in the normal course of business. The fees are based on the service provided in accordance with the conditions in the agreement.
- Management expenses represent fees charged from the subsidiaries for rendering the management services in the normal course of business. The fees are based on the service provided and the agreed rate in accordance with the conditions in the agreement.
- Marketing Service Agreement to overseas subsidiaries for rendering the marketing consultant and management in transportation. The fees are based on 1.5% of gross revenue of coal exports.
- For loans to joint ventures and an associate and interest income, the Group charges interest by considering the average cost of borrowing and market interest rate.
- Advance to/from related parties represent the advance payment for related parties which will be reimbursed within the normal credit term.

Significant transactions carried out with related parties are as follows:

33.1 Transactions during the years ended 31 December are as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Interest income from joint ventures	5	290	158	9,991
Management income from joint ventures	2,053	1,340	66,082	45,428

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Purchases of goods and cost of services from subsidiaries	38,494	67,560	1,243,799	2,294,453
Dividend from subsidiaries	145,775	96,795	4,724,903	3,221,943
Interest income from subsidiaries	103,031	77,574	3,330,818	2,628,809
Interest expense to subsidiaries	11	58	353	1,957
Management income from subsidiaries	39,244	33,154	1,270,796	1,120,912
Management expense to subsidiaries	6,733	6,453	217,651	218,672

33.2 Amount due from and dividend receivables from related parties as at 31 December comprised:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Interest receivable - joint ventures	14	10	475	319
Other receivables - joint ventures	191	589	6,192	19,254
Total amounts due from related parties	205	599	6,667	19,573
Dividends receivable from a joint venture				
- Current portion	10,170	21,859	330,000	714,382
- Non-current portion	209,642	218,256	6,802,860	7,132,810
Total dividends receivable from a joint venture	219,812	240,115	7,132,860	7,847,192

	Separate financial Statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Interest receivables - subsidiaries	367,200	307,759	11,915,569	10,057,840
Other receivables				
- Subsidiaries	9,626	9,300	312,368	303,925
- A joint venture	-	228	-	7,449
Total amounts due from related parties	376,826	317,287	12,227,937	10,369,214
Dividends receivable from a subsidiary				
- Current portion	11,639	23,276	377,681	760,672
- Non-current portion	41,826	155,169	1,357,259	5,071,063
Total dividends receivable from a subsidiary	53,465	178,445	1,734,940	5,831,735

33.3 Advances to and loans to related parties as at 31 December consist of:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Advances to joint ventures				
- Current	3	9,466	88	309,343
- Non-current*	5,601	5,505	181,736	179,921
Total advances to related parties	5,604	14,971	181,824	489,264
Short-term loans to joint ventures	87	7	2,828	225
Long-term loans to				
- an associate	16,971	18,329	550,706	599,034
- Joint ventures	83	83	2,678	2,697
Total long-term loans to related parties	17,054	18,412	553,384	601,731

* Advance to joint ventures (Non-current) are advance payment for developing solar power plants projects in Japan, which presented under other non-current assets.

Movements of short-term loans to related parties for the years ended 31 December are as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	7	6,651	225	238,325
Addition	825	4,981	26,670	169,034
Repayment	(749)	(3,510)	(24,200)	(119,134)
Convert to investment in				
a joint ventures (Note 13.1 a)	-	(8,460)	-	(287,133)
Gains on exchange rate	4	124	133	4,220
Translation differences	-	221	-	(5,087)
Closing balance	87	7	2,828	225

As at 31 December 2018, short-term loans to joint ventures represents Thai Baht loans of Baht 0.23 million and JPY loans of JPY 9 million. These loans bear interest at an average rate of 4.23% and 2.64% per annum respectively. (2017: Thai Baht 0.23 million. These loans bear interest at an average rate of 4.23% per annum).

Movements of long-term loans to related parties for the years ended 31 December are as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	18,412	22,888	601,731	820,099
Addition	797	2,066	25,758	70,102
Repayment	(2,622)	(5,015)	(84,707)	(170,214)
Offset with access fee	2,272	(3,166)	73,403	(107,454)
Losses on exchange rate	(1)	(8)	(19)	(261)
Translation differences	(1,804)	1,647	(62,782)	(10,541)
Closing balance	17,054	18,412	553,384	601,731

As at 31 December 2018, long-term loan to an overseas associate and a joint venture represents an interest free Australian Dollar loan of 24.11 million and US Dollar loan of 0.08 million, bearing interest at the rate of 4.17% per annum (2017: interest free Australian Dollar 23.51 million and US Dollar 0.08 million, bearing interest at the rate of 4.17% per annum).

