



**OUR WAY
IN ENERGY**

CONTENTS

07

Policy and Business Overview

08

Vision & Mission

09

Financial Highlights

12

Operational Results

14

The Board of Directors Review

16

Chief Executive Officer Review

22

Summary of Major Changes and Development
in 2018 and Major Current Events

26

Banpu Group Structure

28

Organizational Structure

29

Management Structure

34

Market and Competition

56

Revenue Structure

57

Risk Management and Risk Factors

74

Internal Control

78

Sustainable Development



82

Human Resources Management

88

Corporate Governance

116

Corporate Social Responsibility (CSR)

131

Board of Directors and Management

142

Shareholding of the Board of Directors and Management

143

Remuneration of the Board of Directors

146

Major Shareholders

147

Dividend Policy

148

Connected Persons and Transactions

150

Other References

151

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



A large, stylized speech bubble graphic with a grey, geometric, low-poly pattern. It is outlined in a thick grey stroke and contains the text "OUR WAY IN ENERGY".

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.





BANPU GROUP'S MAP OF OPERATIONS

MONGOLIA



JAPAN



CHINA



LAO PDR



THAILAND



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 Vongkusolkit 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.

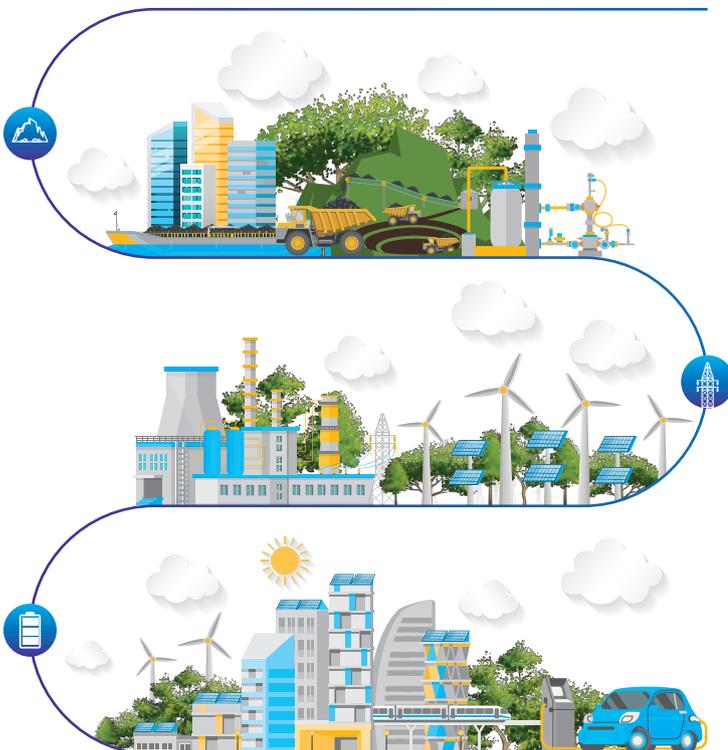
Later on 4 May 1989, Banpu was listed on the Stock Exchange of Thailand (SET). The Company later changed its name on 29 July 1993 to “Banpu Public Company Limited”.

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

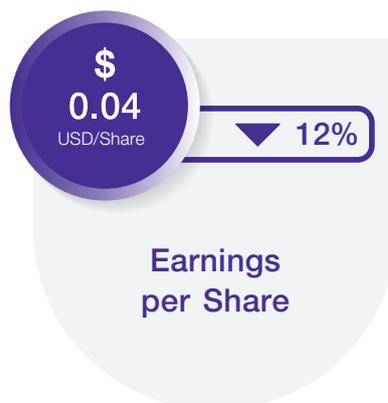
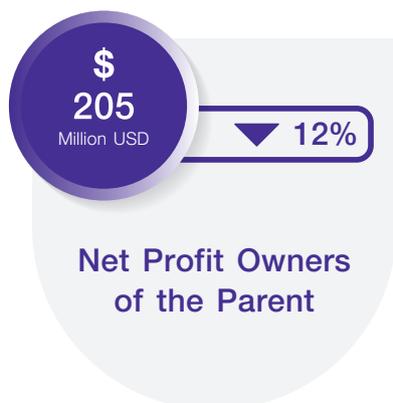
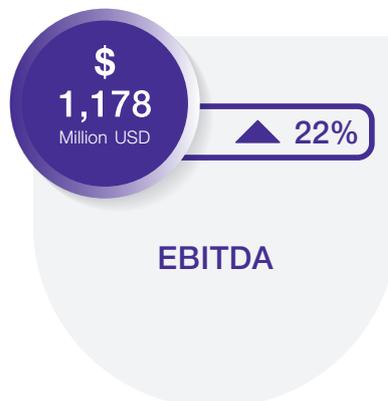


Build sustainable value for all our stakeholders as a trusted partner, with emphasis on care for the earth and society.

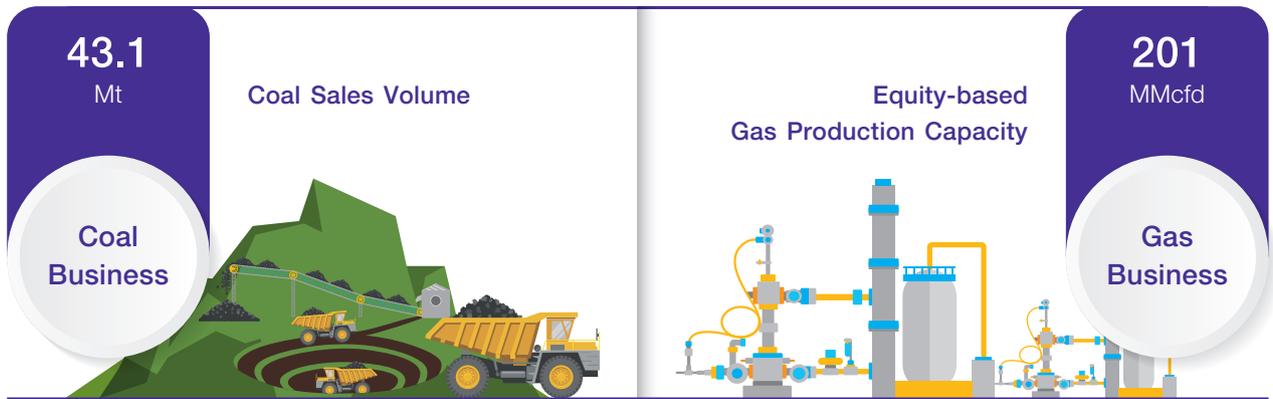
Promote innovation, synergy, sustainability, and integration across the energy supply chain, between conventional and new energy technologies.

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

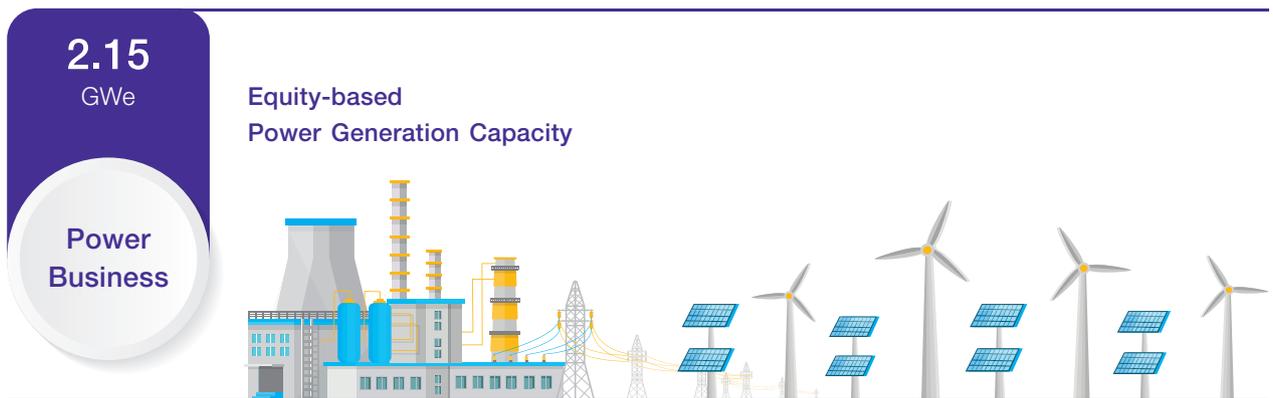
FINANCIAL HIGHLIGHTS



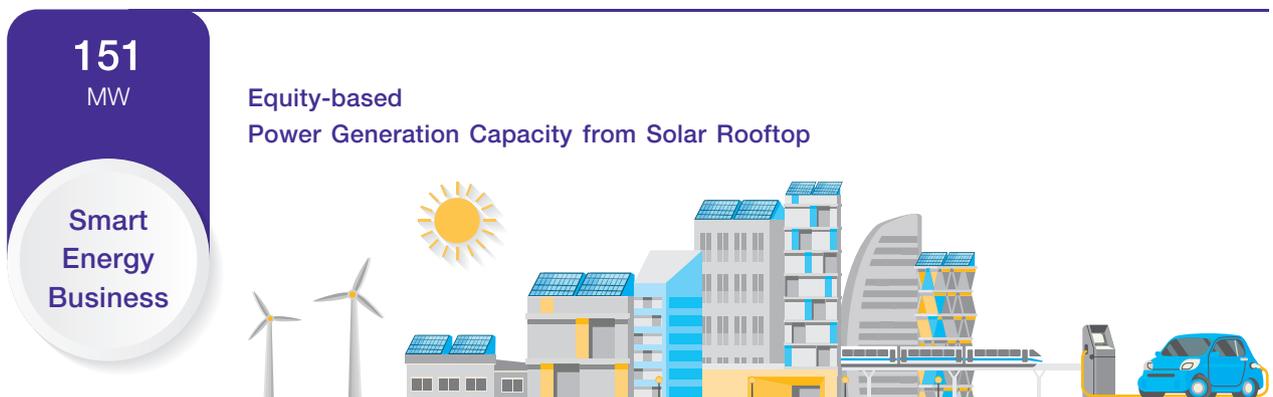
Energy Resources



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.