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Advances to				
- Subsidiaries	442	180	14,327	5,886
- A joint venture	-	3	-	83
Total advances to related parties	442	183	14,327	5,969
Short-term loans to subsidiaries	-	-	-	-
Long-term loans to subsidiaries	2,551,384	2,372,966	82,791,909	77,550,679

Movements of short-term loans to subsidiaries for the years ended 31 December are as follows:

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	-	83,588	-	2,995,009
Addition	175,675	104,850	5,676,170	3,558,399
Repayment	(168,476)	(7,070)	(5,443,587)	(239,952)
Transfer to long-term loans to related party	(9,408)	(181,984)	(303,972)	(6,176,173)
Gains on exchange rate	2,209	616	71,389	20,922
Translation differences	-	-	-	(158,205)
Closing balance	-	-	-	-

Movements of long-term loans to related parties for the years ended 31 December are as follows:

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	2,372,966	1,759,459	77,550,679	63,042,636
Addition	116,463	353,186	3,763,003	11,986,436
Convert from dividend receivable from a subsidiary to long-term loan to a related party	62,979	39,950	2,034,886	1,355,823
Repayment	(11,312)	(2,010)	(365,509)	(68,215)
Transfer from short-term loans to related party	9,408	181,984	303,972	6,176,173
Gains on exchange rate	880	40,397	28,453	1,371,010
Translation differences	-	-	(523,575)	(6,313,184)
Closing balance	2,551,384	2,372,966	82,791,909	77,550,679

As at 31 December 2018, long-term loans to subsidiaries represent a US Dollar loan of 1,937.06 million and Thai Baht loan of 19,934.58 million (2017: US Dollar 1,874 million and Baht 16,304 million) bearing interest at rates of 4.25% to 4.84% per annum (2017: 3.61% to 4.31% per annum).

The fair value of loans to related parties are based on discounted cash flows using a discount rate based on current lending rate as at the reporting date and are within level 2 of the fair value hierarchy.

The fair value of short-term loans to subsidiaries equal their carrying amount, as short-term loans to subsidiaries had a short period of maturity. The fair value of long-term loans to subsidiaries are based on discounted cash flows using a discount rate based upon the current lending rate.

33.4 Trade accounts payable, advances from and loan from related parties as at 31 December consist of:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Short-term loan from a joint venture	-	1,249	-	40,815

Movements of short-term loan from a joint venture for the year ended 31 December 2018 are as follows:

	Consolidated financial statements	
	US Dollar'000	Baht'000
Opening balance	1,249	40,815
Repayment	(1,248)	(40,320)
Gains on exchange rate	(15)	(495)
Translation differences	14	-
Closing balance	-	-

As at 31 December 2018, short-term loan from a joint venture represents a JPY loan of 139 million or equivalent to US Dollar 1.25 million bearing interest at 0.10% per annum. The repayment of principle loan and interest is fully paid up.

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Trade accounts payable to subsidiaries	3,937	3,821	127,769	124,887
Other payables - a subsidiary	2,038	1,741	66,125	56,900
Accrued interest expenses - a subsidiary	-	5	-	166
Advances from subsidiaries	36	10	1,178	306
Total advances from and amounts due to related parties	2,074	1,756	67,303	57,372
Short-term loan from a subsidiary	-	4,284	-	140,000

Movements of short-term loan from a subsidiary for the years ended 31 December are as follows:

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Opening balance	4,284	3,907	140,000	140,000
Addition	-	1,450	-	49,210
Repayment	(4,449)	(1,450)	(143,739)	(49,210)
Losses on exchange rate	165	377	5,325	12,781
Translation differences	-	-	(1,586)	(12,781)
Closing balance	-	4,284	-	140,000

As at 31 December 2018, short-term loan from a domestic subsidiary represents Thai Baht loan amounting to Baht 140 million (2017: Baht 140 million) bearing interest of 1.40% per annum. The repayment of principle loan and interest is fully paid up.

The fair value of a short-term loan from a subsidiary equals their carrying amount as short-term loan from a subsidiary had a short period of maturity.

33.5 Key management compensation is presented as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Salaries and short-term employee benefits	3,780	3,521	122,673	118,690
Post-employment benefits	86	100	2,768	3,345
Long-term employee benefits	-	-	-	11
Share-based payment	142	374	4,573	12,670
	4,008	3,995	130,014	134,716

	Separate financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Salaries and short-term employee benefits	3,368	3,084	109,301	103,936
Post-employment benefits	75	100	2,440	3,345
Long-term employee benefits	-	-	-	11
Share-based payment	32	71	1,024	2,394
	3,475	3,255	112,765	109,686

34 Commitment, significant contracts and contingent liabilities

As at 31 December, the Group had the following obligations with banks:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	Million (Original currency)	Million (Original currency)	Million (Original currency)	Million (Original currency)
Letters of Guarantee				
- US Dollar	3.35	23.98	-	-
- Thai Baht	1,407.05	1,413.72	46.64	48.67
- Indonesian Rupiah	246,059.93	240,648.45	-	-
- Australian Dollar	218.17	194.09	-	-
- Japanese Yen	390.00	390.00	-	-
Letters of Credit				
- US Dollar	22.84	20.47	3.94	3.56

The obligations of joint ventures with banks are disclosed in Note 13.5.

34.1 Capital commitments

As at 31 December, the Group had capital commitments that were not recognised in the consolidated financial statements as follows:

	Consolidated financial statements			
	US Dollar'000		Baht'000	
	2018	2017	2018	2017
Property, plant and equipment	72,747	79,732	2,360,610	2,605,724
Investments in joint ventures	33,568	33,995	1,089,270	1,110,973
Investments in subsidiaries	17,806	-	577,812	-
Other investments	55,534	72,543	1,802,064	2,370,777
	179,655	186,270	5,829,756	6,087,474

34.2 Coal Supply Agreement commitments

As at 31 December 2018, a group of Indonesian subsidiaries had coal supply commitments in accordance with the Coal Supply Agreement for 16.20 million tonnes (2017: 17.48 million tonnes) at the market price. The coal will be delivered within 2021.

34.3 Operating lease commitments

The Group has entered into office rental and equipment and service contracts. The future aggregate minimum lease payments under non-cancellable operating leases as at 31 December 2018 are as follows:

	Consolidated financial statements		Separate financial statements	
	US Dollar'000	Baht'000	US Dollar'000	Baht'000
Not later than 1 year	7,216	234,133	1,428	46,343
Later than 1 year but not later than 5 years	12,709	412,393	1,930	62,627
Later than 5 years	6,368	206,642	-	-
	26,293	853,168	3,358	108,970

34.4 Significant contracts

- A subsidiary in Thailand has entered into a contract to remove coal ash from the area under the silo at two power plants. The subsidiary is responsible for any damage incurred from the service. Payment is determined in accordance with the removed quantity. The contract duration is 2 years from the date of operation on 1 January 2017.

- b) Indonesian subsidiaries have entered into the mining services contracts with other companies in Indonesia. Each agreement governs the price rate and other factors. Contract values are dependent on volumes of overburden moved and coal mined. These contracts will expire between December 2018 and July 2022.
- c) Four Indonesian subsidiaries have entered into a shared contract with the Government of Indonesia for 13.50% of the coal produced with the Government.
- d) An Indonesian subsidiary, holding the mining rights, has an obligation to pay an exploitation fee ranging from 3% to 7% of sales, net of selling expenses.
- e) Under a Coal agreement, an Indonesian subsidiary is obligated to pay the Government a dead-rent fee during the terms of the agreement. Dead-rent is calculated by reference to the number of hectares in the Coal agreement, in accordance with the rates stipulated in the Coal agreement. Land and building tax payable for the pre-production period is equal to the amount of dead-rent. During the production period, the subsidiary is required to pay land and building tax equal to the dead-rent plus 0.15% of gross revenue from the mining operations.
- f) Four Indonesian subsidiaries that have production activities in a protected forest area but not related to forestry activities will have the obligation to pay a forestry fee ranging from Indonesian Rupiah 1.6 million to Indonesian Rupiah 4.0 million per hectare.