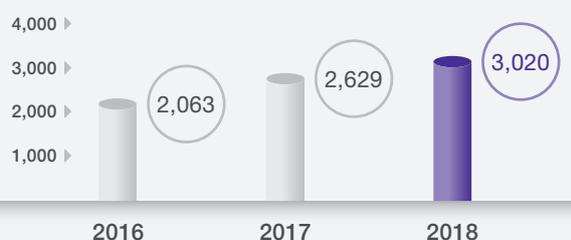
OPERATIONAL RESULTS

		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

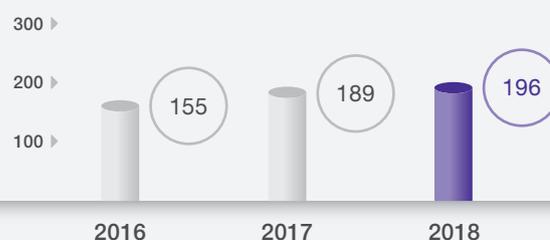
Revenue from Coal Business

(Million USD)



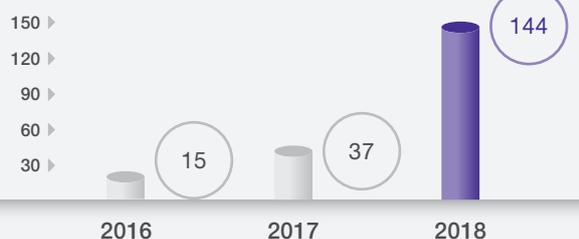
Revenue from Power Business

(Million USD)



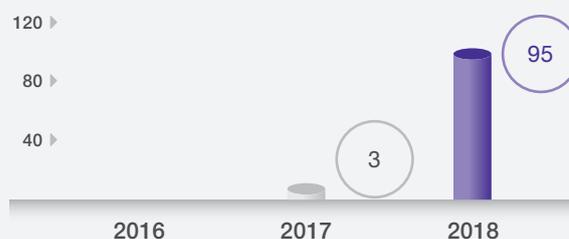
Revenue from Gas Business

(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, appearing to be 'S. Chaimongkol', 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's 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.

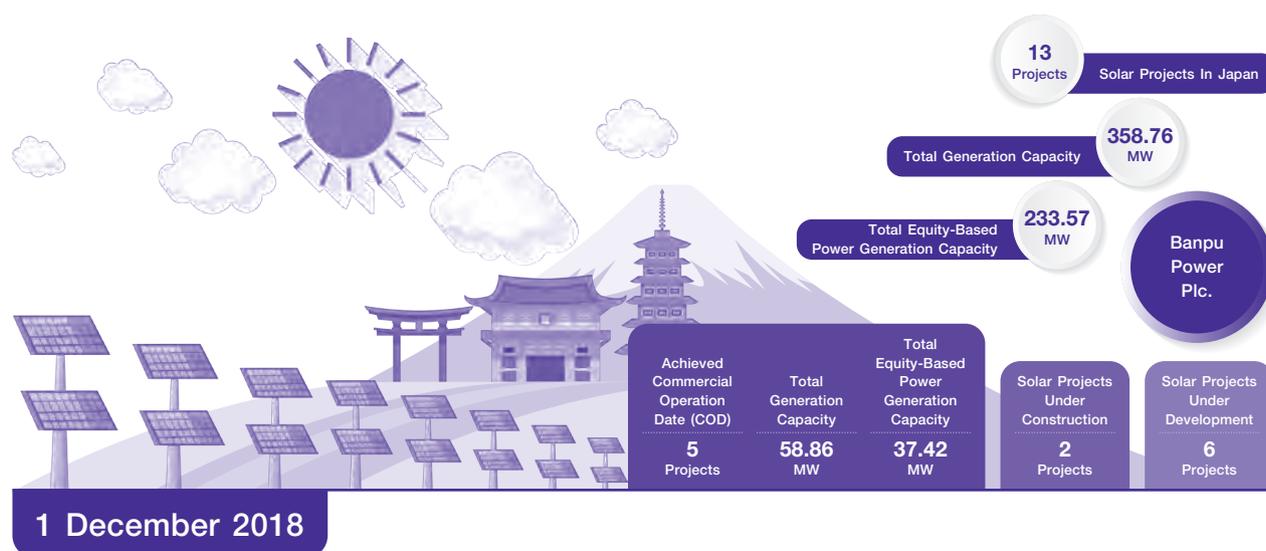
30 August 2018

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.