34.5 Significant litigation

- a) In 2007, a group of individuals and corporate entities (Plaintiffs), who were ex-developers of a coal mine and a power plant in Lao PDR (Hongsa Project), filed a civil lawsuit against the Company, Banpu International Limited, and Banpu Power Public Company Limited (a subsidiary holding equity in Hongsa Power Company Limited which holds coal mine and power concessions awarded by the Government of Lao PDR (GOL)) and three members of management as defendants, based on the allegations that the Defendants had deceptively entered into a joint development agreement with the Plaintiffs for the purpose of gaining access to the information of the Hongsa Project, and had, in bad faith, misinformed the GOL to terminate their Hongsa Project concessions in order that the Banpu Group could directly enter into a concession contract with the GOL. The Plaintiffs demanded the Defendants pay damages of Baht 2,000 million for the value of the Hongsa Project information, another Baht 2,000 million for the investment costs to the studies and expenditures in the Hongsa Project, and Baht 59,500 million for the lost profits due to the GOL having terminated the Hongsa Project concessions, totalling Baht 63,500 million plus interest.

On 20 September 2012, the Civil Court issued a judgement that the Defendants did not breach the joint development agreement; the Plaintiffs breached the joint development agreement; the Defendants committed a wrongful act by using the Plaintiffs' information of the Hongsa Project (for the development of a 600-MW power plant) to currently develop the 1,800-MW power plant,

and adjudicated that the Company and Banpu Power Public Company Limited pay to the Plaintiffs the damages of Baht 2,000 million for the value of the information, another Baht 2,000 million for the investment costs to the studies and expenditures in the Hongsa Project, totalling Baht 4,000 million plus 7.5% interest per annum from the date of plaint until full payment, and for loss of profits of Baht 860 million per year for years 2015 - 2027 and Baht 1,380 million per year for years 2028 - 2039, payable at each year end, totalling Baht 27,740 million. The grand total of damages is Baht 31,740 million. The plaints involving Banpu International Limited and the management were dismissed.

On 9 September 2014, the Civil Court announced the judgement of the Appeal Court whereby the Plaintiff's complaint was dismissed. The grounds for dismissal were that the Defendants, the Company and Banpu Power Public Company Limited (a subsidiary), had always acted in good faith before and after the Joint Development Agreement was entered into, and that the Defendants did not commit a wrongful act against the Plaintiffs. The Appeal Court also found that it was the Plaintiffs that breached the Joint Development Agreement, and that the Defendants had no obligation to return to the Plaintiff the documents in which the information relating to the Plaintiff's Hongsa Project contains. The Plaintiff has filed with the Supreme Court a petition against the judgement of the Appeal Court, and the Defendants submitted the Plaintiff's petition for the final judgement of the Supreme Court on 17 February 2015.

In January 2018, a summon was issued by the Civil Court to hear the Supreme Court judgement on 6 March 2018. The Supreme Court judgement was read as summarised below:

1. In respect of the claim that the Defendants deceived the Plaintiffs in entering into the Preliminary Agreement and the Joint Development Agreement with an intention to acquire the project information of the Plaintiffs, the Court considered that the Plaintiffs had approached the Defendants to develop the Project and the Defendants acted in good faith in entering into the Agreements with its true intention to develop the Hongsa Project, but not to deceptively acquire the information as alleged.
2. In respect of the claim that the Defendants terminated a contract with a contractor to delay the Hongsa Project to result in the Lao Government terminating the concession agreements with the Plaintiffs, the Court considered that the Defendants terminated the contractor in good faith for the benefit of the Hongsa Project.
3. In respect of the claim that the Defendants induced the Lao Government to terminate the concession agreements with the Plaintiffs, the Court considered that the Defendants was in good faith and did not do so. The termination of the concession agreements by the Lao Government was resulting from the acts of the Plaintiffs since the Lao Government was concerned that the Hongsa Project would not be succeeded in the hands of the Plaintiffs as they were seen incapable, which would be detrimental to the benefit of Laos and its people.

4. In respect of the claim that the Defendants used the project information of the Plaintiffs, the Court considered that the Defendants (i.e. the Company, Banpu Power Public Company Limited and Banpu International Limited) utilised the project information of the Plaintiffs as base for developing a new 1,800 MW power project without the Plaintiffs' consent, and therefore ordered the Defendants to jointly pay the Plaintiffs the sum of Baht 1,500 million plus interest at the rate of 7.50% per annum calculated from 3 July 2007.

Subsequently, the Company jointly with Banpu Power Public Company Limited and Banpu International Limited paid the damages plus interest to the Plaintiffs in full on 9 March 2018. The Company bore one third of the damages, amounting to Baht 900.68 million and the Group recognised Baht 2,702.05 million in the consolidated statement of comprehensive income for the year ended 31 December 2018.

b) A civil lawsuit against a subsidiary in Mongolia

- On 19 October 2015, a subsidiary received a notice from the Primary Civil Court that a group of individuals and corporate entities (Plaintiffs) submitted a claim that repeated the claim previously filed, claiming that the Plaintiffs had the right to own 60% of the shares of another subsidiary, and such previous claim was dismissed by the Decision of the Primary Civil Court, the Appeal Court and the Supreme Court on the ground that the claim of the Plaintiffs was unclear.

On 17 November 2015, however, the Primary Civil Court allowed the Plaintiffs to amend the claim and the Plaintiff amended the claim to the Primary Civil Court. On 7 January 2016, such subsidiary submitted an explanation and a counter claim against the Plaintiffs asking for compensation. The Primary Civil Court made a judgement on 22 March 2016 in favour of the Plaintiffs, ordering the subsidiary to pay US Dollar 1 million to the Plaintiffs and dismiss a counter claim of the subsidiary against the Plaintiffs. The subsidiary submitted an appeal to the Appeal Court and the Supreme Court respectively.

On 20 October 2016, the Supreme Court ordered to return the case to the Primary Civil Court with the reason that the subsidiary is not the party of the agreement under the claim of the Plaintiffs.

On 6 March 2017, the Primary Civil Court hearing was recommenced, but so far there was no significant progress. As at 31 December 2018, the case has still been in the process of the Primary Civil Court.

c) Tax audit of Indonesian subsidiaries

Prepaid income taxes

As at 31 December, the details of significant prepaid income taxes of Indonesian subsidiaries resulting from tax investigation by Directorate General of Tax (DGT) are as follows:

Fiscal year	Company	Descriptions	US Dollar'000		Baht'000		Status as at the date of the financial statements
			2018	2017	2018	2017	
2009	ITM	Underpayment of corporate income tax and withholding tax 26 of US Dollar 13 million and Indonesian Rupiah 48 billion (equivalent to US Dollar 3.3 million).	16,366	16,596	531,073	542,372	Withholding tax 26: ITM submitted a Judicial Review on 13 February 2018. The Supreme Court result is in favor of ITM on 19 September 2018. As at the date of these financial statements, ITM has partially received the tax refund. Corporate income tax: ITM appealed to the tax court on 16 May 2016.
2011	ITM	Underpayment of corporate income tax of US Dollar 75.9 million which consists of tax principal and administrative penalty.	-	75,926	-	2,481,330	The Supreme Court result is in favor to ITM on 8 June 2017. On 8 November 2018, ITM received Decision of Cancellation of Tax Collection Letter (administrative penalty) of US Dollar 37.7 million and on 7 December 2018, ITM has received tax refund for the cancellation of tax collection letter. On 22 November 2018, ITM received Tax Overbooking Letter in which tax refund of principal was in the form of compensation of US Dollar 38.2 million as income tax 25 installments for September 2018 - January 2019 of IMM, TCM, BEK, JBG and KTD.
2011	IMM, TCM	Underpayment of withholding tax 23 of Indonesian Rupiah 231.3 billion (equivalent to US Dollar 16.0 million).	-	-	-	-	IMM: Tax court result is favourable to IMM on 9 February 2016. TCM: DGT submitted a Judicial Review in April 2017 and TCM submitted Contra Memory on a Judicial Review in May 2017.