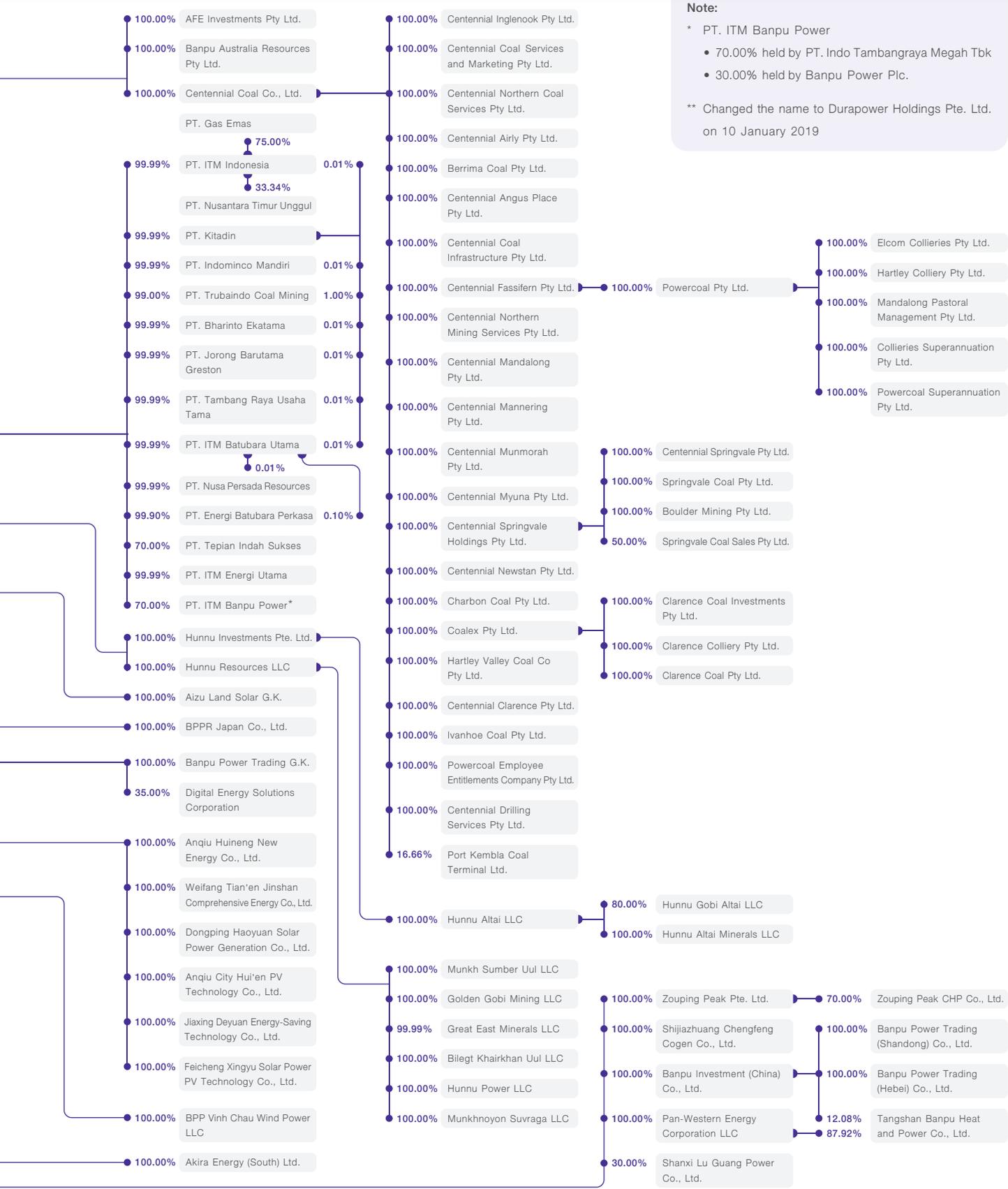
21 February 2019

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



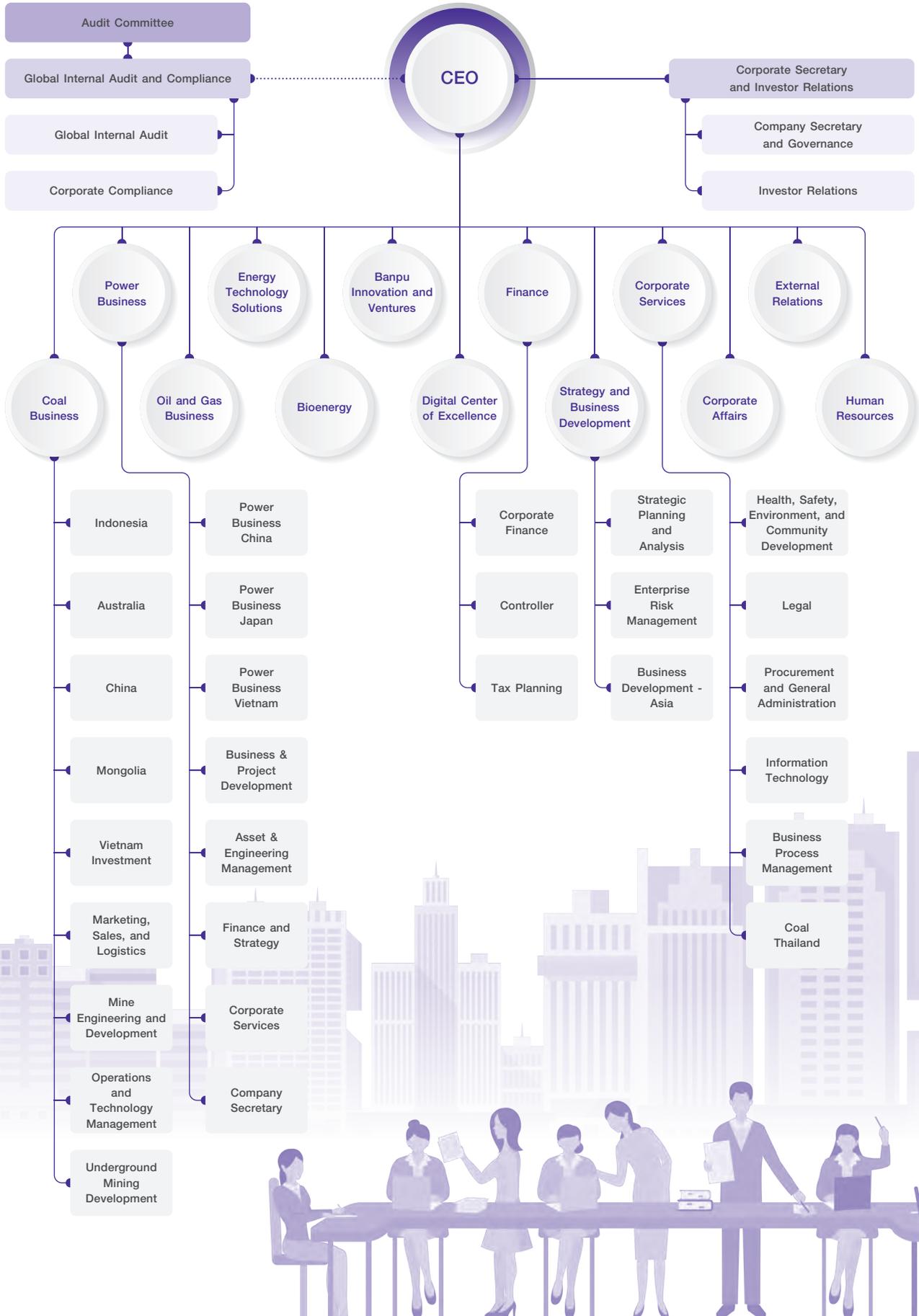


Note:

- * PT. ITM Banpu Power
 - 70.00% held by PT. Indo Tambangraya Megah Tbk
 - 30.00% held by Banpu Power Plc.
- ** Changed the name to Durapower Holdings Pte. Ltd. on 10 January 2019

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 Phanijphand | Vice Chairman/
Independent
Director |
| 3. Mr. Teerana Bhongmakapat | Independent
Director |
| 4. Mr. Suthad Setboonsarng | Independent
Director |
| 5. Mr. Sudiarso Prasetio | 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 |

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,

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-term 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.

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 Phanijphand | 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 Phanijphand, 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 Vongkusolkiet | 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



Energy Resources

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.

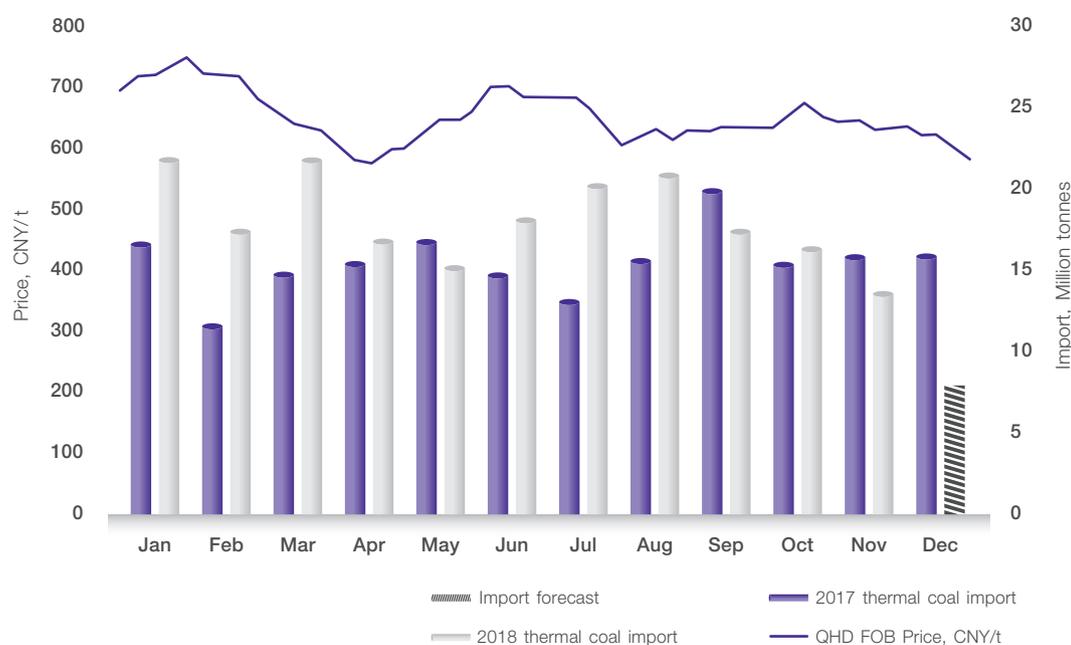
While demand for premium coal was tight, demand for lower quality coal was also affected by the Chinese

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



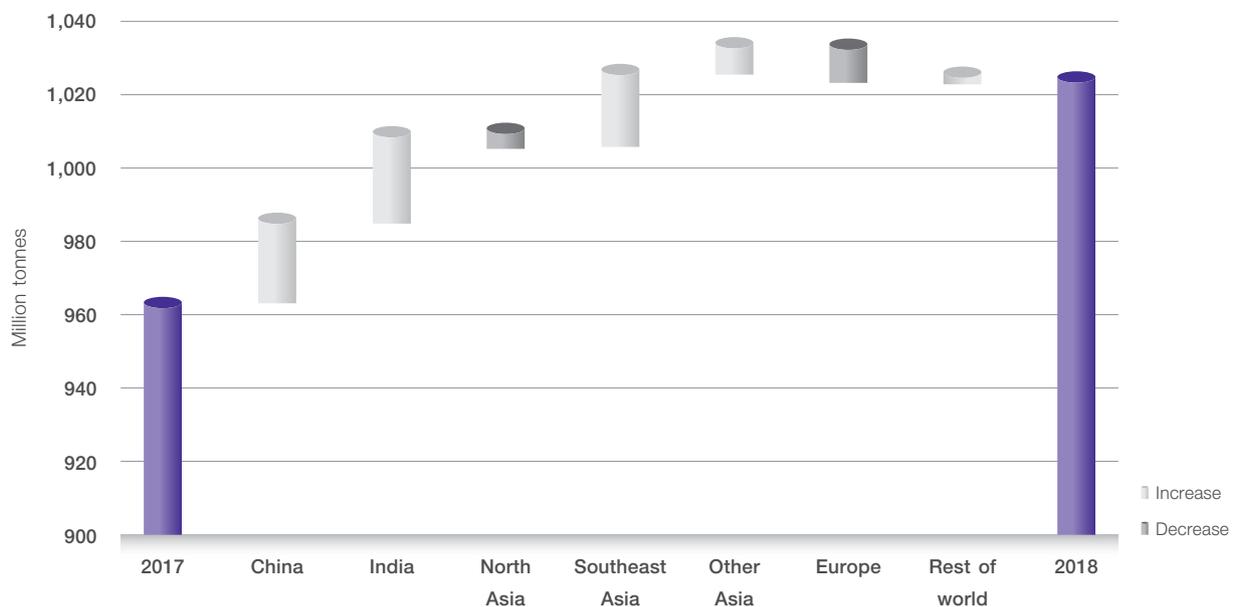
Source: IHS, Marketing, Sales and Logistics Analyst, Banpu Plc.