Fiscal year	Company	Descriptions	US Dollar'000		Baht'000		Status as at the date of the financial statements
			2018	2017	2018	2017	
2012	ITM	Underpayment of corporate income tax of US Dollar 14.3 million.	-	1,135	-	37,093	DGT submitted a Judicial Review on 20 March 2018 and on 18 April 2018 ITM submitted its Contra Judicial Review to the Supreme Court.
2012	TCM	Overpayment of corporate income tax of US Dollar 5.5 million.	2,877	3,014	93,358	98,500	TCM submitted a Judicial Review to the Supreme Court on 27 April 2017.
2012	TCM	Underpayment of withholding tax and value added tax of Indonesian Rupiah 81.8 billion (equivalent to US Dollar 5.6 million).	-	-	-	-	DGT submitted a Judicial Review to the Supreme Court Judicial Review from DGT partially by TCM on 26 July 2017 and Contra Judicial Review on the partially Judicial Review has been submitted on 22 August 2017. In April 2018 the Supreme Court partially accept Judicial Review from DGT
2012	KTD, JBG	Over payment of corporate income tax of US Dollar 6.2 million Underpayment of corporate income tax of US Dollar 0.2 million.	6,350	6,350	206,056	207,524	KTD submitted appeal letter to tax court on 3 October 2018. JBG submitted objection to DGT on 22 January 2018. DGT rejected JBG's objection on 5 December 2018.
2013	IMM, TCM	Underpayment of withholding tax of Indonesian Rupiah 38.6 billion (equivalent to US Dollar 2.7 million).	2,667	2,850	86,544	93,141	IMM: IMM submitted a Judicial Review to the Supreme Court on 24 March 2017. TCM : DGT submitted a Judicial Review on 2 March 2018. On 16 April 2018, TCM submitted its Contra Judicial Review to the Supreme Court result is in favor of TCM on 25 October 2018. As at the date of these financial statements. TCM has not yet received the refundable tax.

Fiscal year	Company	Descriptions	US Dollar'000		Baht'000		Status as at the date of the financial statements
			2018	2017	2018	2017	
2013	IMM, TCM, KTD	Overpayment of corporate income tax of US Dollar 8.3 Million	3,682	8,304	119,480	217,382	<p>KTD: Tax court rejected KTD's appeal requisition on 9 October 2018. KTD submitted a Judicial Review On 15 January 2019</p> <p>TCM: TCM submitted a Judicial Review request on 9 March 2018.</p> <p>IMM: DGT submitted a Judicial Review on 30 January 2018. The Supreme Court result is in favour IMM on 16 May 2018.</p>
2013	TCM, JBG, KTD	Underpayment of withholding tax 23/26 domestic VAT and offshore VAT of Indonesian Rupiah 79.8 billion (equivalent to US Dollar 5.5 million).	3,686	5,892	119,610	192,556	<p>KTD: Tax court accepted KTD's appeal requisition regarding offshore VAT on 22 May 2018. DGT submitted a Judicial Review on 23 August 2018 and KTD submitted Contra Memory on Judicial Review on 20 September 2018.</p> <p>Tax court partially accepted KTD's appeal requisition regarding withholding tax 26 on 30 October 2018. KTD submitted a Judicial Review on 1 February 2019.</p> <p>TCM: Tax court accepted TCM's appeal requisition regarding withholding tax 23 and domestic VAT on 18 July 2018. On 24 October 2018, DGT submitted Judicial Review regarding withholding tax 23 and domestic VAT to the Supreme Court and on 23 November 2018,</p> <p>TCM submitted Contra Memory on Judicial Review. In January 2019, TCM has partially received the tax refund</p> <p>Tax court partially accepted TCM's appeal requisition regarding withholding tax 26 on</p>

Fiscal year	Company	Descriptions	US Dollar'000		Baht'000		Status as at the date of the financial statements
			2018	2017	2018	2017	
							<p>8 August 2018. For the rejected case, on 6 November 2018, TCM submitted a Judicial Review to the Supreme Court and on 28 December 2018, TCM received Contra Memory on Judicial Review from DGT. For the accepted case, DGT submitted a Judicial Review on 19 November 2018 and TCM submitted Contra Memory on Judicial Review on 13 December 2018.</p> <p>Tax court rejected TCM's appeal requisition regarding offshore VAT on 8 August 2018. On 6 November 2018, TCM submitted Judicial Review regarding offshore VAT to the Supreme Court and on 28 December 2018, DGT submitted Contra Memory on Judicial Review.</p> <p>JBG: Appealed to tax court on 30 May 2017 regarding domestic VAT and offshore VAT.</p>
2015	IMM	Overpayment of corporate income tax of US Dollar 3.1 million and underpayment of other taxes (withholding tax 23/26, domestic VAT and offshore VAT) in total amount of Indonesian Rupiah 94.3 billion or equivalent to US Dollar 6.5 million.	9,124	9,566	296,072	312,625	<p>In June 2018, DGT partially accepted IMM's objection of domestic VAT and rejected the objection of corporate income tax, withholding tax article 23/26 and offshore VAT.</p> <p>IMM submitted tax appeal letter to tax court regarding withholding tax article 26, withholding tax article 23, offshore VAT, domestic VAT and corporate income tax on 9 August 2018, 14 August 2018, 6 September 2018, 20 September 2018 and 3 October 2018, respectively.</p>
Total			44,752	129,633	1,452,193	4,236,523	

Additionally, as at 31 December 2018, various taxes of four Indonesian subsidiaries for fiscal years 2014 - 2017 are still in the process of audit by the DGT. The Group's management believes that the tax audit result, objection, appeal, lawsuit and reconsideration results will not have a material impact on the Group's consolidated financial statements.

d) Significant land compensation case of Indonesian subsidiaries

Three Indonesian subsidiaries were sued in 9 material cases with 8 cases claiming for compensation for land in mining concession area amounting to Indonesian Rupiah 4,204.10 billion or equivalent to US Dollar 298.62 million and 1 arbitration case claiming for damages from breach of contract amounting US Dollar 5.98 million.

- The 5 related claims for land compensation of Indonesian Rupiah 3,145.70 billion or equivalent to US Dollar 218.96 million were lodged in July 2016. The District Court dismissed all the 5 cases in January 2017. The plaintiffs submitted applications of appeal and memoranda of appeal to the High Court, but all the 5 cases were rejected by the High Court during May to July 2017. The plaintiffs filed application of cassation against the High Court's decision to the Supreme Court for the 5 cases and the subsidiary submitted counter memoranda of cassation during July to September 2017. In October 2018, the subsidiary was notified of the Supreme Court's judgement that all 5 cases were dismissed, rendering them to be final.
- The claim for land compensation of Indonesian Rupiah 58.40 billion or equivalent to US Dollar 4.03 million was lodged in February 2017, but on 18 July 2017, the District Court rejected the claim. The plaintiff filed an appeal to the High Court in August 2017 and the subsidiary submitted a counter memorandum of appeal in October 2017. The High Court considered and rejected the claim in November 2017. The subsidiary received the notification in March 2018 that the Plaintiff had submitted an application of cassation to the Supreme Court. In November 2018, the subsidiary was notified of the Supreme Court's judgement that the case was dismissed, rendering it to be final.
- The claim for land compensation of Indonesian Rupiah 1,000 billion or equivalent to US Dollar 75.63 million was lodged against a subsidiary company as the 2nd defendant with the District Court in August 2018. As at 31 December 2018, the case has been in the process of the District Court.
- The arbitration case of US Dollar 5.98 million was initiated by a vessel company against 2 subsidiaries for compensation of underperformance of agreed shipment tonnages and wrongful termination of Contract of Affreightment. The case was filed with the Singapore Chamber of Maritime Arbitration and a panel of tribunal was appointed. The tribunal had set up a preliminary schedule for hearings in June 2018, but it granted a time extension for submitting witness statements to end of June 2018. However, the claimant requested and was granted to amend its statement of claim, and the tribunal rescheduled the submission of the witness statements to be within 3 August 2018; and afterwards the claimant submitted other motions to the Tribunal while the subsidiaries objected, resulting in the shift of the hearings. The Tribunal has yet to schedule the hearings.

Management believes that the subsidiaries have strong evidences to defend and is in a strong position to win the lawsuit and that these issues will not have a material adverse impact on the consolidated financial statements

35 Business combination and acquisition of indirect investments

35.1 Interest in natural gas business

On 31 January 2018, the Group, through BKV Oil & Gas Capital Partners L.P., acquired an interest in natural gas business (called West Brom Proj and options ect) which has operated in the United States of America at the consideration of US Dollar 99.23 million. The investment is considered as a joint operation under the Joint Operating Agreement.

Details of the consideration paid and net assets purchased assumed recognised at the acquisition date:

	US Dollar'000	Baht'000
Fair value of net assets		
Proved reserve and gas exploration and producing assets	134,828	4,230,412
Asset retirement obligation	(4,728)	(148,368)
Trade accounts payables and accrued expense	(195)	(6,118)
Total fair value of net assets	129,905	4,075,926
<u>Less</u> Considerations		
Consideration at the acquisition date	97,233	3,050,814
Contingent considerations	2,000	62,752
Total considerations	99,233	3,113,566
Bargain purchase	30,672	962,360

The fair value of contingent consideration payment of US Dollar 2 million has been estimated for the fair value of the estimated future cash payment in accordance with the Share and Purchase Agreements (SPA) with former interest holder which is referred to in the estimation of future gas prices in 2018-2019. Regarding the SPA, the Group shall have additional payment to the former interest holder if the average gas price of 2018-2019 is higher than the gas price as referenced in the SPA with the maximum amount before discount at USD 7.5 million.