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.

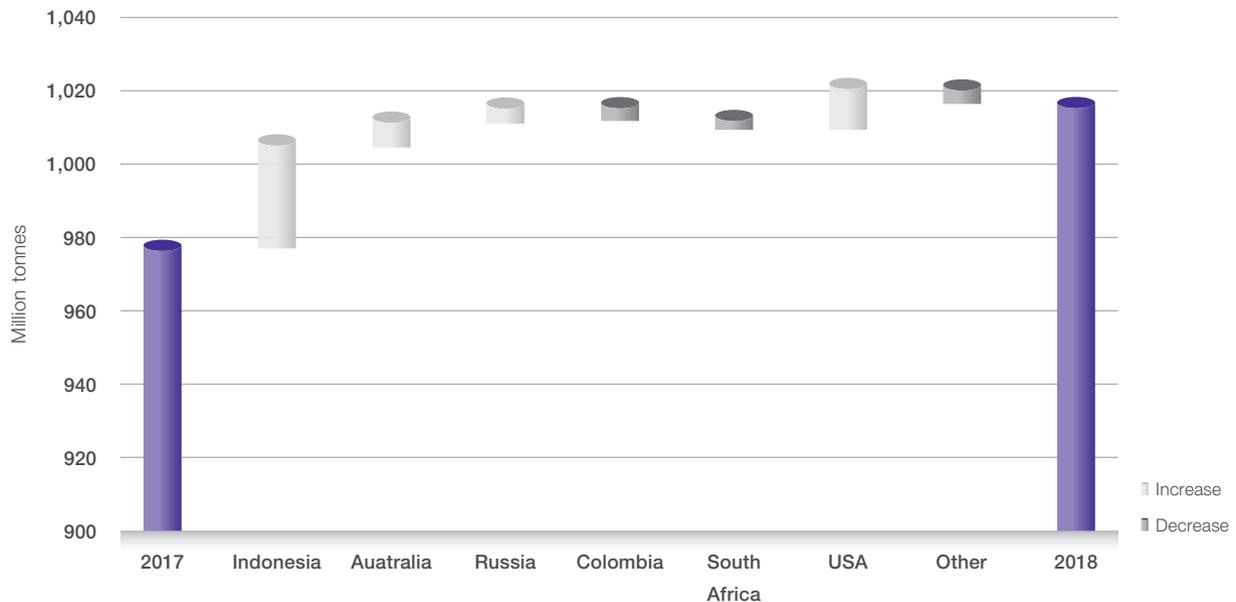
In 2018, the European coal market shrunk due to mild winter and the increase in a number of renewable power plants in almost all European countries while a number of nuclear power plants in France also increased. Furthermore, decreasing natural gas prices caused coal-fired power generation to drop. However, 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.

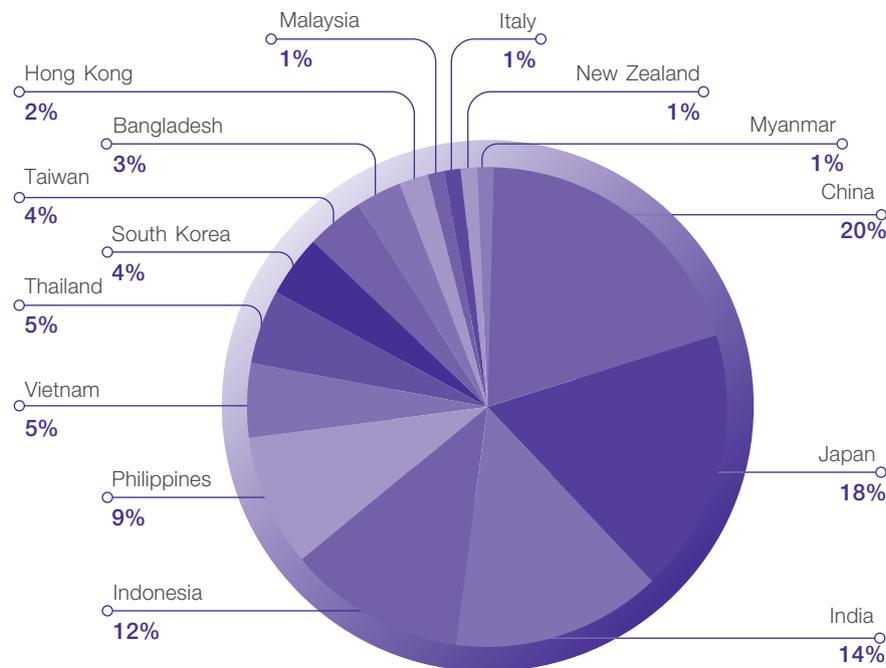
While other coal-exporting countries suffered from the decline in coal reserves and lack of investment to improve production capacity, resulting in the inability to increase output to satisfy rising demands. Heavy rainfalls in Colombia between April - July, and October - December, which is a rainy season, 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:

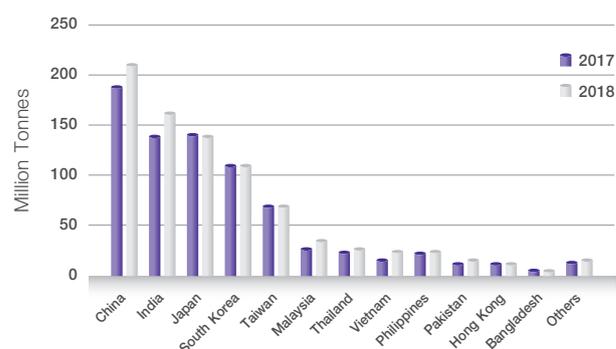
- 1. Premium coal** is the type of coal with the high calorific value which is in stable demand, especially in the North Asian market, while the supply has been limited in the past few years because some producer mines have gradually closed down or shifted towards producing lower quality coal due to 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



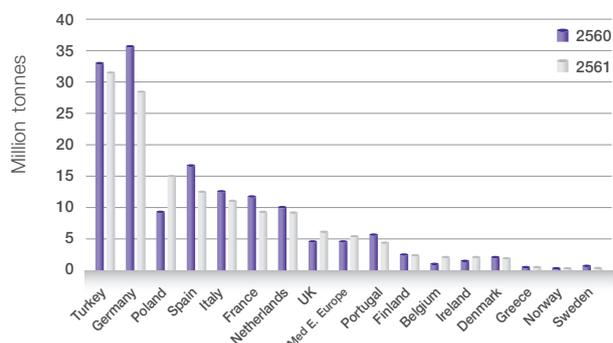
Source: Marketing, Sales and Logistics Analyst, Banpu Plc.

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



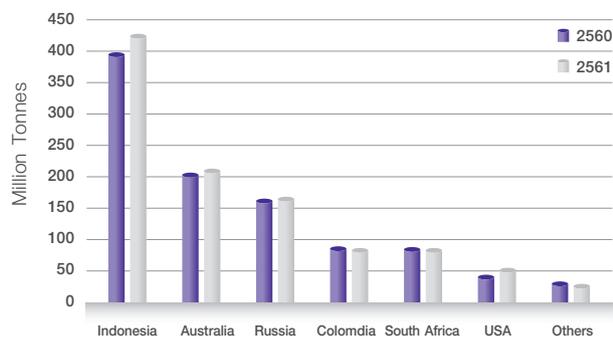
Source: Marketing, Sales and Logistics Analyst, Banpu Plc.

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.

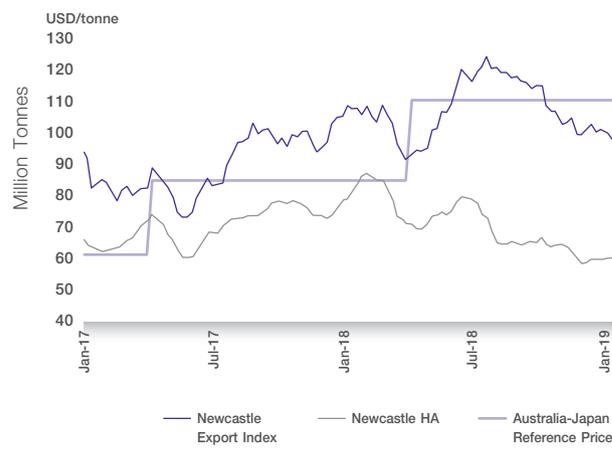
The U.S. coal exports in 2018 were approximately 48 million tonnes (excluding export to Canada), soaring 30.8% over the past year, driven by high global prices prompting the U.S. producers to increase export volume. However, the limitations in capacity of transportation and cargo loading, plus higher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



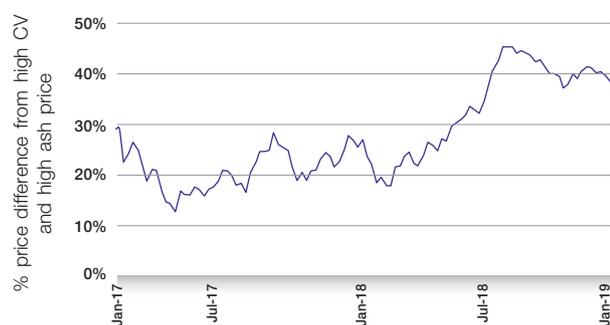
Source: IHS

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 1018 - 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.



Energy Generation

Power Business

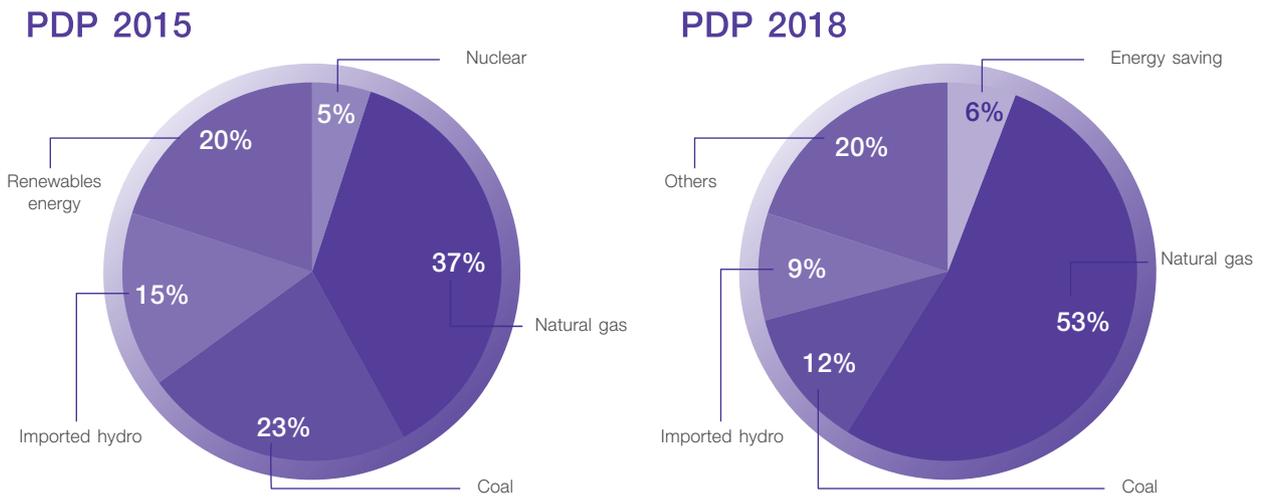
Banpu Power Public Company Limited is a Banpu's subsidiary operating both conventional and renewable power generation businesses across Asia, including in Thailand, Lao PDR, China, Japan and Vietnam.

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:

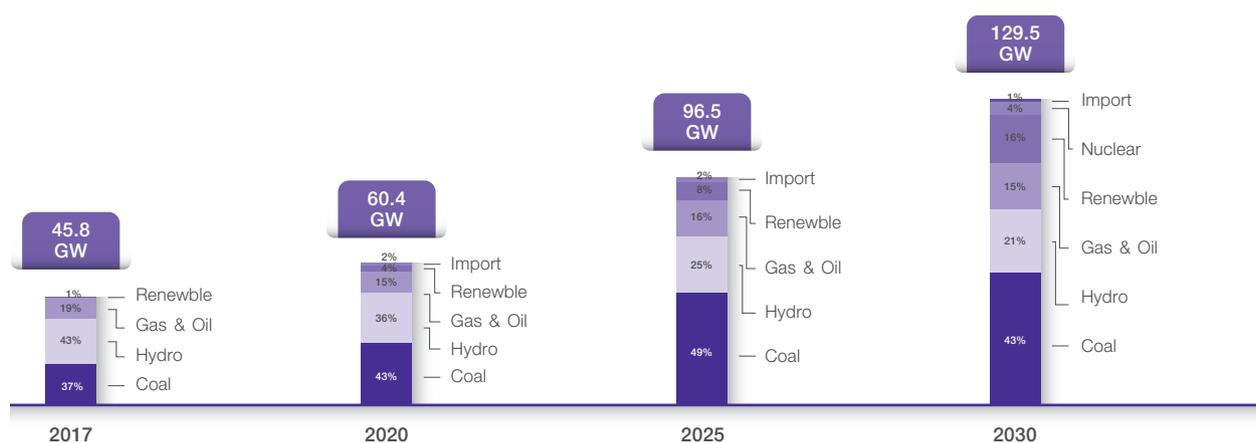
	Units	2018	2017	2016
Growth rate of power consumption in all sectors	%	1.4	1.7	1.2
Growth rate in generating capacity	%	4.9	2.8	4.9
Total generating capacity	MW	288,957	275,480	268,082

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 BCLP 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

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
2. Power	BMC	99.99	36.05	1.04	-	-	-	-
3. Gas	BIC	78.57	174.04	5.00	169.75	5.90	156.60	6.93
	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-level impact. The rehearsal was organized by the national-level 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:

- Projects that were approved by METI between 1 July 2012 to 31 March 2014
- Projects that were not under the requirements of the Three-year Rule.

- 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.

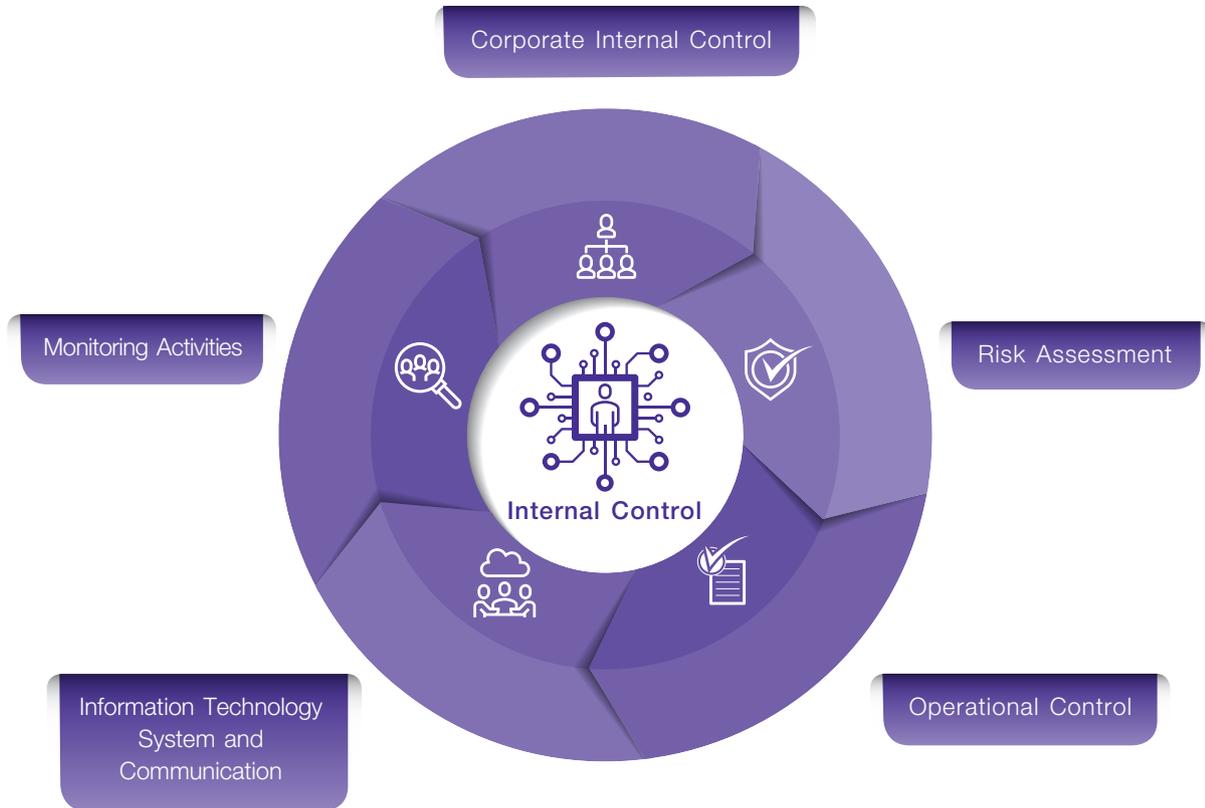
- The Japanese government announced a policy change from FiT scheme throughout a project's lifetime to bidding scheme for projects that were approved after 1 April 2017. The change might affect the investment return for new projects under the bidding scheme. However, the Company mitigated the risk by 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.