The Group recognised a bargain purchase in "Management fee and others" through the statement of comprehensive income for the year ended 31 December 2018.

35.2 Investment in clean energy

On 14 September 2017, BPIN Investment Company Limited (BPINI) which is a subsidiary of the Group entered into a Share Purchase Agreement to acquire the newly issued preference shares of Sunseap Group Pte. Ltd. (Sunseap), a limited company in the Republic of Singapore, at the consideration of Singapore Dollar 75 million or equivalent to US Dollar 55.79 million. On 28 February 2018, BPINI acquired preference shares of Sunseap from third parties totalling of Singapore Dollar 10.21 million or equivalent to US Dollar 7.75 million. As a result, the Group has 33.64% of shareholding in Sunseap from previously 28.86%.

The Group measured the fair value of the identifiable assets acquired and completed purchase price allocation. The determination of fair value does not significant impact to the consolidated financial statements for the period ended 31 December 2017. Details of investment are as follows:

	US Dollar'000		Baht'000	
	28.86%	4.78%	28.86%	4.78%
Portion of fair value of net assets acquired	13,665	2,186	455,990	68,781
Right in long-term power purchase agreements (Presented in investment in a joint venture)	28,444	5,080	949,112	159,836
Goodwill (Presented in investment in a joint venture)	13,677	481	456,393	15,119
Purchase considerations	55,786	7,747	1,861,495	243,736

Right in long term power purchase agreement will be amortised by straight-line method based on each agreement's remaining contract period.

According to management structure defined by the Shareholders' agreement, finance strategy and operation decision will be taken or resolved with the consent from each parties. Therefore, Sunseap is a joint venture of the Group.

Also, on 14 June 2018, BPINI additionally acquired newly issued preference shares of Sunseap at the consideration of Singapore Dollar 33.00 million or equivalent to US Dollar 24.76 million. As a result, the Group owns 40.74% of shareholding in such joint venture. There is no change in agreement between sunseap's shareholders.

Details of the consideration paid and the Group's portion of estimated net assets purchased and recognised at the acquisition date are as follows:

	US Dollar'000	Baht'000
Portion of estimated fair value of net assets acquired	10,576	338,701
Purchase price over net assets acquired (Presented in investment in a joint venture) *	14,184	454,229
Purchase considerations	24,760	792,930

* As at 31 December 2018, the Group is under the process of determining fair value of the acquired net assets and reviewing purchase price allocation (PPA) from additional investment above. Therefore, fair value of net assets acquired may be subject to further adjustments depending on the determination of fair value and the result of the PPA, which is expected to be finalised within 12 months from the date of additional acquisition.

35.3 Investment in energy storage system business

On 7 March 2018, BPIN Investment Company Limited (BPINI), a subsidiary of the Group, acquired issued shares of New Resources Technology Pte. Ltd., a limited company in the Republic of Singapore, at the consideration of Singapore Dollar 43.21 million or equivalent to US Dollar 34.17 million. As a result, the Group has 44.84% of shareholding in New Resources Technology Pte. Ltd. The investment is considered as an associate. The Group fully paid for such investment.

Details of the consideration paid and the Group's portion of estimated net assets purchased and recognised at the acquisition date are as follows:

	US Dollar'000	Baht'000
Portion of estimated fair value of net assets acquired	15,014	470,643
Purchase price over net assets acquired (Presented in investment in an associate) *	19,160	600,596
Purchase considerations	34,174	1,071,239

* As at 31 December 2018, the Group is under the process of determining fair value of the acquired net assets and reviewing purchase price allocation (PPA). Therefore, the purchase price over net assets' carrying value may be subject to further adjustments depending on the determination of fair value and the result of the PPA, which is expected to be finalised within 12 months from the acquisition date.

36 Events after the reporting period

On 25 January 2019, the Group invested in FOMM Corporation which is a limited company in Japan and operates in compact electric vehicle developer. The investment amount is US Dollar 20 million.



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