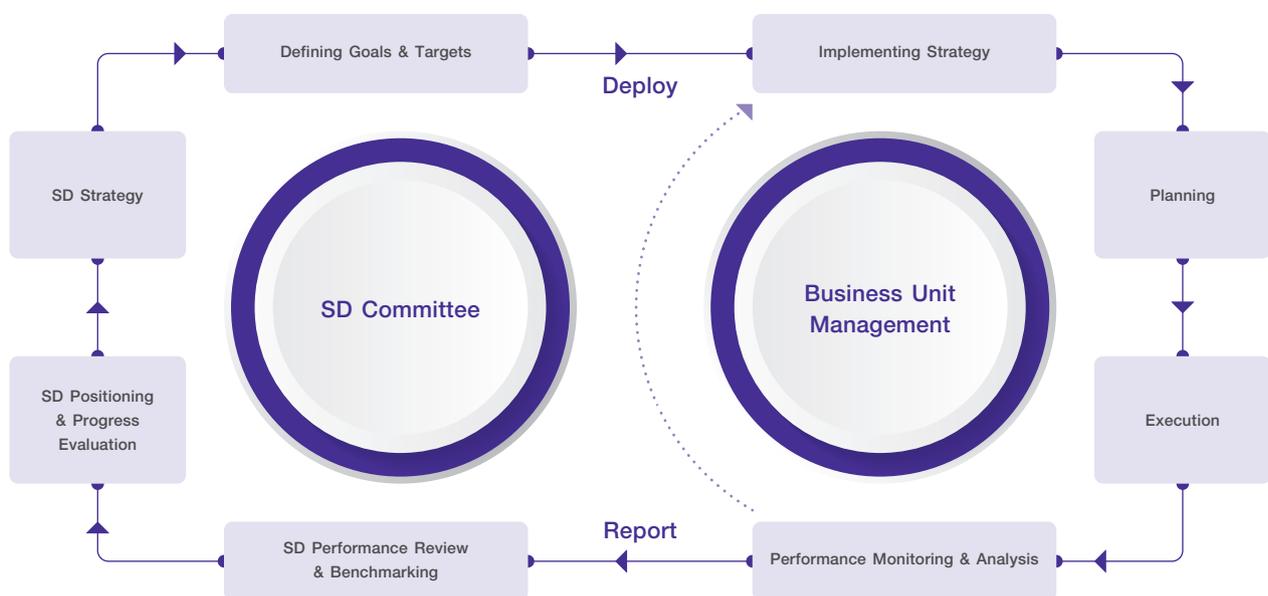
Sustainability Strategies

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.

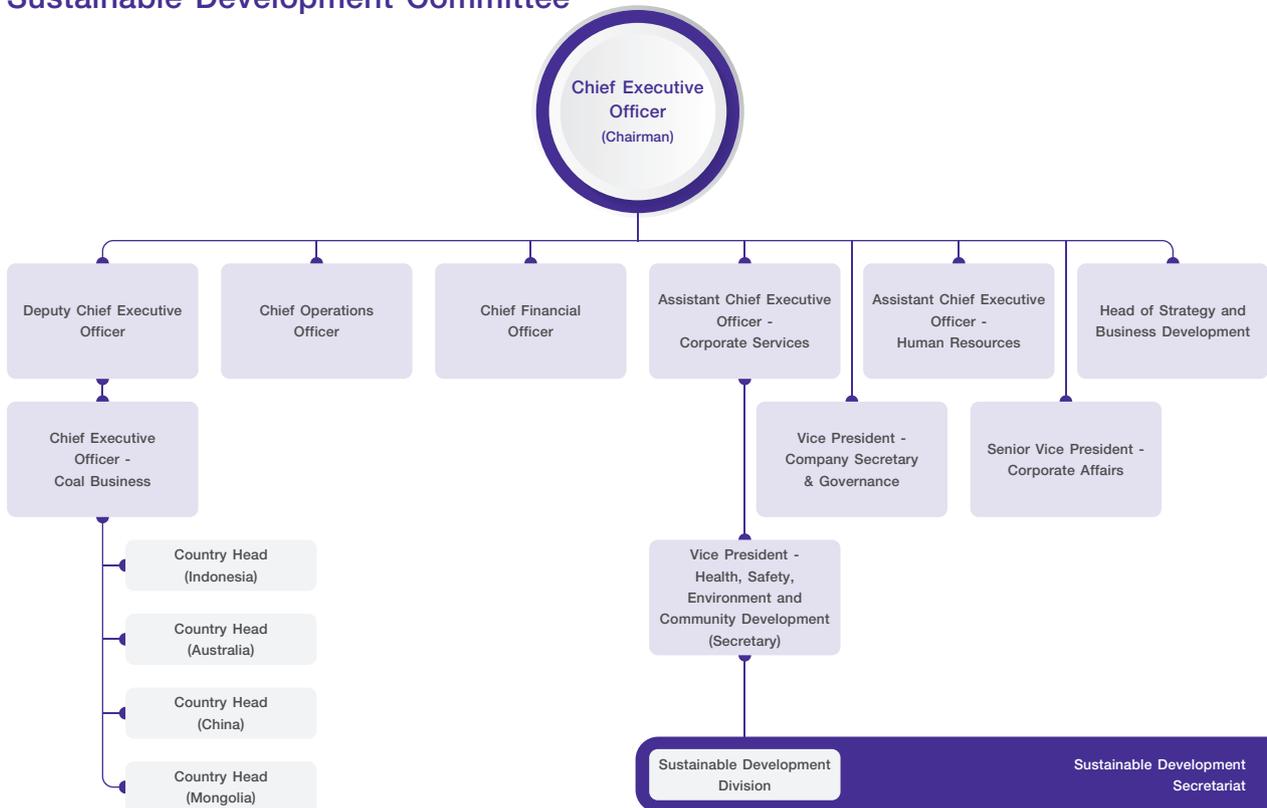
Managing Sustainable Development



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

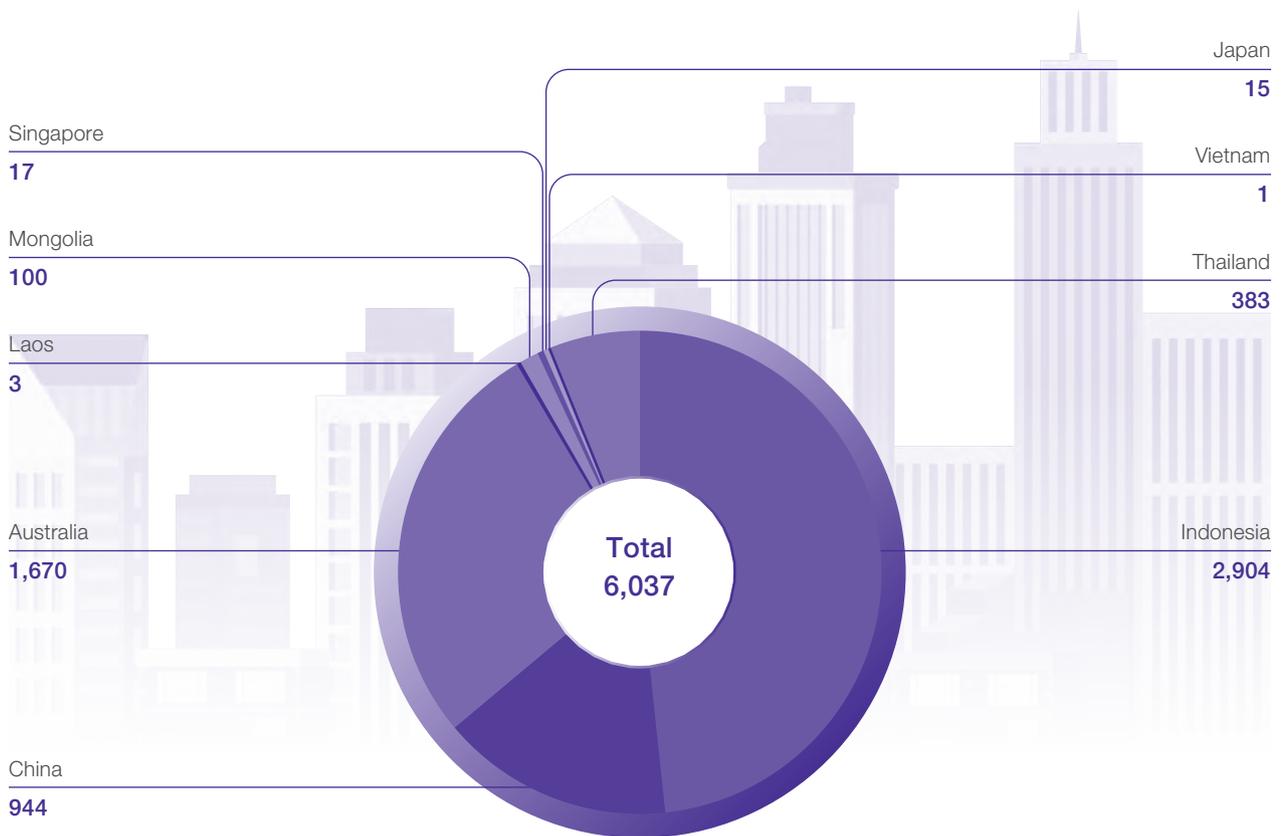


Performance Base



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 Vongkusolkit	Chairman	April 2016 - AGM 2019	12/12	1/1	-	-	-	1/1
2. Mr. Rutt Phanijsand	Vice Chairman/ Independent Director	April 2017 - AGM 2020	12/12	1/1	10/10	-	9/9	1/1
3. Mr. Teerana Bhongmakapat	Independent Director	April 2017 - 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 Prasetyo	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. Sudiarmo 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 Directors	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 email: 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 BLC 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. Rawi 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 Vongkusolkit
2. Mr. Ongart Auapinyakul
3. Mr. Verajet Vongkusolkit
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

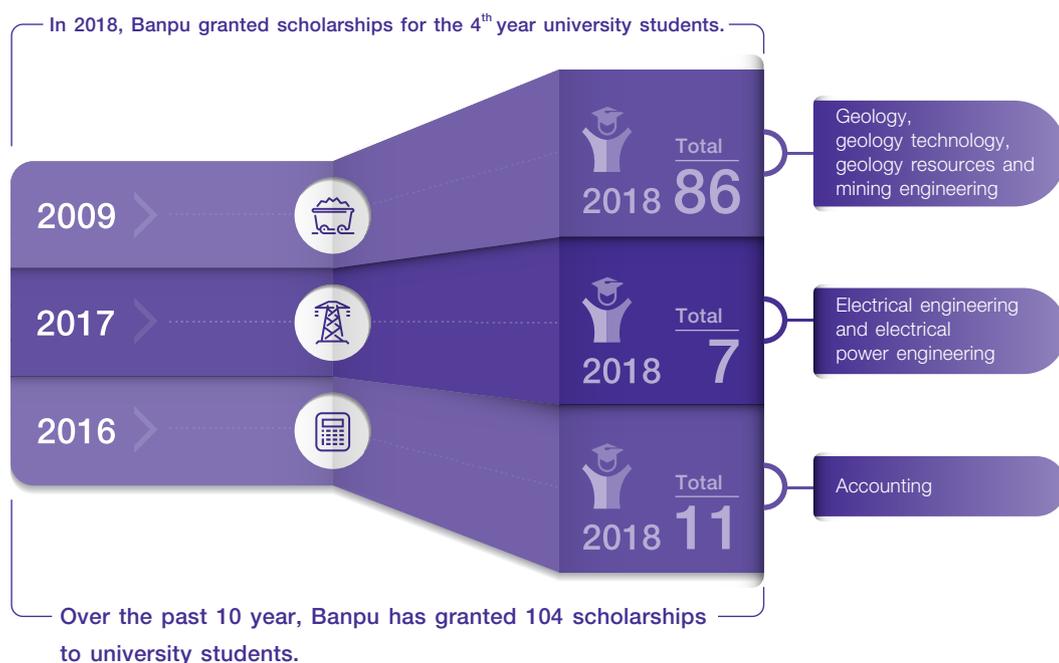
at Banpu-sponsored schools through the provision of native speakers for 7 consecutive years. Besides, the Company organized the career guidance activity “Career Day: Opening Doors into the Professional World and Planning for the Future” for Grade 9 and 10 students at all six Banpu-sponsored schools. 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.



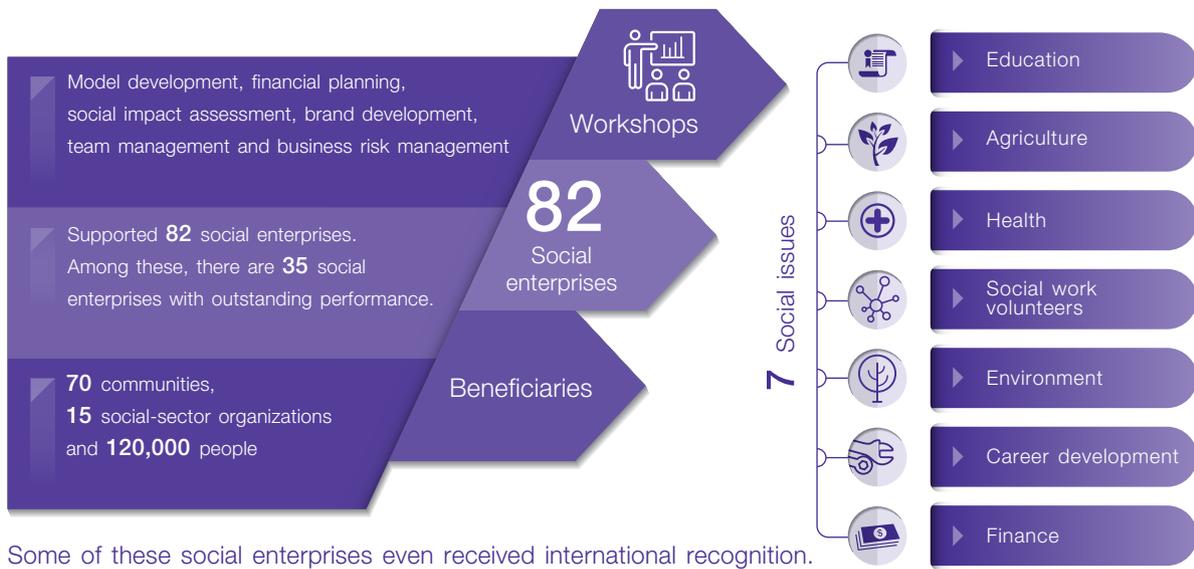
Youth Capacity Development

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



Some of these social enterprises even received international recognition.

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)

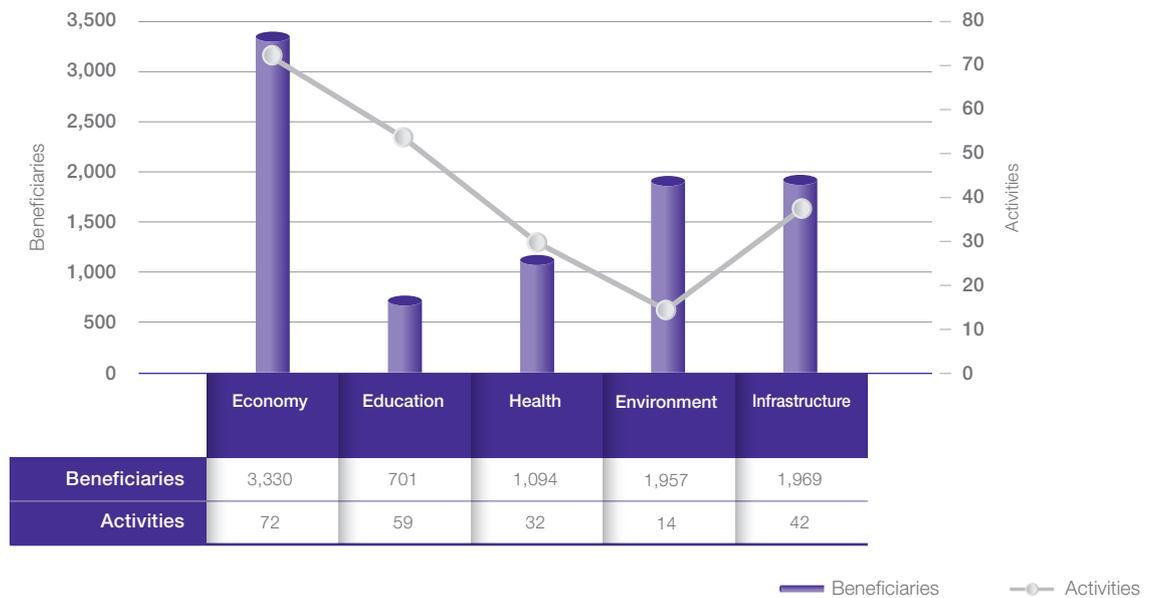
In 2018, ITM organized a variety of professional development trainings such as car driving, welding, and conducted comparative study for stakeholders in Bontang, Kutai Timur and Kutai Kartanegara to learn about how to manage the village enterprises. Furthermore, the Company promoted diverse income-generating 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 town communities after graduation as they will become a major driving force in their community's health care and education development in the future

Summary of Program and Beneficiaries



- 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 Vongkusolkit

Age 66

- Chairman of the Board of 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 Phanijsphand

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.
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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
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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, BLC Power Ltd. |
| 2010 - 2017 | Director, Centennial Coal Co., Ltd. |

5 Mr. Suthad 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

Other Companies

Present Senior Tax Advisory, Grant Thornton Thailand

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

Other Listed Companies

2013 - 2014 Commissioner, PT. United Tractors Tbk

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

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

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

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 Vongkusolkit**

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 Vongkusolkit	31,146,376	31,146,376	-
Spouse/Minor Child	6,488,580	6,488,580	-
2. Mr. Rutt Phanijsaphand	-	-	-
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 Vongkusolkit	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 Vongkusolkit	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 Sakoongaravek	-	-	-
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 Vongkusolkit 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 Vongkusolkit 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 Vongkusolkit 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 Limjaron, 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 Limjaron.

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)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 5.59% of its paid-up capital The major shareholder is Mid-Siam Sugar Co., Ltd. There are three joint directors, as follows: <ol style="list-style-type: none"> Mr. Chanin Vongkusolkit Mr. Buntoeng Vongkusolkit Mr. Verajet Vongkusolkit 	<ol style="list-style-type: none"> Mid-Siam Sugar Co., Ltd. 99.99% 	<ol style="list-style-type: none"> Mr. Isara Vongkusolkit Mr. Chanin Vongkusolkit Mr. Buntoeng Vongkusolkit Mr. Chusak Vongkusolkit Mr. Klanarong Sriroth Mrs. Amporn Kanjanakamnerd Mr. Pongsakorn Wongwuttikraikul Mr. Krisda Monthienvichienchai Mr. Verajet Vongkusolkit Assoc. Prof. Dr. Chiradet Ousawat Mr. Attaphol Vongkusolkit
2. TME Capital Co., Ltd. (Investment company)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 1.93% of its paid-up capital The major shareholder is the Vongkusolkit Family. There is no joint directors. 	<ol style="list-style-type: none"> The Vongkusolkit Family 80.01% Ufinves Co., Ltd. 15.23% The Kanjanakamnerd Family 3.82% The Putpongsiriporn Family 0.94% 	<ol style="list-style-type: none"> Mr. Vitoon Vongkusolkit Mr. Annop Vongkusolkit Ms. Phatsawan Vongkusolkit Ms. Theeranat Vongkusolkit Ms. Supawee Vongkusolkit Mr. Banchoet Vongkusolkit Mr. Kawin Vongkusolkit Mrs. Arada Vongkusolkit Mr. Amnuay Kanjanakamnerd
3. City Holdings Co., Ltd. (Holding company)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 0.31% of its paid-up capital The major shareholder is the Vongkusolkit Family. There is no joint director. 	<ol style="list-style-type: none"> The Vongkusolkit Family 87.00% The Kanjanakamnerd Family 6.00% The Putpongsiriporn Family 2.00% The Lattapanit Family 2.00% The Jenlapwattanukul Family 1.50% The Pradittan Family 1.50% 	<ol style="list-style-type: none"> Mr. Vitoon Vongkusolkit Mr. Banchoet Vongkusolkit Mrs. Arada Vongkusolkit Ms. Theeranat Vongkusolkit Ms. Phatsawan Vongkusolkit Mr. Kawin Vongkusolkit Mr. Amnuay Kanjanakamnerd
4. United Farmer and Industry Co., Ltd. (Production and distribution of sugar and molasses)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 0.69% of its paid-up capital The major shareholder is Mitr Phol Sugar Corp., Ltd. There are two joint directors, as follows: <ol style="list-style-type: none"> Mr. Buntoeng Vongkusolkit Mr. Verajet Vongkusolkit 	<ol style="list-style-type: none"> Mitr Phol Sugar Corp., Ltd. 87.56% 	<ol style="list-style-type: none"> Mr. Isara Vongkusolkit Mr. Buntoeng Vongkusolkit Ms. Chayawadee Chaianan Mrs. Amporn Kanjanakamnerd Mrs. Anchalee Suwattanapim Mr. Sukkan Wattanawekin Mr. Krisda Monthienvichienchai Mr. Verajet Vongkusolkit Mr. Pongsakorn Wongwuttikraikul
5. MP Particle Board Co., Ltd. (Investment company)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 0.59% of its paid-up capital The major shareholder is United Farmer and Industry Co., Ltd. There is no joint director. 	<ol style="list-style-type: none"> United Farmer and Industry Co., Ltd. 99.99% 	<ol style="list-style-type: none"> Mr. Isara Vongkusolkit Mr. Krisda Monthienvichienchai Mrs. Amporn Kanjanakamnerd Mr. Pariwat Kanchanathana Ms. Kannikar Vongkusolkit

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)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 0.29% of its paid-up capital The major shareholder is Mid-Siam Sugar Co., Ltd. There is one joint director: <ol style="list-style-type: none"> Mr. Buntoeng Vongkusolkit 	1. Mid-Siam Sugar Co., Ltd. 99.99%	<ol style="list-style-type: none"> Mr. Soonthorn Vongkusolkit Mr. Isara Vongkusolkit Mr. Buntoeng Vongkusolkit
7. Pacific Sugar Corp., Ltd. (Import and export of sugar)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 0.26% of its paid-up capital The major shareholder is Mitr Phol Sugar Corp., Ltd. There is one joint director: <ol style="list-style-type: none"> Mr. Verajet Vongkusolkit 	1. Mitr Phol Sugar Corp., Ltd. 99.99%	<ol style="list-style-type: none"> Mr. Krisda Monthienvichienchai Ms. Amporn Kanjanakamnerd Mr. Jirasak Vongkusolkit Mr. Verajet Vongkusolkit
8. Ufinves Co., Ltd. (Holding company)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 0.24% of its paid-up capital The major shareholder is TME Capital Co., Ltd. There is no joint directors. 	1. TME Capital Co., Ltd. 100.00%	<ol style="list-style-type: none"> Mr. Vitoon Vongkusolkit Mr. Annop Vongkusolkit Ms. Phatsawan Vongkusolkit Ms. Theeranat Vongkusolkit Ms. Supawee Vongkusolkit Mr. Banchoet Vongkusolkit Mr. Kawin Vongkusolkit Mrs. Arada Vongkusolkit Mr. Amnuay Kanjanakamnerd
9. Mitr Phol Bio-Power (Phuviang) Co., Ltd. (Production and distribution of sugar and molasses)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 0.24% of its paid-up capital The major shareholder is United Farmer and Industry Co., Ltd. There is one joint director: <ol style="list-style-type: none"> Mr. Buntoeng Vongkusolkit 	1. United Farmer and Industry Co., Ltd. 51.04%	<ol style="list-style-type: none"> Mr. Isara Vongkusolkit Mr. Buntoeng Vongkusolkit Mr. Krisda Monthienvichienchai Mr. Sirasak Tathong Mr. Prawit Prakritsri Mr. Jirasak Vongkusolkit Ms. Theeranat Vongkusolkit Mr. Nattapong Vongkusolkit Mr. Arnat Panya
10. Mitr Kalasin Sugar Co., Ltd. (Production and distribution of sugar and molasses)	<ol style="list-style-type: none"> One of the shareholders of Banpu Plc., holding 0.19% of its paid-up capital The major shareholder is United Farmer and Industry Co., Ltd. There are two joint directors, as follows: <ol style="list-style-type: none"> Mr. Buntoeng Vongkusolkit Mr. Verajet Vongkusolkit 	1. United Farmer and Industry Co., Ltd. 99.99%	<ol style="list-style-type: none"> Mr. Isara Vongkusolkit Mr. Buntoeng Vongkusolkit Mrs. Amporn Kanjanakamnerd Mr. Pongsakorn Wongwuttikraikul Mr. Sukkan Wattanawekin Ms. Chayawadee Chaianan Mr. Krisda Monthienvichienchai Mrs. Anchalee Suwattanapim Mr. Verajet Vongkusolkit

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 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	<p>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.</p>
7. Financial Institutions Regularly in Contact	<p>The Company is regularly in contact with around 30 local and international commercial banks and financial institutions.</p>

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 Aairy 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 Pvince, 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

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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. BLC 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, Bangkapi, Huaykwang, Bangkok 10310, Thailand	086 887 4796

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** Changed the name to Durapower Holdings Pte. Ltd. on 10 January 2019



**OUR WAY
IN ENERGY**



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